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WHITE, WELD & CO. INCORPORATED

December 8-9, 1976

LAA FILE #48

WHITE, WELD & CO. INCORPORATED

December 8-9, 1976

INDEX

ITEM	EXHIBIT NUMBER
Attendees	1
Agenda	2
Organization and Management - Potential Problem Areas - Principal Considerations - Tentative Organizational Structure	3
Investments - Corporate Securities - Long Term Government Securities - Tax-Exempt Bonds	4
Investments - Money Market Investments	5
Portfolio Analysis and Monitoring - Standards of Measurement and Use for Investment Per Performance Data - Sample Institutional Portfolio Analysis	6
Management of Discretionary Funds	7
Leverage: Usage and Form	8
Guarantees: Usage and Form	9
Credit Ratings: Description and Implications - Description of Bond Ratings - Understanding Municipal Credit - Corporate Bond Rating Study	10

Exhibit I

ATTENDEES

State of Alaska

Sterling Gallagher
Commissioner,
Department of Revenue

Jim Edenso
Deputy Commissioner,
Department of Revenue

Clark Gruening
House of Representatives

Ms. Donna Lehr
Deputy Director,
Policy Development and
Planning

Bob LeResche
Director,
Policy Development and Plann
Planning

Jim Rhode
Administrative Aide to the
Chairman, House Finance
Committee

Leo Rhode
House of Representatives

White, Weld & Co. Incorporated

Paul Hallingby, Jr.
Chairman

Charles C. Lee, Jr.
Vice Chairman

Thomas C. Pryor
Executive Vice President

Paul A. Downey
Senior Vice President ✓

Edward D. Little
Senior Vice President ✓

Anthony V. Leness
Senior Vice President 12/9/76 Public Ltg

Nigel S. MacEwan
Senior Vice President Muni Dept

E. Corprew Reed
Senior Vice President Money Market

Charles J. Fuhrmann II ✓
First Vice President

Theodore P. Swick Fed
First Vice President

Kenneth D. Butler ✓
Vice President

Gordon H. Taylor
Vice President

Exhibit II

AGENDA *

Wednesday, December 8th

9:30 AM	Reception
10:00-10:45 AM	Organization and Management
11:00-11:45 AM	Investments: Corporate Securities
12:00-12:45 PM	Investments: Money Market Instruments
1:00-2:15 PM	Luncheon
2:30-3:30 PM	Break.
3:45-4:30 PM	Portfolio Analysis and Monitoring
4:45-5:30 PM	Management of Discretionary Funds

Thursday, December 9th

9:30-10:15 AM	Utilization of Leverage
10:30-11:15 AM	Guarantees of Obligations of Others
11:30-12:15 PM	Determination and Impact of Credit Ratings
12:30-	Luncheon

*All meetings will be held in Conference Room F, White Weld & Co. Incorporated, 44th Floor, 91 Liberty Street.

Exhibit III

ORGANIZATION AND MANAGEMENT

Potential Problem Areas

- Public Scrutiny
- Political Sensitivities/Insulation from Politics
- Avoiding Bureaucracy
- Maintaining Flexibility
- Responsibility
- Accountability
- Organizing to Administrate

- Evaluating Loan and Investment Proposals
- Structuring Transactions
- Execution of Transactions
- Monitoring Loans and Investments
- Impact of Loans and Investments

WW

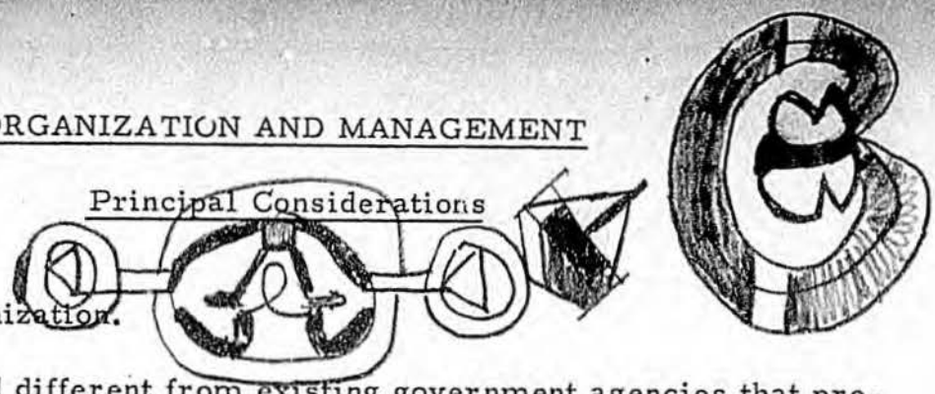
- Project Evaluation and Selection
- Economic Sector Analysis
- Accessing Advice/Data
- Evaluating Advice/Data
- Using Advice/Data
- Selecting and Evaluating External Managers (if any)

- disclosure
- discretionary management vs — Loans
  independent performance audit
  for and segregated funds money

- definition of unrealized contributions
  of principal from GF over 2.5%
  whether or not to depress valuation unrealized

pledge of income to cover loss of
principle bad debt reserve

ORGANIZATION AND MANAGEMENT



Principal Considerations

1) Autonomous organization.

2) Independent of and different from existing government agencies that presently deal with financing development projects and investments.

3) "Joint Stock" company - private and public sectors represented on policy boards.

4) Organizational structure should reflect cooperative and concerted action between government and private communities.

5) Directives and policies of operation should come primarily from boards, in cooperation with investment and development programs and policies of government.

6) Active government participation is necessary for establishment. In order to avoid concentration of power and decision making in the hands of government officials, policy boards must represent private citizens in majority.

7) Some members of the policy boards and all of the administrative body should be appointed by the elected bodies.

8) Bureaucratic delays should be avoided by decentralization of decision-making and power.

Council policy board is the ... immediate policy ... related ...

9 Strict & comprehensive loan & fiscal disclosure

delegations

10 Staff — Technical & discretionary advice & assistance (Comparative cost ...)

ORGANIZATION AND MANAGEMENT

Tentative Organizational Structure

Governor

- Appoints Public Members of Policy Board of Directors

Legislative

- Confirms Public Policy Board of Directors Appointments
- Determines Use of Fund Income
- Determines Percentage Allocation of Natural Resource Revenues to Fund if over 25%

Policy Board of Directors

- 12 Members
  - 4 Permanent/Government Members
    - 2 Legislators (House Senate)
    - 2 Commissioners
  - 7 Public (Appointed Members)
  - Fund President (Non-voting)

appt by Gov

options
perm positions for Leg & commissioners
staggered
* sub committee of Policy Board
united of Management Board

Duties and Responsibilities

- Determines Fund Policies
- Reports to the Legislature and to the Public on Fund Operations
- Selects Fund President
- Approves Fund Budgets
- Performs Audit and Operational Analysis of Fund
- Responsible for Sectoral Analysis of Alaskan Economy
- Approves Loans and Investments In Excess of Specified Amounts
- Appoints Public Members of Management Board of Directors

Management Board of Directors

Executive Director
|
Staff

- 5 Members
  - Fund President (Chairman)
  - 4 Public/Appointed Members

Duties and Responsibilities

- Approval of Loans and Investments
- Determination and Review of Fund's Organization and Operating Policies

who interprete policy of policy board

Fund Personnel/Advisors

- Fund President
  - Chief Operating Officer
- Fund Staff
  - Invest or Re-invest Moneys not subject to Management Board Approval
  - Evaluate Loan and Investment Proposals; Prepare and Package Loan and Investment Proposals for Presentation to Management Board for Approval
  - Supervision and Monitoring of Investments
- Employ External/Internal Advisor (s) to assist in above functions
- Operating Management
  - Accounting and Control

Exhibit IV

Exhibit IV

INVESTMENTS

Corporate Securities

The purpose of the following discussion is to summarize briefly the principal characteristics of the various types of debt and equity securities most frequently issued by publicly owned corporations in the U. S. Although the discussion confines itself to the characteristics of publicly issued securities, these characteristics also apply generally to privately sold securities. The last section discusses the primary difference between publicly issued and privately sold corporate securities.

Debt Securities

Debt obligations are incurred by corporate entities for various reasons, the most important of which are to provide funds for the acquisition of fixed assets or to add additional cash resources to the borrower's supply of general working funds on a semi-permanent basis. The issuance of debt generally permits the borrower to accelerate its rate of growth beyond that which it would be capable of achieving were it solely dependent upon its own internally generated capital funds. Although debt securities can be of various types, all rely on the borrower's future revenues as the principal means of repayment.

Corporate Debt Holders

The holders of corporate debt instruments are creditors of the borrower; they generally cannot exercise control over its affairs and do not have a voice in its management unless it has violated certain of the provisions of the contract governing the borrowing. In addition, debt holders are not entitled to participate in the residual earnings of the borrower; instead, their return is limited to the fixed coupon rate of the security. Further, a debt security has a specified maturity date whereas a share of common or preferred stock has no fixed maturity. Importantly, the claims of creditors rank prior to those of common and preferred stockholders, although there may be differences in priority of claim among the various creditors themselves.

Principal Features of Debt Securities

The five principal aspects of a debt instrument are its fixed return (or "coupon"), its maturity, its repayment provisions, its redemption provisions and its restrictive covenants.

The coupon of debt instrument is determined by many factors, principally the credit standing of the issuer, the term of the borrowing and the market rates for similar issues of comparable companies at the time of the borrowing. Generally, the lower the credit standing of the issuer and the longer the term of the borrowing, the higher will be the interest coupon. An additional important influence

on the level of the interest coupon is the form of the security, and senior or secured obligations commonly carry lower interest coupons than unsecured or subordinated obligations. Certain subordinated obligations convertible into the common stock of an issuer may, however, carry a lower coupon than the same borrower's senior obligations in recognition of the conversion feature. Other factors also impact the level of the interest coupon on certain types of debt securities, with the repayment schedule over the term of the borrowing and the length of the period during which the issue cannot be optionally prepaid by the issuer bearing importantly on the interest coupons of long term borrowings. A more rapid repayment schedule and a longer prohibition on prepayment will usually contribute to a lower interest coupon. Finally, borrowings with extremely liberal contractural provisions commonly require higher rates of interest.

The maturity of a debt security denotes the date on or by which the entire principal amount of the borrowing must be repaid. In the U. S., the most common maturities for publicly issued debt securities are 5, 10, 20, 25 and 30 years. Intermediate term securities (securities with maturities up to ten years) frequently are repayable only at maturity via a single lump sum payment. Longer term issues (securities with maturities of 20 to 30 years) generally require periodic repayment, beginning after a certain number of years, through the means of a sinking fund. If a debt security has a sinking fund, the issuer must make periodic payments to a trustee, who uses these funds to purchase the securities in the market and retire them. A sinking fund is valuable to securities holders as it provides support for the market price of the issue and provides for the orderly repayment of the borrowing. The amount of a required sinking fund payment may be fixed or variable, depending on the terms of the borrowing. Most issues either require fixed payments during the repayment period (referred to as a level sinking fund), increasing payments over the repayment period, or fixed payments in each year except the last when a larger (or "balloon") payment is required. In certain cases borrowers are permitted to anticipate future sinking fund payments by "doubling up" or to surrender securities purchased in the open market in lieu of making a cash payment. Types of sinking fund schedules other than the above, including schedules which only require repayments to be made when earned, are used infrequently.

Some debt issues are serial issues. Instead of being a single issue subject to a sinking fund, a serial issue consists of separate securities which mature periodically until the final redemption date. Because of the differences in the maturities of the securities comprising a serial issue, it is common for a serial issue to be split into two or more tranches each bearing a different interest coupon.

In most debt issues, the borrower is given the right to buy back (or "call") all or a portion of its issue prior to maturity at a specified price. Commonly, the borrower is only allowed to exercise this right after a certain number of years. In some circumstances, the borrower is allowed to call its issue immediately. A call provision favors the borrower over the investor as, if an issue is called to permit the borrower to refinance at a lower interest cost, an investor may not be able to reinvest at an equally high yield. As a result, a borrower usually has to pay a premium over par value when it calls its securities, which normally amounts to one year's interest and declines to zero one year prior to maturity. Many intermediate term issues are callable only one or two years prior to maturity, however, at no premium.

For most debt issues, the contract between the borrower and the lender contains restrictive provisions designed to provide a measure of protection for the lenders' investment over the term of the borrowing. Usually these covenants limit such items as the amount of the borrower's additional debt, dividend payments, leases and mergers. Two of the most important restrictive provisions are the negative pledge provision - which prohibits a borrower from pledging its assets to secure future debts - and the cross default provision - which accelerates the repayment of the issue if the borrower defaults on certain of its other debts. Frequently, these covenants are contained in an indenture between a corporate trustee (generally a bank) and the issuer. If no indenture is used, these covenants are usually contained in the terms of the security itself. The extent of the restrictions placed on a borrower depends on his credit standing and the term of the issue.

Types of Debt Instruments

The two principal types of corporate debt securities are generally referred to as "notes" and "bonds" or "debentures". Notes are typically short to intermediate term obligations which are either payable in full at maturity or subject to a limited sinking fund, are callable at par one to two years prior to maturity and are not governed by a formal indenture. The restrictive covenants of a note issue are generally contained in the security itself and the provisions governing the operational aspects of repayment are found in an accompanying fiscal agency agreement between the borrower and a bank. Notes of the form described above are generally unsecured obligations. Notes, however, may be secured obligations and subject to a formal borrowing agreement with a corporate trustee.

The terms "bonds" and "debentures" are used interchangably to refer to unsecured long term obligations governed by a formal indenture between a corporate issuer and a trustee. Bonds and debentures usually require a sinking fund and permit a call by the borrower only after a certain number of years.

A mortgage bond is a bond issue secured by a lien on specific assets (usually fixed assets) of the borrower. The mortgage providing the lien to the bondholders may be closed-end or open end. Under a closed-end mortgage, no further bonds can be issued against the specific property. Under an open-end mortgage, the borrower can issue additional bonds under the same lien. To prevent an unlimited amount of indebtedness from being issued against specific property, most open-end mortgage bonds contain restrictions limiting the total debt under the mortgage to a certain percentage of the value of the pledged assets. Many mortgage bonds also contain an after-acquired clause which extends the lien to properties acquired after the date of the initial issue. Although mortgage bonds are secured by specific assets, a bondholder is nevertheless required to look to the earning power of the issuer as his primary source of repayment.

The most common type of mortage bond is a first mortgage bond and is so called because its security is a first lien on the pledged assets. A second mortgage bond is exactly the same as a first mortgage bond except that it is secured by a second lien on the pledged property. Second mortgage bonds are used less frequently than first mortgage bonds.

Collateral trust bonds are bonds secured by stocks or bonds or other securities pledged by the issuer to a trustee. In the event of default, the trustee sells the collateral and repays the bondholders. This type of bond, popular in the 1920's and 1930's, is now used infrequently.

Income bonds are securities whose interest is required to be paid only when earned by the issuer. This type of issue offers an investor little hope of a fixed return and its use has generally been restricted to corporate reorganizations.

A subordinated debenture is a security which is subordinated in right of payment to other indebtedness of the issuer. Such securities, however, are senior to both common and preferred stock in liquidation. Because of their status, subordinated debentures are commonly regarded by senior lenders as near-equity and consequently can support further senior borrowings. It is possible for an issuer to have several issues of subordinated debt outstanding and for one issue to be subordinate to another; such issues are called junior subordinated debentures.

Convertible debentures are debentures which may be converted into the common stock of the issuer at a specified price. Such debentures are usually subordinated and from the standpoint of a senior creditor are viewed as equity when the market price of the related stock is reasonably close to or above the specified conversion price. When the market price of the related stock is well below the conversion price, convertible debentures are viewed as non-convertible subordinated issues.

INVESTMENTS

Equity Securities

Common Stock

The most important type of equity security is common stock. Collectively, holders of a company's common stock are its owners and are entitled to share in its residual earnings if dividends are paid. They are also required to bear the risks of ownership, but their liability is generally limited to the amount of their original investment. In liquidation, common stockholders have a claim on the assets of the company only after the claims of all creditors and preferred stockholders have been settled in full. Unlike a debt security, common stock has no fixed maturity date; the only way in which a shareholder can realize his investment is to sell his shares in the secondary market.

Authorized common stock is the number of shares which a company can issue without amending its charter. Issued shares are shares which have been sold to the public. Outstanding shares are shares which are in the hands of the public. Treasury shares are shares which have been repurchased but not cancelled by the company.

The par value of a common stock is a stated figure in the corporate charter. Although it is used in the preparation of accounting material, the par value of common stock has little economic significance. Stocks may be authorized without par value and there is no difference in value between a par value and a no par value stock.

The book value of a common stock is derived by dividing the net worth of the issuing company, less the par value of any preferred shares outstanding, by the number of common shares. In theory, the book value of a common stock is its liquidating value, but in reality the actual liquidating value may be higher or lower than the book value. Like par value, the book value of a common stock is of little economic significance.

The market price of a common stock is the price at which the shares are being traded in one of the stock exchanges or in the over-the-counter market. The market value of a common stock usually will differ considerably from its par value, book value or liquidating value as it is a function of the company's current and anticipated future earnings and dividends and the perceived risk of the stock on the part of investors. The market capitalization of a company is equal to the number of outstanding shares times the market price per share.

As owners, common shareholders are entitled to elect the company's board of directors which, in turn, selects management and runs the business. The only recourse a shareholder has against management is via the board of directors. If a director acts in a manner which results in personal gain, he is liable to suit. In electing directors, a shareholder is entitled either to vote all of his shares for each director (majority voting) or to vote all of his shares, multiplied by the number of directors to be elected, for less than the total number of directors being elected (cumulative voting).

Certain companies may have one or more classes of common stock differing in their claims on income and as to voting p[illegible]r. One class of stock may have no voting privilege but be entitled to a prior claim on dividends while another may have voting power but a junior claim on dividends. The use of various classes of common stock is generally adopted when it is desired to concentrate the voting control of the company in a single group.

Occasionally, a common stock has preemptive rights. A preemptive right entitles a shareholder to maintain his proportional ownership interest in the company by giving him the first opportunity to purchase, on a pro-rata basis, any new common stock or convertible securities being sold to the public.

Preferred Stock

Preferred stock is a hybrid type of security, combining certain features of both debt and common stock. Like debt holders, holders of preferred stock do not participate in the residual earnings of the issuer and their rate of return is limited to the specified dividend of the preferred stock. Unlike interest payments on debt issues, however, preferred dividends can be omitted without resulting in the insolvency of the company. When preferred dividends are omitted, holders of preferred shares are usually entitled to elect a certain number of directors; otherwise, preferred shareholders do not participate in the management of the issuing company. Most preferred dividends are cumulative and if they are omitted, all arrearages must be made up before common dividends can be resumed. Preferred dividends are a contractural obligation, and are senior in right of payment to common dividends.

Preferred stock, like common stock, has no specified maturity. However, preferred stock is rarely viewed as a permanent means of financing and provisions are usually made for an issue's orderly retirement via a sinking or purchase fund. A preferred stock sinking fund operates in the same manner as a bond sinking fund. A purchase fund requires the issuer to expend a certain sum each year to acquire and retire the outstanding shares, but this requirement is usually limited by restricting the p[illegible]ce which can be paid for the shares to par value. If the market price is above par, no purchases will be made for the purchase fund.

Practically all preferred stocks have call provisions similar to those of corporate bonds. Certain preferred stocks are convertible into the common shares of the issuer. Other preferred stock issues are participating and share in the residual earnings of the issuer according to certain formulae, usually based on common dividends.

Differences Between a Public and a Private Securities Issues

A securities issue which has been registered with the Securities and Exchange Commission and sold in an underwritten offering by a syndicate of investment banking firms is referred to as a public issue. Such issues, whether listed on a major stock exchange or traded between dealers, are freely transferable between holders and consequently offer an investor a high degree of liquidity.

A securities issue which has been sold directly by an issuer to an institutional investor (such as an insurance company) without registration with the Securities and Exchange Commission is referred to as a private issue. Because they are not registered, private issues are not freely transferable and their marketability is consequently very limited. To compensate an investor for this lack of liquidity, private debt issues usually carry higher interest coupons and more restrictive covenants than similar public debt issues. Similarly, private equity issues generally cannot be sold at as advantageous prices as public equity issues.

INVESTMENTS

Long Term Government Securities

The direct obligations of the U. S. government and its agencies, together with securities bearing the full faith and credit guarantee of the government, constitute the highest quality debt securities in the U. S. Although certain of such securities, principally Treasury bills, are issued for very short maturities, a substantial amount is issued for maturities ranging from three to thirty years. Short term government securities are considered in the following section on Money Market Instruments.

The principal long term direct obligations of the U. S. government are Treasury notes and bonds which are usually issued for maturities of up to ten and thirty years, respectively. Such bonds and notes are sold periodically directly by the Treasury and a substantial amount is outstanding at all times; secondary market trading is very active.

Along with the direct obligations of the Treasury, the government also raises funds through its agencies which issue both short and long term securities either guaranteed by the government directly or backed by the agencies, which are themselves instrumentalities of the government. Many government agencies issue such securities, but principal among these are the Federal Home Loan Banks, the Federal National Mortgage Association, the Federal Land Bank and the Bank for Cooperatives. Issues of these borrowers are generally sold through public offerings underwritten by banks and investment firms.

Through Acts of Congress, the government has also authorized certain quasi-government entities to issue securities bearing its full faith and credit guarantee including the Export Import Bank of the U. S. and Private Export Funding Corporation. Congress has also authorized the application of its guarantee to securities of private corporate issuers for specific purposes, including bonds issued to finance the construction of U. S. flag ships under the provisions of Title XI of the Maritime Act. Such bonds have recently begun to be issued in significant amounts and are generally referred to as Title XI bonds.

INVESTMENTS

Tax-Exempt Bonds

Tax-exempt bonds are issued by public borrowers for a broad range of purposes subject to two basic restrictions. First, tax-exempt bond proceeds may not be used to finance projects in the private sector (except for solid waste and pollution control which are specifically excepted by the IRS). Second, tax-exempt bonds may not be used for arbitrage (reinvesting tax-exempt bond proceeds in higher yielding taxable debt securities). Capital items traditionally financed by tax-exempt bonds issued by state and local governments are local streets and roads, drains, water, sewer, schools and electric power generation, transmission and distribution. In recent years a growing volume of municipal bonds have been issued for housing (generally through a state housing finance authority), hospitals, airports, recreational facilities, transportation facilities (turnpikes, ports, etc.), bulk power supply systems (financed by a combination of both public and private electric utilities), pollution control and solid waste recovery systems.

There are essentially two basic types of tax-exempt bonds: (1) tax supported general obligations bearing an issuer's full faith and credit; (2) limited liability bonds payable solely from a specific source of revenues. The former is used primarily to finance non-revenue producing capital items such as a school building, courthouse, or local road. These facilities are supposed to benefit the general public and, therefore, debt issued for them is secured by the general taxing power of a local government. The latter, on the other hand, helps finance new capital for revenue producing projects that can be self-supporting from income derived from charges to those who use the facilities. Examples of "user-pay" municipal enterprises include toll roads, electric utilities, and water and sewer systems. The bond purchaser, or lender of money, is compensated by the issuer in terms of interest rate, which reflects perceived risk of the bonds and supply and demand factors of the tax-exempt bond market.

Exhibit V

Exhibit V

INVESTMENTS

Money Market Instruments

Money market instruments are short-term, high grade debt instruments that carry a minimum amount of risk and which can readily be turned into cash without material loss. Because of their relatively short maturity, generally no more than twelve to twenty-four months, money market instruments have a readily stable market value at all times. The principal types of money market securities are Treasury bills, notes and bonds, securities guaranteed by the government or issued by its agencies, municipal securities, bank certificates of deposit, bankers acceptances and corporate commercial paper. These securities are frequently purchased by investors seeking a temporary investment for surplus cash resources.

Treasury Securities

The Treasury securities which are most often referred to as money market instruments are Treasury bills and Treasury notes and bonds maturing within two years. Treasury bills, issued at auction each week and maturing in periods from three months to one year, are the backbone of the money market. Because of the large volume of Treasury bills outstanding and their continual issuance, a short term investor can normally find an issue with a maturity on or close to the date when his surplus funds will be required for their intended purpose.

Treasury bills are issued in bearer form and on a discount basis. The holder receives the full face value of the security at maturity in lieu of interim interest payments.

Treasury notes and bonds are government securities which have original maturities of over one year. Both are issued in bearer form and interest is payable upon presentation of a coupon. Treasury notes by law may not have a maturity in excess of ten years while Treasury bonds generally mature in more than ten years. As either Treasury bonds or notes move into the under two-year money market maturity range, they become attractive investments for investors who wish to invest for longer maturities than offered by Treasury bills.

Other Government Securities

A large number of government agencies also issue securities which are either guaranteed directly by the government or fully backed by the agencies themselves which are conservatively run entities chartered by Congress and supervised and/or owned by the government. Among such issuers are the Federal National Mortgage Association, the Federal Home Loan Banks, the Federal Land Banks, the Government National Mortgage Association, the Federal Intermediate Credit Banks and the Banks for Cooperatives. Securities of these issuers are sold on both a coupon and a discount basis and for various maturities from three months to twenty years. Most issues are relatively short-term, however, and fall either directly into the money market or are drawn in as their maturity date approaches.

The attraction of these securities to money market investors is that their yields are somewhat higher than those of Treasury securities in light of the fact that they are indirect rather than direct obligations of the government.

Municipal Securities

Municipal securities possess two characteristics that are important prerequisites for a money market instrument: a large outstanding supply of obligations of various types and maturities and an active secondary market. The principal types of municipal securities traded in the money market are short term notes and long term bonds, drawn into the money market as their maturity approaches. Municipal securities are attractive to investors because of their tax-exempt yields.

Certificates of Deposit

A Certificate of Deposit is a negotiable instrument representing an interest bearing time deposit in a commercial bank. Certificates of deposit (CD's) began to be issued by commercial banks in 1961 and are ideal instruments for the investment of short term idle cash because a purchaser (lender) can negotiate with the bank seller (borrower) to tailor a CD to his exact maturity needs. Moreover, there is a very substantial amount of CD's outstanding and the secondary market is extremely active; if unforeseen circumstances arise an investor can sell his CD's in the marketplace. The interest rate on CD's is higher than that for either Treasury or agency securities of the same maturity.

Banker's Acceptances

A banker's acceptance is created when a commercial bank "accepts" (endorses) a draft drawn on it for the account of one of its customers for payment on a specified future date. Time drafts are usually associated with the payment for goods shipped in international trade. By accepting a time draft, a bank substitutes its credit for that of its customer and an accepted draft thus becomes similar to a security of the bank itself. Because of the very short maturity of most banker's acceptances, usually not more than ninety days, they are readily sold in the money market.

Commercial Paper

Commercial Paper is an unsecured promissory note of relatively short maturity issued by a well known corporation with good credit ratings to finance short term borrowing needs. Commercial Paper, because of Securities and Exchange Commission requirements, may not be issued for maturities longer than 270 days. All commercial paper is sold in bearer form at a discount with rates running slightly higher than Treasury bills. Because of their short maturity and high liquidity, commercial paper is an ideal money market instrument.

Exhibit VI

INVESTMENT COUNSEL ASSOCIATION OF AMERICA

STANDARDS OF MEASUREMENT AND USE FOR INVESTMENT PERFORMANCE DATA

INTRODUCTION

In recent years, the measurement of investment performance has become a topic of widespread interest. The techniques employed and the uses of the results have been varied and remain in a considerable state of change. Consequently, it is often impossible to gain perspective through comparisons of different investment records measured with different calculation methods. The principal problem is that there are no minimum, uniform standards for measurement and use guiding all organizations providing investment management services.

This report will formulate standards to provide the Investment Counsel Association of America membership with some guidelines and background information for compiling and using portfolio performance data. The problems associated with measuring investment results are complex and make it extremely difficult to arrive at a satisfactory and still simple solution to them. The central problem is that rarely, if ever, do two distinct portfolios have identical characteristics and investment objectives. Therefore, an attempt to compare the success of different investment programs solely on the basis of quantitative, statistical results without regard to the qualitative, individual, subjective circumstances must have limited value. However, despite the imperfect character of purely numerical measurements, the Investment Counsel Association of America does endorse certain standards of measurement and use. The recommendations are not intended to deal with

every facet of performance measurement. Some areas are intentionally treated in a general way in order to provide scope for adapting the object to varying circumstances and also because being too specific on some subjects would result in having to establish more "rules" to deal with exceptions than seems practical. Therefore, this report is confined primarily to recommendations of minimum standards on how to calculate performance data and how best to use this information. Moreover, while performance measurement of specific portfolios for manager or client use has unquestioned individual value, this report is written with the objective of facilitating performance comparisons between portfolios and the recommendations are stated accordingly.

No firm is required to adopt these recommendations unless it wishes to make the statement regarding the presentation of investment performance figures that: "All Representations are in Accordance with Standards Approved by the Investment Counsel Association of America."

There are many purposes served through comparisons of different portfolio performance records. Perhaps the purpose which is the most controversial is the presentation of a performance record in an effort to demonstrate to prospective clients the abilities of an investment manager. It is very difficult to construct a sample of data which is an accurate picture or is representative of a manager's work. The difficulties of data construction and interpretation exist whether the data sample is one account, ten accounts, or all of a manager's accounts, either of a certain class (by account type, size, performance rank, etc.) or in total. A major goal of the recommendations in this report is to provide a systematic approach to this problem. The solution, and the concept of this report, is that the following recommendations are not

isolated from each other but stand together as flexible parts of a unified filtering process. In most instances, the recommendations act as guides and are not narrowly restrictive. They encompass many filtering alternatives and the only general restrictions are disclosure and willingness to substantiate representations if requested.

Performance figures might be selected for presentation including (1) total portfolios of (2) all (3) corporate pension funds (4) managed continuously (5) during a five-year period and (6) with assets at the end of the period in excess of $1 million. The rates of return would be (a) calculated and displayed along the lines of the techniques described in this report, (b) captioned and/or footnoted to disclose that they include accounts filtered or selected with the six above criteria and (c) substantiated, upon request, as being representative, for example, if a median statistic, one account or ten accounts were used to represent all accounts. Within these same conditions, one account with a very favorable rate of return could be held out as an example of a firm's work so long as (a) the return calculations are appropriate, (b) it is disclosed that the account was selected and has one of the best rates of return of all accounts managed and (c) it is substantiated that it is only representative of itself and no other account managed by the firm.

to be done by an independent performance audit.

RECOMMENDATIONS:

I Standards of Measurement

1. Total Return: Investment results should be computed on a total return basis.

2. Rates of Return: Investment results should be computed as "time weighted" rates of return for use in making comparisons with market indices and results of other portfolios.

3. Total Portfolio and Various Portfolio Segments: Investment results should be computed on the total portfolio and, where useful to demonstrate the ingredients of the total results or specific areas of investing, on the portfolio's various segments.

4. Definitions within Portfolio Segments: Investment results for portfolio segments should be based on comparable characteristics such as types, marketability and size of holdings.

5. Total Time Period Shown: Investment results quoted to third parties should include at least five years' experience where possible.

6. Time Intervals Used: Investment results should indicate the total rate of return on an annual basis and on a compound annual basis for multiple time periods.

7. Variability of Return: Investment results should be characterized not only by the magnitude attained but also by the degree of variability experienced in reaching the return.

II Standards of Use

1. Management Discretion: Investment results should be used to reflect the manager's performance only if he operated with effective discretion.

2. Number of Results Shown: Investment results should be shown for all portfolios within the designated category. Adequate disclosure should be made regarding the description of the sample shown. If requested, substantiation should be provided of representations made.

3. Tax-Exempt Portfolios: Because of the differences in impact on investment results of various tax brackets, some common base should be used when comparing rates of return. Tax-exempt portfolios automatically solve this problem and are preferred for use.

4. Similarity of Investment Objectives: Comparisons of investment results should be made only for portfolios with similar objectives.

5. Size: Comparisons of investment results should be made only for portfolios within reasonable categories of size.

6. Relevance to Third Parties: The selection of investment results shown should relate in some logical way to the circumstances of those receiving the information.

7. Comparative Format: Investment results should be shown in a way to facilitate comparisons.

8. Distribution of Information: The distribution of investment results is regulated under the Investment Advisers Act of 1940 and care should be taken to comply with these regulations.

DISCUSSION

I Standards of Measurement

Total Return

The investment results of a portfolio should be measured in terms of all the results produced. This includes the income generated as well as capital gains and losses both realized and unrealized. These are the three ingredients of performance and, even though a portfolio might not be managed on a "total return" concept, the only proper approach is to measure all of the portfolio's output. There is a considerable body of disagreement on this, particularly regarding the accounting for unrealized capital gains. We recommend that investment results be measured on an accrual accounting basis from period to period and not on a cash accounting basis that might require that the capital gains be realized or income (e.g., bond interest income paid out semi-annually) be received before being credited to portfolio performance. An acceptable procedure to account for income accruals is to estimate income by using the indicated annual rate of income at the beginning of the period. In each quarterly performance computation, this amount would be dividend by four.

Rates of Return

Rates of return are of two general types: dollar weighted (or internal) and time weighted. The dollar weighted rate of return has specific value in measuring a given portfolio's results and this is the most appropriate figure for comparison with actuarial assumptions for corporate pension funds. However, when comparing investment results between portfolios, the differences

in size and timing of cash flows can create considerable distortions. It can be argued that a dollar weighted rate of return is appropriate for use when measuring only the common stock portion of a portfolio because the investment manager has control over the timing and amounts of cash flows into and out of equities within the portfolio. However, whereas this is true to some extent, these judgments are often influenced by cash flows into and out of the total portfolio. We have concluded that the time weighted rate of return is appropriate for use in making comparisons between total portfolios as well as various segments of portfolios and, also, with market indices which are by default time weighted because there are no cash flows.

It is difficult for many organizations to provide an exact time weighted rate of return measurement because of the necessity to revalue the entire portfolio whenever significant cash contributions or distributions are made. Therefore, we believe that an approximate time weighted rate of return is satisfactory in most cases and recommend the following principles be observed:

1. The portfolio be valued at least quarterly.

2. A formula should be used to minimize the impact of cash flows on performance results within a measurement period. One such formula is:

$$R = \frac{V^2 - V^1 - C + I}{V^1 + 1/2C}$$

Where V_2^1 = beginning market value = $1,000,000.
V^2 = ending market value = $1,200,000.
(including reinvested income)
C = net cash flow = $ 100,000.
(from any source including reinvested income)
I = total measurement period income = $ 10,000.
R = rate of return

$$R = \frac{\$1,200,000. - \$1,000,000. - \$100,000. + \$10,000.}{\$1,000,000. + 1/2(\$100,000.)}$$

$$R = \frac{\$ \ 110,000.}{\$1,050,000.} = 10.5\%$$

The formula states that the total rate of return for the time period is equal to what was earned in both price change and income (the numerator) as a percentage of the capital at work (the denominator). The amount earned is the difference between the beginning and the ending market values, adjusted for the net of all capital additions and withdrawals because they are not part of the return, and adjusted again for income because it is part of the total return. The capital at work is the beginning market value plus one-half of the net of all capital additions and withdrawals. The one-half is used because no effort is being made to identify the dates of cash flows. They are being netted together and the assumption is being made that they all took place at the mid-point of the time period. So, rather than saying the entire cash flow was at work for half the time, the formula says one-half the cash flow was at work the entire time. When the contribution C is very large relative to the beginning market value V^1 (e.g., over 10%) it may be necessary to modify the use of the above formula or value the portfolio as of the date of the cash flow to remove possible distortions by eliminating any sub-period containing an overly large cash flow.

3. A linked index should be used in keeping a record of this performance data over time and provides a means of developing annual figures from separate quarterly calculations. Such an index would be as follows:

	% Change	Index
Beginning Value	-------	100.0
Period 1	+5.0	105.0
Period 2	-3.6	101.2
Period 3	+1.8	103.0
Period 4	+6.2	109.4

Overall Return +9.4%

Total Portfolio and Various Portfolio Segments

The most appropriate comparison between portfolios is to show the results of the total portfolio investments. An extra dimension is given when the total portfolio returns are supplemented by percentage figures showing the proportions held in various portfolio segments. It is often useful to demonstrate bond management or stock management using the bond and stock segments of a total portfolio balanced between bonds and stocks. Therefore, it is also recommended that segments of different portfolios be used for comparisons to measure selection and also the impacts of timing of shifts between portfolio segments. The procedure described above for calculating rates of return on total portfolios is the same used for portfolio segments such as common stocks. When computing the performance of an equities only segment, however, it is necessary to compute the net cash flow as equal to the difference between the total of all common stock purchases and the total of all common stock sales during the period.

Definitions within Portfolio Segments

When comparing segments of portfolios such as the common stock segment of one portfolio with the common stock segment of another portfolio, it is important that the segments have comparable characteristics. It would not, for example, be appropriate to compare the common stock portfolio of a corporate pension fund which was 25% invested in the company's own stock with the common stock portfolio of another pension fund which had no such distortion. Managers inherit portfolios from a variety of sources which might hold concentrations in poorly marketable securities which would take time to

work out of successfully. The manager should not be charged with the distortions produced, good or bad, during a prolonged period of liquidation. There are also differences in treatment of types of holdings. In the case of convertible securities, some treat them as part of the portfolio's bond holdings, some treat them as common stocks and some divide them between those convertible issues selling near their base investment value as a straight bond and those convertible issues selling more on a common stock equivalent basis. Finally, it is not appropriate to compare results for diversified and undiversified portfolios. For example, "bond performance" should not be compared on the basis of one portfolio which has 30% invested in bonds including a diversified list of issues and another portfolio which might be of equal total dollar size but have a much smaller percentage of the total portfolio devoted to bonds and, perhaps, use only one or two issues.

Total Time Period Shown

The five-year time period for investment results is designed to be long enough to cover most business and market cycles. The minimum objective should be a length of time encompassing at least one market cycle containing rising market and declining market periods in order to permit an assessment of investment performance during both types of markets. Depending on the timing of market cycles and the fact that they do not usually open and close in consonance with the calendar, there will inevitably be occasions when a total time period of less than five years will be more appropriate.

Time Intervals Used

Within the total time period shown, the time interval recommended is one year with some indication of results for multiple time periods on a compound annual basis. An example of this type of presentation is illustrated below:

	Annual Rates of Return					Compound Annual Rates of Return			
						2 years	3 years	4 years	5 years
	1969	1970	1971	1972	1973	'72-'73	'71-'73	'70-'73	'69-'73
Fund 1	-5.2	8.3	12.8	19.0	-15.5	0.3	4.3	5.3	3.1

(All figures are hypothetical)

Variability of Return

It is not sufficient to know that a certain magnitude of return was attained. It is also valuable to know the degree of variability experienced in reaching the return. An appropriate way to express this variability is through the use of some statistical measure of dispersion of the sub-period rates of return around their average rate of return. The standard deviation is recommended as a means of quantifying dispersion. It is a widely used measure and, although there are a number of other techniques to measure dispersion, it is appropriate as a minimum supplement to rate of return figures.

The standard deviation indicates the limits within which the sub-period returns vary in producing an average return for a total time period. In normal distributions of a series of returns, plus or minus one standard deviation from the average would encompass approximately 68% of the returns. Plus or minus two standard deviations from the average would encompass 95% and plus or minus three standard deviations would encompass 99%. The task, then, is to calculate one standard deviation as the basic unit.

It is suggested that the sub-period returns be quarterly figures. The standard deviation of the quarterly rates is found by:

(1) obtaining the arithmetic average
(2) calculating the deviations of each rate from the average
(3) squaring each individual deviation
(4) taking the average of these squares
(5) extracting the square root of this average

Since these calculations produce the standard deviation of the quarterly rates, it is necessary to make a conversion so the standard deviation can be used as a supplement to rate of return figures expressed as compound annual rates. This is accomplished by multiplying the standard deviation of the quarterly rates by 2, the square root of the number of quarters in one year.

NOTE: See calculations at end of report.

II Standards of Use

Management Discretion

A primary purpose for generating performance figures is to provide a quantitative basis for evaluating the job done by the portfolio manager. It is only fair, then, for the results to reflect truly the manager's performance without an undue overlay imposed by others. This overlay may take the form of policy constraints (e.g., a current income requirement, ceilings on percentage to be invested in common stocks, restrictions as to the types of securities to be purchased, etc.) or approval mechanisms involving rejection of proposed investments. The investment results should reflect the portfolio manager's decision process. Although we recognize that the effective discretion of a portfolio manager might not be within the legal

definition of "discretionary," we believe a portfolio should be presumed to be discretionary if the portfolio manager can arrange purchases and sales of securities of his selection (within reasonable limits) and vary the portfolio mix between stocks, bonds, or cash equivalents without undue restrictions on his own best professional judgment.

Number of Results Shown

Selection criteria for a statistical sample of any size must be accurately disclosed to identify what the sample includes. The criteria might be complex (e.g., common stocks only of accounts which are fully discretionary, tax-exempt, managed by a firm's New York office for five years, etc.) or simple (e.g., "our best account" or "our three largest accounts") but they must be disclosed. Whatever the basis for selection of investment results to be shown, all accounts described by the selection criteria must be included. Although the quantity of accounts shown can be controlled by the specifics of categorization filters, the account sample must be complete as described.

A broad sample is desirable because the record of one portfolio or several portfolios is not statistically significant as the record of a portfolio manager or an entire firm of portfolio managers managing many portfolios. One account cannot be presumed to be representative of an individual's or firm's work unless the individual or firm so states and is prepared to substantiate. Therefore, it would not usually be appropriate to compare two firms of portfolio managers by comparing one account

of one firm with one account of another firm. This is true for any type of portfolio, including mutual funds or any other commingled funds. The use of one account may be appropriate in representing itself when it is desirable to show the results of specific types of investing such as with a high risk mutual fund, a mutual fund of international securities or a mutual fund whose policy it is to keep pace with general market averages. Furthermore, a single portfolio, pension fund, mutual fund or otherwise, should not be used by any firm as representative of another firm unless that firm has so stated and substantiated. It is not one firm's realm to present another firm's record. A firm's responsibility is to represent itself and not others.

In presenting investment performance results, it is appropriate to use summary statistical techniques such as averages, medians, etc., as long as they are representative of a broad sample of similar portfolios. Statistical and graphic representations should be specifically footnoted to disclose what they represent and a firm using them should be prepared to substantiate the representations by standing ready to describe the details of the underlying calculations. This substantiation should at a minimum contain the data presented in the attached worksheets.

Tax-Exempt Portfolios

The purpose of showing investment results of existing clients to third parties is to provide an illustration of what has been achieved under varying conditions. Due to differences in impact on investment results of various tax brackets, it is difficult to compare the results of different taxable portfolios. In order to demonstrate the investment process, the

common base of tax-exempt portfolios can be used with both tax-exempt and taxable third parties.

Similarity of Investment Objectives

No two portfolios are exactly the same. Inevitably, there is some variation between different portfolios and their objectives. However, comparisons of investment results should be made only for portfolios with generally similar objectives and involving acceptance of the total return approach.

Size

Size is an important consideration and effort should be made to compare portfolios only within reasonable categories of size. It is inappropriate to compare the investment results of very small portfolios with very large portfolios due to the great differences in operational flexibility. The use of a size threshold is suggested such as including only portfolios over $1 million.

Relevance to Third Parties

The selection of investment results to be shown should have some relationship to the circumstances of those receiving the information. For example, it is logical to show investment results which include a number of employee benefit funds in response to an inquiry from an employee benefit fund.

Mutual fund performance data are often used because they are a "public record." We conclude that this general use relates more to the integrity of an audited public statement rather than to the relevance of this record

and recommend that specifically selected investment results be used which have as close as possible a relationship to the third party viewing them.

Comparative Format

There are three general comparisons which might be drawn by those receiving a statement of investment results and the statement format should facilitate such comparisons.

1. The investor should be interested in the absolute level of accomplishment compared to his own goals. This does not speak to the realism of these goals whether they be achieving an actuarial assumption or some other pre-stated quantitative objective. He wants to assess the accomplishment relative to his own special standard.

2. The investor should be interested in the relative level of accomplishment within various market environments.

3. The investor should be interested in the relative level of accomplishment compared to some general representation of how others fared during the same time.

The first comparison uses the investor's own calculations and standards.

The second comparison requires some representation of the market environment. The widely used market averages involve a variety of calculation methods so that the results vary depending on market circumstances. This means a given index is not necessarily consistent in its reflection of the environment. The most appropriate answer (although not entirely satisfactory) is to review records of several market indices on a total return basis and assess the flow of experience over a sufficient period of time.

The third comparison requires the selection of representative universes of other managed money. This type of information has not been available for

many years but there are available universes of pension funds, mutual funds, bank commingled funds, insurance company separate accounts, etc. The integrity of the information has been high to date and provides a valuable means of comparison.

Distribution of Information

Care should be taken that any information provided third parties regarding portfolio investment results is in compliance with the Investment Advisers Act of 1940 and other guideposts, statutes, rules and court cases. In certain states, for example, any registered investment adviser must file new business materials. The judicial definitions of so-called federal "anti-fraud rules" are continually expanding to include prospect and client communications.

Outlined below are guidelines of what is deemed permissible and not permissible within the context of this report in distributing portfolio investment results.

Permissible:

Investment performance data may generally be shown which are:

1. clear disclosures of all relevant facts,
2. accurate,
3. for objectively justifiable time periods, and
4. for generally recognized categories within portfolios (e.g., total portfolio, total bonds, total common stocks) and for overall categories of portfolios (e.g., large pension funds, all tax-exempt institutional accounts).

Not Permissible:

Investment performance data may not be shown which are:

1. unclear, untrue or otherwise false or misleading and/or,
2. in the case of advertisements as defined under the Investment Advisers Act of 1940, in violation of the rules relating to advertisements.

In the Investment Advisers Act of 1940, a specific guideline is found in Rule 206(4)-1. This rule concerns "advertisements" by investment advisers and, in relation to the subject matter of this report, the most important provisions of the rule define the conditions under which distribution of an "advertisement" may constitute fraud or deception. For these purposes, "advertisement" is defined broadly as any written communication sent to more than one person (The term "person" is defined to include any organized group or persons, so that, for example, a corporate pension fund would be one person, even though it may have four people on its Finance Committee.) or any other notice or announcement in any publication or on radio or television which offers any investment advisory service with regard to securities.

One noteworthy example of circumstances under which an "advertisement" may not be distributed involves any situation where reference is made to past specific recommendations of the investment adviser which were or would have been profitable to anyone, unless the advertisement sets out or offers to furnish a list of all recommendations made by the investment adviser for the immediately preceding period of not less than one year -- a list which must contain specified, detailed information. The list must also contain

language in large type stating "IT SHOULD NOT BE ASSUMED THAT RECOMMENDATIONS MADE IN THE FUTURE WILL BE PROFITABLE OR WILL EQUAL THE PERFORMANCE OF THE SECURITIES ON THIS LIST."

Calculation Worksheet

The attached calculation worksheet utilizes quarterly rates of return derived from the formula described on Pages 7 and 8. The quarterly rates are used to develop:

1. Annual Rates - calculated by linking the quarterly rates geometrically through multiplication (not the same as the arithmetic average).
2. Compound Annual Rates - calculated by linking the annual rates for the specified time period and, then, reference to compound interest tables.
3. Standard Deviation of the Five-Year Quarterly Rates - calculated as indicated (also refer to Page 11 of report).

NOTE: The calculations described are basic to the production of investment performance figures. Of course, in large volume applications, appropriately programmed computers perform these tasks and the calculation worksheet is unnecessary.

Sample Report Format

The attached sample report format embodies the recommendations contained in this report. It is an example of how the recommendations can be used. There are a variety of alternatives and display methods which involve the use of the return figures or graphic representations of the rates of return. This example provides a basic standard for presentation or is appropriate substantiation of statistical or graphic representations. The two pages are companion pieces and the recommendations on Pages 4-5 of this report should be used as a checklist for completeness.

CALCULATION WORKSHEET *
FUND 1

Quarterly Periods	Quarterly Rates	Annual Index	Annual Rates	Compound Annual Rates	Deviation** from Average	Deviations Squared
		100.0				
1.	- 3.3	96.7			6.3	39.69
2.	14.0	110.2			11.0	121.00
3.	2.2	112.7			0.8	0.64
4.	1.5	114.4	14.4	11.4 (5 years)	1.5	2.25
		100.0				
5.	- 2.5	97.5			5.5	30.25
6.	- 2.3	95.3			5.3	28.09
7.	- 0.4	94.9			3.4	11.56
8.	4.5	99.1	- 0.9	10.7 (4 years)	1.5	2.25
		100.0				
9.	- 2.1	97.9			5.1	26.01
10.	-18.0	80.3			21.0	441.00
11.	14.6	92.0			11.6	134.56
12.	9.8	101.0	1.0	14.9 (3 years)	6.8	46.24
		100.0				
13.	8.4	108.4			5.4	29.16
14.	- 1.5	106.8			4.5	20.25
15.	0.9	107.7			2.1	4.41
16.	9.2	117.6	17.6	22.5 (2 years)	6.2	38.44
		100.0				
17.	8.4	108.4			5.4	29.16
18.	4.6	113.4			1.6	2.56
19.	5.6	119.7			2.6	6.76
20.	6.6	127.6	27.6	27.6 (1 year)	3.6	12.90
Total	60.2					1,027.18
Average	3.0					51.36
					Standard Deviation	7.2
					(Conversion Factor to annualize)	x 2
					5 Year Variability	14.4

*squares, square roots and compound rates are readily available in standard statistical tables
**squaring deviations makes them all positive so minus signs can be ignored

SAMPLE REPORT FORMAT
(Hypothetical Figures Used Below)

COMPARATIVE PERFORMANCE
(All figures are total return including price change plus income)

	Annual Rates of Return					Compound Annual Rates of Return				
	1969	1970	1971	1972	1973	2 years '72-'73	3 years '71-'73	4 years '70-'73	5 years '69-'73	5 Year Variability
ABC INVESTMENT COUNSEL, INC. Equity Performance of Selected Tax-Exempt Portfolios										
Fund 1	- 7.6	7.2	12.4	14.2	- 6.8	4.6	8.2	7.1	4.8	8.5
Fund 2	- 5.2	2.8	12.4	22.2	-11.0	3.3	4.1	3.7	2.2	7.9
Fund 3	1.2	- 1.5	19.0	25.6	-10.0	6.7	6.6	5.1	4.5	9.4
Fund 4	3.5	- 2.6	13.9	19.5	-14.4	2.4	8.7	3.6	4.6	8.1
Fund 5	2.0	2.6	15.0	22.6	-17.4	2.1	8.6	5.0	3.0	8.8
Fund 6										
Fund 7										
Fund 8	- ETC. -									
Fund 9										
Fund 10										
Fund 11										
Fund 12										
Fund 13	- ETC. -									
Fund 14										
Fund 15										
Equity Market Averages										
Dow Jones	-11.8	9.3	9.9	18.5	-13.3	1.4	4.1	5.4	1.7	8.6
S & P 500	- 8.5	3.9	14.3	19.0	-14.9	0.7	5.0	4.7	2.0	7.5
Mutual Fund Averages*										
Growth Funds	-15.6	-16.0	19.8	8.5	-27.8	-11.5	- 2.1	- 5.8	- 7.8	15.2

*Lipper Analytical Services

ALL REPRESENTATIONS IN ACCORDANCE WITH STANDARDS APPROVED BY THE INVESTMENT COUNSEL ASSOCIATION OF AMERICA

SAMPLE REPORT FORMAT

KEY TO EQUITY PERFORMANCE*

	TYPE	SIZE 12/31/73
Fund 1	Corporate Pension Fund	$10.5 million
Fund 2	Corporate Profit Sharing Fund	$ 6.8 million
Fund 3	College Endowment	$12.6 million
Fund 4	Charitable Foundation	$18.4 million
Fund 5	Religious Institution	$ 5.4 million
Fund 6		
Fund 7		
Fund 8	- - - - - - - - - - - - ETC. - - - - - - - - - - - -	
Fund 9		
Fund 10		
Fund 11		
Fund 12		
Fund 13	- - - - - - - - - - - - ETC. - - - - - - - - - - - -	
Fund 14		
Fund 15		

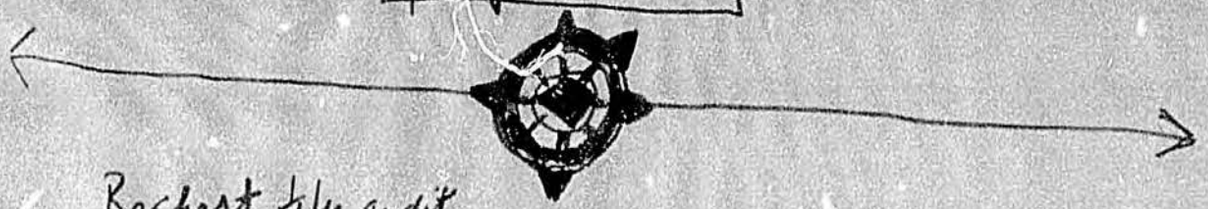
*Discretionary Management

Discretionary money management

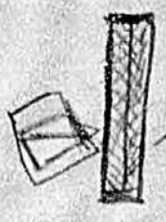
short term - in house (cash money management)

longer " & fixed income assets

→ Equity investments ←



Bechert 4/4y audit



PF - at least every six months - in time for legislative consideration

may want to make a requirement that "category I" loan (top rated investments) be examined first for potential borrower before "Category II"

October , 1976

Dear Mr.

Enclosed is the portfolio of Insurance Limited as of September 30, 1976 under management by Credit Suisse White Weld Ltd.

The third quarter of the year witnessed a slowdown in the rate of growth of the U.S. economy together with a somewhat lower level of inflationary pressures. As a result, interest rates resumed the downward trend that has been in evidence ever since reaching their peak in the middle of 1974. During the quarter the Eurodollar short term rates eased approximately 3/4% per annum, while medium and long term rates declined by approximately 1/2% per year.

Encouraged by these economic events we shifted a portion of the short term investments into the medium term sector. As a result, short term investments comprised 22% of the portfolio compared to 28% at the end of the previous quarter. Medium term investments rose by 5% to 50%, while long term investments rose by 1% to 13%.

As a result of the modest portfolio shift into higher yielding investments, the yield of the portfolio rose from 8.34% at the end of the last quarter to 8.50% on September 30, 1976.

Benefitting from the declining trend in interest rates, the market value of the straight debt segment of the portfolio rose by 0.8% to a level of 1.8% above cost. The equity linked segment rose by 3.0% compared with a rise in the NYSE index of 0.9% during the comparable period. The portfolio as a whole had a principal market value of $41,393,331 against a principal cost value of $41,538,669. The increase during the quarter was 1.0% for the portfolio.

The overall return on the portfolio for the second quarter consists of an average income of approximately 8.44% per annum or 2.1% for the quarter. Adding to this the net portfolio appreciation of 1.0% produces a total return of 3.1% of the average portfolio for the quarter and is about 9.0% for the first nine months of the year.

INSURANCE LIMITED

EURODOLLAR INTEREST RATES

CD's	January 2, 1973	June 30, 1976	September 30, 1976
1 month	5 3/8%	5 3/8%	5 3/8%
3 months	5 7/8	6	5 3/4
6 months	6 1/4	6 5/8	5 7/8
1 year	6 3/8	7 3/16	6 5/16
2 years	6 7/8	7 3/4	7 3/16
3 years	7	8 1/8	7 9/16
4 years	7 1/4	8 5/16	7 13/16
5 years	7 3/8	8 1/2	8 1/16
Straight Bonds			
10 years			
- U.S.	7	8 3/4	8 1/4
- non U.S.	7 1/4	9 1/4	8 3/4
15 years			
- U.S.	7 1/2	9 1/4	8 3/4
- non U.S.	7 3/4	9 1/2	9

PORTFOLIO AS OF SEPTEMBER 30, 1976

Nominal	SHORT TERM INVESTMENTS	Stated Yield or Coupon	Maturity	Yield/Price Bought At	Total Cost	Distribution of Portfolio
	Cash Balance				$ 16,328	
$2,000,000	Royal Bank of Canada, London	6 3/16%	11/8/76	7 1/32%	2,001,393	
1,900,000	Bank of America, London	6 31/32	11/30/76	6 15/16	1,901,879	
1,000,000	Morgan Guaranty Trust Co. of New York, London	9 1/4	12/20/76	7 9/16%	1,015,931	
746,000	Italian Credit Consortium, Notes	3	1/1/77	83	727,350	
500,000	Manufacturers Hanover Trust, London	7.225	1/26/77	7 3/16%	500,179	
250,000	Sunbeam International Finance, Notes	8	5/4/77	100 1/4	250,312	
1,000,000	Phelps Dodge Overseas Capital, Notes	7 1/2	5/15/77	87.70	955,400	
750,000	The Sumitomo Bank London	7 5/8	9/15/77	7 1/2%	750,883	
950,000	The Sanwa Bank London	7 5/8	9/21/77	7 1/2	951,118	
					$9,070,773	21.8%
	MEDIUM TERM INVESTMENTS					
1,000,000	First National Bank of Chicago, London	7 7/16%	11/2/77	3 3/4%	$ 977,950	
1,000,000	Amco Overseas Leasing N.V. Notes	10	11/28/77	98 3/4	994,300	
1,000,000	Kyowa Bank Ltd., London	8 3/4	12/1/77	99 1/4	992,500	
1,500,000	Saitama Bank Ltd., London	8 5/8	1/30/78	99 1/4	1,488,750	
2,000,000	Hokkaido Takushoko Bank, Ltd.	8 1/2	2/10/78	99 1/4	1,985,000	
1,000,000	Manufacturers Hanover Trust, London	11 1/8	9/20/78	10 2/16	1,012,003	
2,000,000	Bank of America, London	9 1/4	9/28/78	9 1/4	2,000,000	
900,000	Yasuda Trust & Banking Co. London	7 1/2	9/28/78	99 1/8	892,125	
2,000,000	Morgan Guaranty Trust Co. of New York, London	9 3/32	12/31/78	9 1/32%	2,003,201	
1,000,000	Outokumpu Oy Notes	7 1/2	2/1/79	96 1/8	1,000,520	
1,000,000	Mellon Bank, London	8 5/8	3/1/79	10 1/32%	964,646	
1,500,000	European Economic Community Notes	7 1/2	12/1/79	98 1/4	1,461,874	
500,000	Chrysler Financial Corporation, Notes	7 1/2	1/1/80	99	496,020	
300,000	Asahi Chemical Industry Co. Ltd. Notes	10 1/4	2/15/80	99	297,450	
1,000,000	Banque Francaise de Commerce Exterieur Notes	9 1/8	5/15/80	101 3/4	1,037,777	
600,000	Honda Motor Company, Ltd., Notes	7 1/2	1/15/81	91.66	550,000	
1,000,000	Electricity Council, Notes	8 3/4	3/15/81	98 1/2	987,187	
600,000	Suntory Overseas N.V., Notes	9 1/2	5/15/81	99 1/4	595,500	
1,000,000	First National Bank of Chicago, London	8 1/8	9/3/81	99 1/8	993,732	
					$20,730,535	49.9%
	LONG TERM STRAIGHT INVESTMENTS					
250,000	City of Quebec	9 1/4%	10/15/83	100	250,000	
450,000	First Pennsylvania Corp.	7 5/8	11/15/84	81 1/4	365,625	
600,000	K-Mart Australia Prop. Finance	7 3/4	12/15/84	87.62	525,750	
250,000	Beecham International	8 1/4	2/1/96	89	222,500	
250,000	Queensland Alumina	8 1/2	3/1/96	86.64	216,612	
500,000	Sandvik	9 1/2	4/15/85	99 1/2	499,083	
500,000	Province of Saskatchewan	8 1/4	9/1/85	100	501,159	
250,000	Norges Kommunalbank	7 1/2	2/1/87	92.29	230,500	
500,000	Ralston Purina	7 1/2	2/15/87	93.85	469,250	
420,000	Queensland Alumina	8 1/4	4/1/87	89.96	377,848	
500,000	Legal & General Assurance Soc. Ltd.	7 5/8	2/1/88	89 5/8	448,125	
500,000	RHM International Fin.	8	3/1/88	99	495,125	
500,000	Pacific Lighting Overseas	8	4/15/88	97 3/4	488,750	
250,000	Atlease Int'l. Finance	8 3/4	10/1/88	99 1/2	248,750	
500,000	National Coal Board	8 5/8	10/15/88	98 1/2	492,500	
250,000	Mitsubishi Rayon Co. Ltd.	9	4/1/89	98	245,000	
250,000	Cadbury Schweppes	7 3/4	10/15/90	68	170,000	
400,000	Cie des Bauxites de Guinea	8	12/31/90	81.69	336,581	
500,000	Mortgage Bank of Denmark	7 1/2	1/1/91	96 1/2	482,500	
400,000	Consolidated Foods Cv.	7 1/2	1/15/91	90 1/4	367,333	
					$7,434,991	17.9%
	EQUITY LINKED INVESTMENTS					
210,000	Cummins Int'. Finance	5%	8/1/88	94.44	217,225	
150,000	Eastman Kodak International	4 1/2	5/15/88	150.4	225,625	
200,000	Firestone Overseas Fin. Corp.	5	5/1/88	91	182,000	
400,000	Ford Int'l. Capital Corp.	5	5/1/93	107	427,075	
150,000	General Electric Overseas	4 1/4	6/15/87	104	156,000	
400,000	Gillette Company	4 3/4	12/1/87	102 1/8	408,500	
450,000	Honeywell Capital N.V.	5	2/15/83	85.55	385,000	
100,000	Honeywell Capital N.V.	6	11/15/86	106 1/4	106,250	
450,000	MassMutual Mortgage & Realty Investors	6 3/4	2/15/87	71.66	322,500	
250,000	J.P. Morgan Overseas	4 1/4	6/15/87	127	317,562	
250,000	J.C. Penney Int'l. Finance	4 1/2	8/1/87	64	160,000	
400,000	Bank Organization Ltd.	4 1/4	2/15/93	95 1/2	382,250	
450,000	Warner-Lambert Co.	4 1/2	4/1/87	88.50	398,625	
100,000	Xerox Corporation	5	12/1/88	98 5/8	98,625	
135,000	Union Bank of Switzerland	5	5/15/81	100	135,075	
	COMMON STOCK					
1,000 shs.	IBM			179 1/2	180,247	
3,445 shs.	General Electric			65 1/2	224,992	
					$ 4,323,151	10.4%
	TOTAL				$ 41,559,650	100%

INSURANCE LIMITED

I SUMMARY OF PORTFOLIO

	COST				MARKET VALUE 9/30/76					
	Principal	Accrued Interest	Total	%	Principal	Accrued Interest	Total	%	Annual Income	Yield on Investments
Total Short Term Investments	$ 9,070,773		$9,070,773	21.8%	$9,168,289	$220,823	$ 9,389,112	21.6%	$ 738,614	8.14%
Total Medium Term Investments	20,730,535		20,730,535	49.9%	21,236,966	772,391	22,068,802	50.8%	1,924,891	9.28%
Total Long Term Investments	7,414,085	$ 20,906	7,434,991	17.9%	7,455,925	391,572	7,847,497	18.0%	652,452	8.80%
Total Equity Linked Investments	4,323,276	75	4,323,351	10.4%	4,032,131	81,173	4,113,304	9.6%	213,519	4.94%
	$41,538,669	$20,981	$41,559,650	100%	$41,893,311	$1,465,959	$43,418,715	100%	$3,529,486	8.50%

INSURANCE LIMITED

CHANGE IN PRINCIPAL

	Cost 9/30/76	Market Value 6/30/76 (1)	Market Value 9/30/76	Change During 3rd Quarter 1976	Change From Cost
Short Term Investment	$9,070,773	$9,166,744	$9,168,289		
Medium Term Investment	20,730,535	21,126,625	21,236,966		
Long Term Investment	7,414,085	7,271,644	7,455,925		
TOTAL STRAIGHT DEBT	$37,215,393	$37,565,013	$37,861,180	+ 0.8%	+ 1.75%
Equity Linked Investments	4,323,276	3,909,373	4,032,131	+ 3.0%	— 6.7%
TOTAL PORTFOLIO	$41,538,669	$41,474,386	$41,893,311	+ 1.0%	+ 0.85%

(1) Assuming the net outflow of funds and the reinvestment of income during the third quarter 1976.

SHORT TERM INVESTMENTS

CD's (unless otherwise indicated)	Date of Purchase	Nominal Value	Issue Date	Stated Rate	Maturity	Yield/Price Bought At	Actual Cost	Amortized Cost	Market Yield/Price as of 9/30/76	Market Value as of 9/30/76	Accrued Int. from Purch. or Anniv. Date	Principal At Market Value	Annual Income	Income Receivd
Cash Balance							$ 16,328	$ 16,328		$ 16,328		$ 16,328		
Royal Bank of Canada, London	1976	$2,000,000	5/6/76	6 3/16%	11/8/76	7 1/32%	2,001,393	2,001,393	5 1/4%	2,052,165	$46,141	2,005,324	$142,578	
Bank of America, London	1976	1,900,000	5/28/76	6 31/32	11/30/76	6 15/16	1,901,879	1,901,879	5 1/2	1,850,234	43,660	1,906,574	133,641	
Morgan Guaranty Trust Co. of New York, London	1975	1,000,000	12/20/73	9 1/4	12/20/76	7 9/16%	1,107,470	1,015,931	5 5/8%	1,080,308	59,806	1,020,562	78,108	
Italian Credit Consortium, Notes	1975	746,000	-	3	1/1/77	83	619,180	727,350	99 1/4	745,937	5,532	740,405	78,942	11,190
Manufacturers Hanover Trust, London	1973	500,000	1/20/72	7.225	1/26/77	7 3/16%	503,028	500,179	5 11/16%	527,496	24,782	502,714	36,547	
Sunbeam International Finance, Notes	1976	250,000	-	8	5/4/77	100 1/4	267,625	250,312	100 3/4	260,005	8,130	251,875	19,050	
Phelps Dodge Overseas Capital, Notes	1974	1,000,000	-	7 1/2	5/15/77	87.70	897,667	955,400	100 7/8	1,036,674	28,124	1,008,750	120,330	
The Sumitomo Bank, London	7/6/76	750,000	9/11/72	7 5/8	9/15/77	7 1/2%	797,231	750,882	6 5/8%	759,089	2,167	756,902	57,094	56,140
The Sanwa Bank, London	7/6/76	950,000	9/21/72	7 5/8	9/21/77	7 1/2	1,008,584	951,118	6 5/8	960,516	1,661	958,855	71,324	73,644
							$9,118,185	$9,379,771		$9,389,112	$220,623	$9,161,289	$753,614	$142,974

MEDIUM TERM INVESTMENTS

CDs (Unless otherwise indicated)	Date of Purchase	Nominal Value	Issue Date	Stated Rate	Maturity	Yield/Price Bought at	Actual Cost	Amortized Cost	Market Yield/Price as of 9/30/76	Market Value As of 9/30/76	Accrued Int. from Purchase or Anniv. Date	Principal at Market Value	Annual Income	Income Received
First National Bank of Chicago, London	1973	$1,000,000	12/22/72	7 7/16%	11/2/77	8 3/4%	$ 991,658	$ 977,950	6 5/16	$1,069,379	$ 65,939	$1,003,440	$ 86,994	
Armco Overseas Leasing N.V. Notes	1974	1,000,000	-	10	11/28/77	98 3/4	1,019,444	994,300	.33 1/2	1,060,000	25,000	1,035,000	104,400	
Kyowa Bank Ltd., London	1975	1,000,000	12/1/75	8 3/4	12/1/77	99 1/4	992,500	992,500	7 1/8	1,090,937	77,549	1,013,388	88,952	
Saitama Bank Ltd., London	1976	1,500,000	1/30/76	8 3/8	1/30/78	99 1/4	1,488,750	1,488,750	7 5/16	1,610,211	92,225	1,517,986	164,377	
Hokkaido Takushoku Bank, Ltd.	1976	2,000,000	2/10/76	8 1/2	2/10/78	99 1/4	1,985,000	1,985,000	7 5/16	2,137,505	115,282	2,022,223	171,424	
Manufacturers Hanover Trust, London	1974	1,000,000	9/20/74	11 1/8	9/20/78	10 7/16	1,030,264	1,012,083	7 1/4	1,072,702	2,661	1,070,041	107,093	$113,104
Bank of America, London	1973	2,000,000	9/28/73	9 1/4	9/28/78	9 1/4	2,001,410	2,000,000	7 1/4	2,073,748	940	2,072,808	186,065	186,065
Yasuda Trust & Banking Co. CD	9/28/76	900,000	9/28/76	7 1/2	9/28/78	99 1/8	892,125	892,125	7 1/2	908,204	348	907,856	6,195	
Morgan Guaranty Trust Co. of New York, London	1974	2,000,000	12/31/73	9 3/32	12/31/78	9 1/32%	2,005,834	2,003,201	7 5/16	2,208,566	134,587	2,073,979	183,520	
Outokumpu Oy Note	8/9/76	1,000,000	-	7 1/2	2/1/79	96 1/8	1,000,520	1,000,520	97 1/2	985,823	10,823	975,000	50,046	
European Economic Community Notes	1976	1,500,000	-	7 1/2	12/1/79	98 1/4	1,461,874	1,461,874	98 3/4	1,530,825	49,575	1,481,250	116,950	
Mellon Bank, London	1974	1,000,000	8/1/74	8 5/8	8/1/79	10 1/32%	1,006,395	964,[illegible]	7 3/8	1,076,684	54,830	1,021,854	98,372	
Chrysler Financial Corporation, Notes	1973	500,000	-	7 1/2	1/1/80	99	495,000	456,020	95	503,019	24,019	479,000	47,773	
Asahi Chemical Industry Co. Ltd. Notes	1975	300,000	-	10 1/4	2/15/80	99	296,060	297,450	105 1/2	335,716	19,216	316,500	32,245	
Banque Francaise de Commerce Exterieur Notes	8/5/76	1,000,000	-	9 1/8	5/15/80	101 3/4	1,037,777	1,037,777	103	1,043,948	13,948	1,030,000	86,278	
Honda Motor Company, Ltd., Notes	1974/75	600,000	-	7 1/2	1/15/81	91.66	550,000	550,000	97	591,375	9,375	582,000	51,900	22,500
Electricity Council, Notes	1976	1,000,000	-	8 3/4	5/15/81	98 1/2	987,187	987,187	100 3/4	1,054,895	47,395	1,007,500	83,254	
Suntory Overseas N.V., Notes	1974/75	600,000	-	9 1/2	5/15/81	99 1/4	595,500	595,500	104	645,370	21,370	624,000	57,584	
First National Bank of Chicago, CD	9/14/76	1,000,000	9/3/76	6 1/8	9/3/81	99 1/8	993,732	993,732	8%	1,010,656	3,415	1,007,241	84,026	
							$20,832,970	$20,710,535		$22,009,357	$772,331	$21,236,586	$1,924,691	$321,667

LONG TERM STRAIGHT INVESTMENTS

	Date of Purchase	Nominal Value	Stated Rate	Maturity	Price Bought At	Adjusted Annual Yield to Maturity	Cost			Market Price As Of 9/30/76	Principal At Market Value	Accrued Interest	Annual Income	Income Received
							Principal	Accrued Interest	Total					
City of Dundee	1973	$250,000	9 1/4%	10/15/83	100	9.05%	$250,000		$250,000	100	$250,000	$ 22,161	$ 23,125	
First Pennsylvania Corp.	1975	450,000	7 5/8	11/15/84	81 1/4	10.58	365,625		365,625	88	396,000	30,022	34,312	
K-Mart Australia Prop. Finance	1973/75/76	600,000	7 3/4	12/15/84	87.62	9.84	525,750		525,750	93	558,000	1,937	46,500	$46,500
Beecham International	1974	250,000	8 1/4	2/1/86	89	9.62	222,500		222,500	94 1/2	236,250	13,694	20,625	
Queensland Alumina	1974/75	250,000	8 1/2	3/1/86	86.64	10.47	216,612		216,612	97 1/2	243,750	12,336	21,250	
Sandvik	1976	500,000	9 1/2	4/15/86	99 1/2	9.36	497,500	$1,583	499,083	102 1/4	511,250	21,770	47,500	
Province of Saskatchewan	9/27/76	500,000	8 3/4	9/1/86	100	8.57	500,000	3,159	503,159	100 1/2	502,500	3,524	43,750	
Norges Kommunalbank	1973	250,000	7 1/2	2/1/87	92.20	8.48	230,500		230,500	93 1/2	233,750	12,447	18,750	
Ralston Purina	1973	500,000	7 1/2	2/15/87	93.85	8.10	469,250		469,250	98 1/2	492,500	23,436	37,500	
Queensland Alumina	1976	420,000	8 1/4	4/1/87	89.96	9.57	377,848		377,848	94	394,800	17,228	34,650	
Legal & General Assurance Soc. Ltd.	1973/74	500,000	7 5/8	2/1/88	89 5/8	8.75	448,125		448,125	83 3/4	418,750	25,310	38,125	
RHM International Fin.	1973	500,000	8	3/1/88	99	7.96	495,125		495,125	85 3/4	428,750	23,219	40,000	
Pacific Lighting Overseas	1973	500,000	8	4/15/88	97 3/4	8.10	488,750		488,750	97 1/4	486,250	18,331	40,000	
Airlease Int'l. Finance	1973	250,000	8 3/4	10/1/88	99 1/2	8.63	248,750		248,750	96 1/2	241,250	21,813	21,875	
National Coal Board	1973	500,000	8 5/8	10/15/88	98 1/2	8.63	492,500		492,500	92 3/4	463,750	41,327	43,125	
Mitsubishi Rayon Co. Ltd.	1974	250,000	9	4/1/89	98	9.05	245,000		245,000	99	247,500	11,187	22,500	
Cadbury Schweppes	1975	250,000	7 3/4	10/15/90	68	12.30	170,000		170,000	82 3/4	206,875	10,567	19,375	
Cie des Bauxites de Guinee	1975/76	400,000	8	12/31/90	61.68	10.25	336,750	9,831	336,581	83	332,000	23,967	32,000	
Mortgage Bank of Denmark	1975	500,000	7 1/2	1/1/91	96 1/2	7.72	482,500		482,500	86	430,000	28,019	37,500	
Consolidated Foods Ov.	1976	400,000	7 1/2	1/15/91	90 1/4	8.50	361,000	6,333	367,333	95 1/2	382,000	21,249	30,000	
							$7,414,685	$20,906	$7,434,991		$7,429,925	$391,572	$652,402	$46,500

EQUITY LINKED INVESTMENTS

CONVERTIBLE BONDS

	Date of Purchase	Nominal Value	Stated Rate	Maturity	Bought At	COST Principal	COST Accrued Interest	COST Total	Market Price as of 9/30/76	Principal At Market Value	Accrued Interest	Annual Income	Income Received
Cummins Int'l. Finance	73/74/76	$230,000	5%	8/1/88	94.44	$217,225		$217,225	124	$ 285,200	$ 1,884	$11,500	$ 5,750
Eastman Kodak International	1973	150,000	4 1/2	5/15/88	150.4	225,625		225,625	108	162,000	2,531	6,750	
Firestone Overseas Fin. Corp.	1976	200,000	5	5/1/88	91	182,000		182,000	90 1/2	181,000	4,137	10,000	
Ford Int'l. Capital Corp.	1973	400,000	5	5/1/83	107	427,875		427,875	91 1/2	366,000	8,277	20,000	
General Electric Overseas	1973	150,000	4 1/4	6/15/87	104	156,000		156,000	89	133,500	1,859	6,375	
Gillette Company	1973	400,000	4 3/4	12/1/87	102 1/8	408,500		408,500	79	316,000	15,778	19,000	
Honeywell Capital N.V.	1973/74	450,000	5	2/15/93	85.55	385,000		385,000	84	378,000	2,812	22,500	11,250
Honeywell Capital N.V.	1973	100,000	6	11/15/86	106 1/4	106,250		106,250	84	84,000	5,250	6,000	
MassMutual Mortgage & Realty Investors	73/76	450,000	6 3/4	7/15/87	71.66	322,500		322,500	78	351,000	6,328	30,375	30,375
J. P. Morgan Overseas	1973	250,000	4 1/4	6/15/87	127	317,562		317,562	109 1/2	273,750	3,099	10,625	
J. C. Penney Int'l. Finance	1973/74	250,000	4 1/2	8/1/87	64	160,000		160,000	85 1/2	213,750	1,843	11,250	11,250
Rank Organization Ltd.	1973	400,000	4 1/4	2/15/93	95 1/2	382,250		382,250	48	192,000	10,625	17,000	
Warner-Lambert Co.	1973/74	450,000	4 1/2	4/1/87	88.58	398,625		398,625	90	405,000	10,069	20,250	
Xerox Corporation	1973	100,000	5	12/1/88	93 5/8	93,625		93,625	77 1/2	77,500	4,150	5,000	
Union Bank of Switzerland	1976	135,000	5	5/15/81	100	135,000	$75	135,075	108 1/4	146,137	2,531	6,750	

COMMON STOCKS

IBM	1,000 shs.	179 1/2	180,247		180,247	281 3/8	281,375	6,300	1,575
General Electric	3,435 shs.	65 1/2	224,992		224,992	54 1/8	185,919	3,844	961
			$1,173,276	$ 75	$4,323,351		$4,032,731	$81,173	$213,519	$61,361

II SUMMARY OF ALL SALES, REDEMPTIONS, MATURITIES AND PRINCIPAL PAYMENTS

	Nominal Value	Issuer	Stated Coupon	Maturity	Amortized Cost	Date of: Purchase	Date of: Sale	Price Sold At	Principal Received	Interest Received	Total Proceeds	Realized Gains or Loss
SHORT TERM INVESTMENTS	$1,500,000	Bank of America CD	5 7/8%	7/26/76	$1,529,882	5/26/76	7/26/76	-	$1,529,682	$14,640	$1,544,322	
	300,000	Citibank CD	8 1/8	8/2/76	323,484	7/6/76	8/2/76	-	323,484	1,364	324,848	
	800,000	Citibank CD	5 3/8	8/5/76	807,705	7/6/76	8/5/76	-	807,705	3,783	810,988	
	900,000	Citibank CD	5 3/8	8/5/76	900,300	5/5/76	8/5/76	-	900,000	12,362	912,362	
	1,000,000	Chase Manhattan Bank CD	8 3/8	8/18/76	1,001,932	8/27/75	8/18/76	-	1,001,932	83,213	1,085,145	
	1,000,000	Citibank CD	6 1/8	9/14/76	1,016,197	8/18/76	9/14/76	-	1,016,197	4,049	1,020,246	
	500,000	Fuji Bank CD	7 5/8	9/27/76	520,097	3/24/76	9/27/76	-	520,097	18,236	538,333	
					$6,099,797				$6,099,797	$137,447	$6,236,444	
MEDIUM TERM INVESTMENTS	1,000,000	First Nat'l Bank of Dallas CD	9 3/16	9/5/78	$ 1,089,745	4/5/76	9/7/76	7 9/16	$1,083,479	$38,282	$ 1,121,761	
	500,000	E E C Notes	7 1/2	12/1/79	491,150	4/22/76	9/7/76	98 1/4	491,250	10,000	501,250	
					$ 1,580,895				$1,574,729	$48,282	$ 1,623,011	$13,734
LONG TERM INVESTMENTS	500,000	Cie de Bauxite de Guinee	8	12/31/90	$461,175	1975/76	7/6/76	82 1/2	$ 412,500	$ 20,666	$ 433,166	$ 10,625
					$ 8,061,867				$8,086,926	$206,395	$8,292,621	$ 24,359

III RECORD OF RECEIPTS AND DISBURSEMENTS

7/7/76	Received from First National City Bank, London	$ 2,500,000
7/26/76	Check to First National City Bank, London	(1,500,000)
9/8/76	Check to First National City Bank, London	(1,500,000)
	Net disbursement	$ (500,000)

IV SUMMARY OF ALL PURCHASES

	Date of Purchase	Nominal Value	Issuer	Stated Coupon	Maturity	Yield/Price Bought At	Actual Cost	Purchased Interest	Total Cost	Yield to Maturity
SHORT TERM INVESTMENTS	7/6/76	$ 950,000	The Sanwa Bank CD	7 5/8%	9/21/77	7.5%	$1,008,584	-	$1,008,584	7.5%
	7/6/76	750,000	The Sumitomo Bank CD	7 5/8	9/15/77	7.5	797,231	-	797,231	7.5
	7/6/76	300,000	Citibank CD	8 1/8	8/2/76	5 5/8	323,484	-	323,484	5 5/8
	7/6/76	800,000	Citibank CD	5 3/8	8/5/76	5 5/8	807,205	-	807,205	5 5/8
	8/18/76	1,000,000	Citibank CD	6 1/8	9/14/76	5 5/16%	1,016,197	-	1,016,197	5 5/16
							$3,952,701		$3,952,701	
MEDIUM TERM INVESTMENTS	8/5/76	1,000,000	B F C E Notes	9 1/8	5/15/80	101 3/4	1,017,500	20,277	1,037,777	8.60
	8/9/76	500,000	Outokumpo Oy Notes	7 1/2	2/1/79	96 1/8	480,625	19,583	500,208	9.00
	8/10/76	500,000	Outokumpo Oy Notes	7 1/2	2/1/79	96 1/8	480,625	19,687	500,312	9.00
	9/14/76	1,000,000	First National Bank of Chicago CD	8 1/8	9/3/81	99 1/8	991,250	2,482	993,732	8.34
	9/28/76	900,000	Yasuda Trust and Banking CD	7 1/2	9/28/78	99 1/8	892,125	-	892,125	7.83
							$3,869,125	$62,029	$3,924,154	
LONG TERM INVESTMENTS	9/27/76	500,000	Province of Saskatchewan	8 3/4	9/1/86	100	500,000	3,159	503,159	8.57
			TOTAL				$8,321,826	$65,188	$8,380,014	

__ INSURANCE LIMITED

ACCOUNTING SUMMARY

JULY 1, 1976 - SEPTEMBER 30, 1976

II. CAPITAL FLOWS

Additions	$ 2,500,000
Withdrawals	(3,000,000)
Net	$ (500,000)

III. NET INCOME

	Cash Basis	Accrual Basis
Short Term Investments	$ 280,621	$ 305,413
Medium Term Investments	399,940	491,195
Long Term Investments	64,007	153,199
Convertible & Equities	61,161	53,403
	$ 715,729	$ 913,210

IV. TRANSACTION SUMMARY

	Purchases	Sales			Net Purchases (or Sales)
		Cost	Gains (Loss)	Proceeds	
Short Term Investments	$3,952,701	$6,098,797		$6,098,797	$(2,146,096)
Medium Term Investments	3,862,125	1,560,995	$13,734	1,574,729	2,287,396
Long Term Investments	500,000	401,675	10,625	412,500	87,500
Convertibles & Equities	-	-	-	-	-
	$8,314,826	$8,061,667	$24,359	$8,086,026	$ 228,800

V. RECONCILIATION OF CASH BALANCE

Beginning Cash Balance	$ 29,399
Net Income (Cash basis)	715,729
Proceeds of Sales (Principal)	8,086,026
- Cost of Purchases	8,314,826
Net Outflow	(500,000)
Ending Cash Balance	$ 16,328

V SUMMARY OF INCOME EARNED

	+ Income Received Cash Basis (from Inventory Schedule)	+ Income Received Cash Basis (from Sales Schedule)	- Int. Purchased In Current Qtr. (from Purchase Schedule)	= Net Income Received Cash Basis	- Accrual at Beginning of Period	+ Accrual at End of Period	= Income on Accrual Basis
Short Term Investments	$142,974	$137,647	-	$280,621	$196,031	$220,823	$305,413
Medium Term Investments	323,687	48,282	62,029	309,940	681,136	772,391	401,195
Long Term Investments	46,500	20,666	3,159	64,007	302,380	391,572	153,199
Equities & Convertibles	61,161	-	-	61,161	88,931	81,173	53,403
	$574,322	$206,595	$65,188	$715,729	$1,268,478	$1,465,959	$913,210

Exhibit VII

Selection of Discretionary Fund Managers

Studies: We have found no single investment manager or investment method with exceptional performance in all market environments.

It is, therefore, necessary to set forth the philosophy of the investment organizations, their approaches to the investment of discretionary funds and the resources they bring to bear on this part of their business.

The first priority should be to identify those characteristics felt to be most important to the fund. The more information one has about managers, the better the chances are of selecting a manager that has the characteristics the fund feels are important.

The following items are important areas of inquiry by the fund in discussions with prospective investment managers.

Organization: An understanding of the business base of the organization and its parent (if any), its current status and any conflicts with the parent's business, and the nature of ownership and capital give an indication of whether the investment management organization is likely to remain structured as it presently is or whether change is likely. The important points to review with the manager may be the importance of the investment entity's profits to the whole, the nature of its client base, how potential conflicts of interest within the management organization are resolved, and what motivation for the staff the form of ownership may provide.

Staff: Staff must be sufficient to support the investment philosophy, system, research capabilities and assets under management. In conjunction with biographies, interviews may provide the basis to assess the experience, maturity and capability of key staff members and portfolio managers, make certain the fund would receive the level of attention it deserves, and determine whether the investment philosophy is accepted throughout the organization.

Assets Under Management: The relative emphasis is on the types of accounts under management at one point in time. It may be important to know whether this reflects the organization's direction for the future. The fund should compare the mix of stock, bond and cash reserve assets to the philosophy, consider the number of stock and bond accounts, and find out how these may differ from the past.

Philosophy: The fund must discern the investment organization's central philosophy and method of implementation to determine whether such organization suits the fund requirements, especially with respect to asset mix, flexibility in

the use of cash reserves, and diversification of securities and issues within a portfolio. The fund must be certain that there is sufficient staff and a defined system in order to implement the philosophy. The fund should also know whether the philosophy is new or relatively long-standing and how it may be affected by extreme market conditions.

System: For a fund to be able to have confidence in a manager, the system must be understandable. It must fit the manager's organization, philosophy and personnel. From biographies or interviews the fund should discern whether key people are performing the most important functions in the system. Along with an understanding of how the system functions should come a sense of how ideas are generated, the main sources of input and the importance of the individual portfolio manager to the process. The account load per manager should also be considered at this point.

Research: This function may not be equally important for all investment philosophies and systems, but its importance and depth should be understood.

Fees: These are very often negotiable and flexible; so the fund should inquire specifically as to fees in relation to the size of the fund and special services required.

Performance: Performance reflects the results of the past and is not a prediction for the future. The performance of most investment organizations is dependent in great measure on general market conditions and must be viewed in relation to market conditions during the specific time period covered. It is important to understand the reason for the organization's performance results in the past (staff, philosophy, style, issue selection or industry weightings, among others).

Types of Money Management Organizations -

Banks
Insurance Companies
Investment Management Firms
Internal Staff

The great bulk of monies are still managed by banks. A major portion of this money is managed in individual accounts, and the treatment of those funds is very much like that provided by independent investment management companies. The banks have also established pooled investment trusts for funds. These are vehicles that serve a variety of purposes. For small funds they provide a way of getting intensive management in a way that is not practical if they were to be individually handled. For larger funds they offer a way of providing specialized investment opportunities, either in risky securities or in specialized holdings such as short-term investments where it is desirable to get a spread of holdings rather than concentrating in a limited number of issues.

Over the years, banks have emphasized their fiduciary responsibility for the monies under their supervision, and that has been a major selling point with them.

Insurance companies have become increasingly competitive in recent years in offering investment services. The great bulk of the monies which they handle for such funds are held in their general accounts. These are portfolios largely invested in bonds and mortgages but which also include stocks, real estate and various miscellaneous investments. These are massive pools of capital, and the insurance companies are able to offer guarantees with respect to contracts they offer based on their general accounts. Some of those contracts involve one-shot guarantees on a lump-sum deposit made at a specific time, and others provide a guarantee over some period of years.

In addition, insurance companies offer a broad range of separate account investments which are very similar to the pooled trust vehicles offered by banks. They include equity investment, separate accounts, bond investment, short-term investment accounts and, in the case of a few companies, real estate accounts.

The third major category of organizations offering services to funds are investment management firms. These include independent ones and those that are affiliated with brokerage houses or other financial institutions. These organizations typically offer services in the form of managing an individual account and tying the investment management of those funds to the particular needs and circumstances of their fund clients. Some of these organizations are specialists focusing on particular types of securities.

Finally, there are some funds, generally the vary largest ones, who use internal staff for management of their assets. That is a possibility that is worth consideration if you are confident that you can hire and retain competent professionals who will be able to work with the trustees of the fund in establishing policies and procedures that will meet their particular needs.

Conclusion: It is clear that there is a very broad menu to choose from in the investment advisory field. A systematic procedure for considering the various characteristics of the different organizations in light of your particular fund's requirements, can substantially increase the likelihood that you are going to be able to satisfy your long-term investment needs.

Exhibit VIII

Exhibit VIII

LEVERAGE

As noted in Exhibit I, one of the principal reasons which motivates a borrower to incur a debt obligation is the ability it provides him, through the acquisition of fixed assets or other uses, to accelerate his rate of growth beyond that which he would otherwise be able to achieve based solely on his ability to generate capital funds internally. As also noted, all lenders are dependent on a borrower's future revenue stream for payment of both interim interest and the principal amount at maturity, either by a direct payment or from the proceeds of a second, refinancing borrowing.

For a corporate borrower, the two limitations on its borrowing capacity are its level of revenues and the amount of its equity capital in relation to its debt. A company's level of revenues is scrutinized as a measure of its ability to meet the interest and principal payments on its obligations, as well as such payments on any subsequent refinancing borrowing, and lenders generally do not make debt available unless they feel assured of an adequate margin to accommodate periodic fluctuations. Similarly, the amount of debt which a corporate borrower is able to incur is limited by the amount of its equity capital which, because of its junior nature in liquidation, provides a margin of safety to creditors under the most adverse circumstances. Importantly, this latter debt constraint assumes that the borrower's revenue stream will cease if and when his other activities cease.

A municipal or local government borrower, unlike a corporate entity, has no equity, but also has a perpetual revenue stream as a result of its power to tax. The constraints on a municipal or local government borrower's debt capacity are thus derived from the extent of the property or income base over which its taxing power extends, with limits being set in recognition for the need for a reserve in the event of an economic reversal that would adversely effect the revenue stream.

As the Permanent Fund, because of its status and of the substantial size and guaranteed nature of its future resources, will be able to issue tax exempt securities bearing the highest credit ratings, it will have access to a large number of attractive leveraging opportunities. Highly rated tax exempt bonds can normally be sold at an extremely advantageous interest cost to the borrower, principally because of the exempt nature of their interest payments.

As discussed in Exhibit IV, the proceeds of a tax exempt security may only be used for certain specified exempt purposes such as public and municipal development projects. As a result, if the Fund were to borrow on a tax exempt basis, it would have to invest the proceeds in qualifying projects and would not, for example, be permitted to invest these funds in corporate securities of any type, whether publicly issued or privately placed. If the Fund wished to borrow to invest in corporate securities, it would have to do so on a taxable basis and, consequently, at a higher interest cost. While we believe that the presence of both taxable and non-taxable debt in the Fund's liability structure would not have an adverse impact on an investor's perception of its credit quality, any taxable financing because of its higher cost would act to slightly reduce the amount of cash available for investment by the Fund. Because of these factors, the Fund may wish to consider utilizing its own borrowing capacity to support public development projects

and to allocate its revenues towards private sector investments. Through the commitment of its resources and financing capacity via investments and guarantees supporting private sector activities, the Fund could, however, permit specific projects to achieve a higher degree of leverage than would otherwise be possible.

As to the form of financing which the Fund might undertake, we do not believe that there is any necessity at this time to contemplate issues other than unsecured senior debentures. Because of the size of the Fund's ultimate equity base, it should not require supplemental subordinated debt and, similarly, should attempt to achieve the longest maturities possible on its borrowings consistent with the objective of interest cost minimization. To the greatest degree practicable, investments made from such borrowings should match the maturities of the Fund's liabilities.

As noted above, through its investment and guarantee policies, the Fund could transfer a portion of its debt capacity to private sector activities. By purchasing equity (preferred or common) securities in a private venture, the Fund would be aiding the entity in the establishment of its capital base and would permit it to raise a larger amount of debt from other non-public sources on more attractive terms than might otherwise be available. Similarly, if the Fund were to purchase long term subordinated debt issues of a private sector project as part of a total financing package, it would be contributing near equity and would thus also encourage the participation of non-public lenders in the senior financing of the project. A similar effect could be achieved if the Fund were to act as the major participant in a syndicated loan to a private borrower or to agree to provide the permanent, long term financing for a private development project. Such a transaction could also be effected if the Fund were to sell participations in its private sector loans to other non-public investors with recourse to itself in the event of default. In effect, the latter type of transaction would represent an indirect form of leverage by the Fund.

The Fund will not, however, be able to leverage itself, either directly or indirectly beyond its capacity to comfortably service its debts (and to provide for future contingencies) and to offer its creditors an adequate margin of safety based on the type of its investments. Although it is impossible to determine exactly how much leverage the Fund will be permitted or will ultimately employ, the quality of its assets will have an important effect on its maximum level of debt. A sound asset base will support a higher level of debt than a pool of speculative or imprudent investments.

Exhibit IX

Exhibit IX

GUARANTEES

A guarantee is a contractural commitment to assume another's obligations if, for certain reasons, he is unable to meet them himself. Guarantees of financial obligations may be of two types, either a guarantee of performance - where the guarantor has the option of either assuming the debtor's obligations and keeping them outstanding or paying the amount due immediately upon default - or a guarantee of payment - where the guarantor must pay the full amount to the guaranteed party on default. Of the two types of guarantee, a guarantee of payment is the most acceptable to lenders and is most widely used. A guarantee may also be a guarantee of interest, principal or both and either full or partial with the value of a partial guarantee being dependent upon the amount of the guarantee in relation to the total obligation.

A guarantee of a debt obligation substitutes the credit of the guarantor for the credit of the borrower. Because a guarantee provides a lender with protection against loss in the event of default, lenders are generally willing to purchase guaranteed obligations on more attractive terms than non-guaranteed obligations. In the case of certain borrowers of weak credit standing, lenders will not purchase their obligations without a guarantee. A guarantee is of no value, however, if the guarantor is not of sufficient credit standing to easily assume the guaranteed obligation. To compensate for a weak guarantor, guarantees are often secured by assets of the guarantor. Due to the potential liability, guarantors also frequently charge a borrower a fee for issuing a guarantee.

Because of the likely future size of the Fund and its financial strength, its guarantee would be most highly regarded, in our opinion, by other lenders and, if given, would enable a borrower to more easily attract debt and to achieve finer terms on its issues. In certain cases, the Fund's guarantee might enable a borrower unable to obtain credit on its own to secure financing.

From the standpoint of a lender to a guarantor, however, a guarantee constitutes a contingent claim on the guarantor's assets which if called upon might inhibit the payment of his direct obligation. As a result, an entity cannot guarantee obligations indiscriminately without limiting its own debt capacity. Similarly, excessive issuance of guarantees by a guarantor will, over time, reduce their value to third parties. A guarantor has a fiduciary responsibility to maintain the value of its guarantees.

Exhibit X

Exhibit X

CREDIT RATINGS

A credit rating on a debt issue represents an evaluation of the borrower's ability to repay its obligation as agreed and, as such, is an indication of the quality of the particular security as an investment vehicle. The two principal agencies which provide credit ratings are Moody's Investors Service Inc. and Standard & Poor's Corporation. Each of these agencies has its own system of credit quality classifications covering both the highest quality and the most speculative debt issues. A description of these agencies' individual ratings and their intended interpretation for both corporate and municipal securities is contained in this Exhibit.

A credit rating is dependent upon many factors, both objective and subjective, but principal among these are an issuer's size, its level of debt in relation to its capital structure and its level of income in relation to the magnitude of its interest payment obligations. In general, the larger the issuer, the lower an issuer's level of debt and the higher an issuer's level of income in relation to interest expense, the higher the credit rating will be on its debt securities. Importantly, a credit rating does not apply to all the debt securities of an issuer or to its ability to pay its debts in general but only to a single, specific debt issue for which a rating has been requested. As a result, a rating is also dependent upon the terms of the particular issue and to its status in the issuer's capital structure. A secured or guaranteed obligation may, for example, be rated higher than an unsecured obligation of the same issuer and subordinated securities are normally rated one category lower than senior securities. A study of certain of the financial statistics which we believe are important determinants of the various credit ratings is also contained in this Exhibit.

A credit rating greatly assists investors in their evaluation of the credit of an issuer and, in some cases, forms an important part of a buyer's independent analysis of a security's investment merits. Credit ratings also provide an effective determinant of the quality of the assets in an investment portfolio and are frequently used as portfolio management tools, with highly rated issues being especially sought after. As a result, issues with higher credit ratings commonly are able to command finer terms than lesser rated issues. This importance of ratings in the issuance of debt securities requires issuers to be continually cognizant of the likely impact of internal decisions on future financing needs.

Description of Bond Ratings

Standard & Poor's Corporation

AAA

Bonds rated AAA are highest grade obligations. They possess the ultimate degree of protection as to principal and interest. Marketwise they move with interest rates, and hence provide the maximum safety on all counts.

AA

Bonds rated AA also qualify as high grade obligations, and in the majority of instances differ from AAA issues only in small degree. Here, too, prices move with the long term money market.

A

Bonds rated A are regarded as upper medium grade. They have considerable investment strength but are not entirely free from adverse effects of changes in economic and trade conditions. Interest and principal are regarded as safe. They predominantly reflect money rates in their market behavior, but to some extent, also economic conditions.

BBB

The BBB, or medium grade category is borderline between definitely sound obligations and those where the speculative element begins to predominate. These bonds have adequate asset coverage and normally are protected by satisfactory earnings. Their susceptibility to changing conditions, particularly to depressions, necessitates constant watching. Marketwise, the bonds are more responsive to business and trade conditions than to interest rates. This group is the lowest which qualifies for commercial bank investment.

BB

Bonds given a BB rating are regarded as lower medium grade. They have only minor investment characteristics. In the case of utilities, interest is earned consistently but by narrow margins. In the case of other types of obligors, charges are earned on average by a fair margin, but in poor periods deficit operations are possible.

B

Bonds rated as low as B are speculative. Payment of interest cannot be assured under difficult economic conditions.

CCC-CC

Bonds rated CCC and CC are outright speculations, with the lower rating denoting the more speculative. Interest is paid, but continuation is questionable in periods of poor trade conditions. In the case of CC ratings the bonds may be on an income basis and the payment may be small.

C

The rating of C is reserved for income bonds on which no interest is being paid.

DDD-D

All bonds rated DDD, DD and D are in default, with the rating indicating the relative salvage value.

Description of Bond Ratings

Moody's Investor Service

Aaa

Bonds which are rated Aaa are judged to be of the best quality. They carry the smallest degree of investment risk and are generally referred to as "gilt edge." Interest payments are protected by a large or by an exceptionally stable margin and principal is secure. While the various protective elements are likely to change, such changes as can be visualized are most unlikely to impair the fundamentally strong position of such issues.

Aa

Bonds which are rated Aa are judged to be of high quality by all standards. Together with the Aaa group they comprise what are generally known as high grade bonds. They are rated lower than the best bonds because margins of protection may not be as large as in Aaa securities or fluctuation of protective elements may be of greater amplitude or there may be other elements present which make the long term risks appear somewhat larger than in Aaa securities.

A

Bonds which are rated A possess many favorable investment attributes and are to be considered as upper medium grade obligations. Factors giving security to principal and interest are considered adequate but elements may be present which suggest a susceptibility to impairment sometime in the future.

Baa

Bonds which are rated Baa are considered as medium grade obligations, i.e., they are neither highly protected nor poorly secured. Interest payments and principal security appear adequate for the present but certain protective elements may be lacking or may be characteristically unreliable over any great length of time. Such bonds lack outstanding investment characteristics and in fact have speculative characteristics as well.

Ba

Bonds which are rated Ba are judged to have speculative elements; their future cannot be considered as well assured. Often the protection of interest and principal payments may be very moderate and thereby not well safeguarded during both good and bad times over the future. Uncertainty of position characterizes bonds in this class.

B

Bonds which are rated B generally lack characteristics of the desirable investment. Assurance of interest and principal payments or of maintenance of other terms of the contract over any long period of time may be small.

Caa

Bonds which are rated Caa are of poor standing. Such issues may be in default or there may be present elements of danger with respect to principal or interest.

Ca

Bonds which are rated Ca represent obligations which are speculative in a high degree. Such issues are often in default or have other marked shortcomings.

C

Bonds which are rated C are the lowest rated class of bonds and issues so rated can be regarded as having extremely poor prospects of ever attaining any real investment standing.

1976

Industrial
Bond Rating Study

White, Weld & Co.
Incorporated

May 1976

INTRODUCTION

The Industrial Bond Rating Study shows selected financial data on companies with a senior debt rating assigned by Moody's and Standard & Poor's. The companies in the study include those who have issued debt recently and on whom there is complete historical information in the computer data base. The figures in the study are calculated from historical data and do not give effect to issuance of debt after the end of the 1975 fiscal year which, in some cases, could result in a change of a company's rating. The bond ratings are those shown in the May 1976 bond guides published by Moody's and Standard & Poor's and the new issues included in the study are those sold to the public through May 1976. The study is only intended as a general guide to the financial qualifications for a particular rating since other factors such as characteristics of the industry and the qualities of management are also important.

The format of the study has been modified slightly to include pre-tax interest coverage for 1972 in order to give a longer history of coverage figures.

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The foregoing has been prepared solely for informative purposes and is not a solicitation, or an offer, to buy or sell any security. It does not purport to be a complete description of the securities, markets or developments referred to in the material. All expressions of opinion are subject to change without notice. The information is obtained from sources which we consider reliable but we have not independently verified such information and we do not guarantee that it is accurate or complete. We, or our officers and directors, may from time to time have a long or short position in the securities mentioned and may sell or buy such securities.

CHANGES TO BOND RATING STUDY SINCE PREVIOUS EDITION OF OCTOBER 1975

ADDITIONS

Company	Rating	Company	Rating
Eltra Corporation	Aa-AA	Hospital Corp. of America	A-A
Time Inc.	Aa-AA	Hudson Bay Mining & Smelting Co.	A-A
Texasgulf Inc.	A-AA	International Minerals & Chemicals	A-A
AIRCO Inc.	A-A	Stanley Works	A-A
Big Three Industries Inc.	A-A	Transamerica Corp.	A-A
Cyprus Mines Corp.	A-A	Browning Ferris	Baa-BBB
Greyhound Corporation	A-A		

DELETIONS

Company	Rating	Explanation
Singer	Baa-BBB	Downgraded to Ba-BB
Victor Comptometer	Baa-BBB	Downgraded to Ba-BB
White Motor	Baa-BBB	Downgraded to Ba-BB

UPGRADINGS

Company	Previous Rating	New Rating	Comment on Financial Record
Beatrice Foods	Aaa-AA	Aaa-AAA	Strong Ratios
Sterling Drug	Aa-AA	Aa-AAA	Strong Ratios
International Paper	A-AA	Aa-AA	Strong Ratios
U.S. Steel	Aa-A	Aa-AA	Strong Ratios
Union Camp	A-A	A-AA	Strong Ratios

DOWNGRADINGS

Company	Previous Rating	New Rating	Comment on Financial Record
Cummins Engine	A-A	A-BBB+	Declining coverage, incr. debt.
Federal Mogul	A-A	Baa-A	Declining coverage.
International Harvester	A-A	A-BBB	Low cov., incr. short-term debt.
Chrysler Corporation	Baa-A	Baa-BBB	Declining cov., incr. short-term debt.
A.O. Smith	Baa-A	Baa-BBB	Declining coverage.

EXPLANATION OF HEADINGS ON BOND RATING STUDY

Column	Heading	Explanation
1	1975 EBIT	Earnings before all interest charges and income taxes for 1975 before extraordinary gains or losses.
2	1975 EBIT % Assets	Earnings before all interest charges and income taxes in 1975 as a percent of 1975 assets including all intangible assets.
3	5-Year Growth Sales	Compound annual growth in sales during the past five years.
4	1975 Cash Flow % Debt	Net income plus depreciation and deferred tax items as a percent of total short and long-term debt in 1975.
5, 6, 7, 8	Pretax Interest Coverage 1972, 1973, 1974 and 1975	Pretax coverage of total interest charges in 1972, 1973, 1974 and 1975.
9	1975 Total Capital	Total capitalization in 1975 (including short-term debt and minority interest but excluding deferred taxes).
10	Short-Term Debt as a % of Total 1972 Capital	Short-term debt including current maturities of long-term debt as a percent of total 1972 capitalization (including short-term debt and minority interest but excluding deferred taxes).

Column	Heading	Explanation
11	Short-Term Debt as a % of Total 1975 Capital	Short-term debt including current maturities of long-term debt as a percent of total 1975 capitalization (including short-term debt and minority interest but excluding deferred taxes).
12	Long-Term Debt as a % of Total 1972 Capital	Long-term debt as a percent of total 1972 capitalization (including short-term debt and minority interest but excluding deferred taxes).
13	Long-Term Debt as a % of Total 1975 Capital	Long-term debt as a percent of total 1975 capitalization (including short-term debt and minority interest but excluding deferred taxes).
14	Total Debt as a % of Total 1972 Capital	Total debt as a percent of total 1972 capitalization (including short-term debt and minority interest but excluding deferred taxes).
15	Total Debt as a % of Total 1975 Capital	Total debt as a percent of total 1975 capitalization (including short-term debt and minority interest but excluding deferred taxes).

WHITE, WELD & CO. INCORPORATED
BOND RATING SURVEY
SUMMARY STATISTICS

RATING GROUP	1975 EBIT	1975 EBIT% ASSET	5 YR SALES GROW	1975 CASH FLOW %DEBT	PRE-TAX INTEREST COVERAGE 1972	1973	1974	1975	1975 TOTAL CAPITAL	****DEBT AS % OF TOTAL CAPITALIZATION**** SHORT DEBT 1972	1975	LONG DEBT 1972	1975	TOTAL DEBT 1972	1975
	Earnings before interest and taxes														
AAA - AAA															
AVERAGE	1861	17.7	18	82	26.0	21.9	18.7	14.9	7117	5.5	5.0	14.7	17.9	20.2	22.9
MAXIMUM	10232	31.2	32	134	80.6	58.3	40.2	38.1	22784	28.0	11.1	25.7	23.4	40.1	28.9
MINIMUM	193	4.9	9	39	6.8	5.4	3.0	2.3	501	0.8	0.7	3.0	8.1	6.1	13.4
AA - AAA															
AVERAGE	243	19.6	11	110	40.3	35.7	14.3	19.1	938	5.7	8.9	11.1	6.9	16.8	15.9
MAXIMUM	330	21.3	12	112	91.9	33.6	26.2	19.5	1280	12.0	10.7	18.2	9.5	30.2	16.7
MINIMUM	157	17.9	10	108	10.3	10.2	6.5	18.6	595	2.1	7.2	3.0	4.3	6.0	15.0
AA - AA															
AVERAGE	320	14.4	15	63	12.8	12.6	12.2	9.8	1667	4.5	4.9	21.1	24.4	25.5	29.3
MAXIMUM	1096	24.4	32	174	37.8	41.1	43.9	37.8	5715	14.9	21.9	40.7	44.4	41.3	49.0
MINIMUM	41	3.9	8	26	4.5	4.6	4.0	2.8	248	0.0	0.0	0.5	7.9	7.1	10.0
AA - A															
AVERAGE	446	15.9	13	80	7.9	8.5	8.8	16.1	2335	6.2	4.8	25.9	24.1	32.1	28.9
MAXIMUM	1244	27.6	21	180	15.9	22.9	16.2	65.3	6417	18.6	15.7	39.5	35.5	50.6	43.4
MINIMUM	82	10.1	10	25	2.3	5.4	4.4	4.4	226	0.2	0.1	15.7	7.0	18.5	13.3
A - AA															
AVERAGE	261	13.9	13	52	9.0	9.1	9.2	8.0	1410	5.1	5.3	23.2	26.3	28.3	31.6
MAXIMUM	372	26.5	23	92	19.3	20.2	25.5	23.2	3505	10.3	20.5	37.5	55.6	38.5	58.3
MINIMUM	59	7.2	6	13	4.2	4.4	2.6	2.5	331	0.0	0.0	8.2	15.2	14.3	17.8
A - A															
AVERAGE	132	12.3	13	48	10.0	9.6	7.6	7.0	926	4.6	4.1	26.3	29.3	30.9	33.4
MAXIMUM	1074	30.3	56	186	69.0	62.6	33.0	42.6	7600	27.4	22.3	55.7	65.5	62.9	67.6
MINIMUM	-3	-0.1	-7	2	-1.2	2.2	1.3	-0.1	120	0.0	0.0	0.0	8.1	0.0	9.5
A - BBB															
AVERAGE	83	11.2	10	41	6.6	6.9	6.4	5.9	658	5.3	4.3	25.2	28.6	30.5	32.9
MAXIMUM	324	17.9	18	95	19.2	17.7	14.0	14.0	2887	21.6	17.5	34.6	46.0	43.5	59.0
MINIMUM	5	5.6	4	13	1.9	2.9	2.6	1.9	25	0.0	0.2	9.9	12.5	17.0	12.7
BAA - A															
AVERAGE	67	7.4	10	26	7.0	5.4	4.1	2.8	632	6.8	7.4	31.0	31.5	37.8	39.0
MAXIMUM	259	13.7	18	43	19.8	9.2	6.6	4.9	1911	21.3	18.5	49.6	37.2	57.7	42.9
MINIMUM	-14	-3.3	-9	-9	2.7	2.8	2.9	-1.3	193	0.5	3.3	20.6	25.7	23.6	34.4
BAA - BBB															
AVERAGE	71	9.5	12	33	4.9	5.4	4.4	3.9	665	9.6	8.4	33.3	33.0	41.9	41.3
MAXIMUM	379	23.7	50	109	11.4	15.0	12.5	10.9	3926	37.2	35.9	53.7	62.8	61.3	71.4
MINIMUM	1	0.3	0	-5	1.0	1.6	0.2	0.1	107	0.4	0.2	19.5	11.4	26.2	13.3

WHITE, WELD & CO. INCORPORATED
BOND RATING SURVEY

MOODY'S-STANDARD & POOR'S
AAA - AAA

COMPANY NAME	1975 EBIT	1975 EBIT% ASSET	5 YR SALES GROW	1975 CASH FLOW %DEBT	PRE-TAX INTEREST COVERAGE 1972	1973	1974	1975	1975 TOTAL CAPITAL	****DEBT AS % OF TOTAL CAPITALIZATION*** SHORT DEBT 1972	1975	LONG DEBT 1972	1975	TOTAL DEBT 1972	1975
BEATRICE FOODS	NA	NA	NA	NA	13.5	12.8	10.3	NA	NA	1.5	NA	19.6	NA	21.1	NA
CARNATION CO	193	19.2	15	59	14.2	15.4	13.2	11.0	779	5.6	6.3	17.8	20.5	23.5	26.8
DUPONT E.I.	575	8.9	15	63	38.2	39.2	11.8	4.5	5347	2.6	10.1	6.7	16.6	9.3	26.7
EXXON	10232	31.2	22	97	15.3	21.9	29.6	22.7	22784	7.0	7.0	15.8	15.1	22.8	22.2
FORD MOTOR CO	680	4.9	10	39	13.3	10.2	3.0	2.3	8843	5.3	9.2	13.3	17.3	18.6	26.5
GEN ELECTRIC CO	1108	11.3	9	60	9.4	8.9	6.5	6.6	5841	9.7	11.1	21.0	17.8	30.7	28.9
GEN MOTORS	2655	12.3	14	106	57.3	44.0	11.3	9.1	15113	2.1	5.3	6.2	8.1	8.4	13.4
GULF OIL CORP	2826	22.7	21	107	9.6	17.1	32.5	24.8	8322	2.3	2.6	25.0	15.5	27.3	18.2
KELLOGG COMPANY	208	30.6	15	134	79.7	38.8	33.7	38.1	501	3.1	2.9	3.0	16.6	6.1	19.5
KRAFTCO CORP	300	18.0	12	72	24.4	12.7	5.5	9.4	1215	5.5	4.8	14.0	17.7	19.5	22.5
MERCK & CO	398	25.3	15	96	80.6	58.3	40.2	18.7	1263	4.6	6.2	3.9	17.4	8.5	23.6
MOBIL OIL CORP	3389	22.5	23	67	17.1	22.1	26.1	15.7	9197	7.2	5.4	16.0	19.9	23.2	25.4
PROCTER & GAMBLE CO	660	18.1	15	76	44.4	31.9	27.8	17.0	2747	1.1	2.6	12.8	20.3	13.8	22.9
SEARS ROEBUCK	NA	NA	NA	NA	8.0	5.4	3.1	NA	NA	28.0	NA	12.1	NA	40.1	NA
SHELL OIL CO	965	13.8	18	93	6.8	8.5	16.2	13.6	5148	0.8	0.7	25.7	23.4	26.6	24.0
STAND OIL CALIF	1485	11.5	32	90	13.9	20.3	28.2	18.5	7948	3.7	1.5	15.9	16.9	19.6	18.4
STAND OIL INDIANA	2093	21.3	22	92	8.4	10.9	16.3	16.0	7405	1.4	1.5	21.5	23.1	22.9	24.6
TEXACO, INC	1997	11.6	31	66	14.4	15.2	21.4	10.8	11416	7.9	3.4	14.5	19.6	22.4	22.9
AVERAGE	1861	17.7	18	82	26.0	21.9	18.7	14.9	7117	5.5	5.0	14.7	17.9	20.2	22.9
NO OF COMPANIES	16	16.0	16	16	18.0	18.0	18.0	16.0	16	18.0	16.0	18.0	16.0	18.0	16.0
MINIMUM	193	4.9	9	39	6.8	5.4	3.0	2.3	501	0.8	0.7	3.0	8.1	6.1	13.4
MAXIMUM	10232	31.2	32	134	80.6	58.3	40.2	38.1	22784	28.0	11.1	25.7	23.4	40.1	28.9

WHITE, WELD & CO. INCORPORATED
BOND RATING SURVEY

MOODY'S-STANDARD & POOR'S
AA - AAA

COMPANY NAME	1975 EBIT	1975 EBIT$ ASSET	5 YR SALES GROW	1975 CASH FLOW %DEBT	PRE-TAX INTEREST COVERAGE 1972	1973	1974	1975	1975 TOTAL CAPITAL	****DEBT AS % OF TOTAL CAPITALIZATION**** SHORT DEBT 1972	1975	LONG DEBT 1972	1975	TOTAL DEBT 1972	1975
FEDERATED DEPT STORE	330	17.9	12	112	18.8	13.2	10.2	19.5	1280	2.1	7.2	12.2	9.5	14.3	16.7
GENERAL FOODS	NA	NA	NA	NA	10.3	10.2	6.5	NA	NA	12.0	NA	18.2	NA	30.2	NA
STERLING DRUG	157	21.3	10	108	91.9	83.6	26.2	18.6	595	3.0	10.7	3.0	4.3	6.0	15.0
AVERAGE	243	19.6	11	110	40.3	35.7	14.3	19.1	938	5.7	8.9	11.1	6.9	16.8	15.9
NO OF COMPANIES	2	2.0	2	2	3.0	3.0	3.0	2.0	2	3.0	2.0	3.0	2.0	3.0	2.0
MINIMUM	157	17.9	10	108	10.3	10.2	6.5	18.6	595	2.1	7.2	3.0	4.3	6.0	15.0
MAXIMUM	330	21.3	12	112	91.9	83.6	26.2	19.5	1280	12.0	10.7	18.2	9.5	30.2	16.7

WHITE, WELD & CO. INCORPORATED
BOND RATING SURVEY

MOODY'S-STANDARD & POOR'S
AA - AA

COMPANY NAME	1975 EBIT	1975 EBIT% ASSET	5 YR SALES GROW	1975 CASH FLOW %DEBT	PRE-TAX INTEREST COVERAGE 1972	1973	1974	1975	1975 TOTAL CAPITAL	****DEBT AS % OF TOTAL CAPITALIZATION**** SHORT DEBT 1972	1975	LONG DEBT 1972	1975	TOTAL DEBT 1972	1975
ABBOTT LABORATORIES	132	14.3	16	31	8.6	6.0	4.2	4.4	715	7.9	12.2	21.9	30.0	29.8	42.3
AMERICAN CYANAMID CO	271	15.7	11	71	12.7	13.8	15.0	12.1	1362	1.4	2.6	20.4	20.7	21.9	23.3
ANCHOR HOCKING CORP	41	12.7	11	68	34.5	26.2	16.4	17.4	248	0.3	7.5	10.4	14.1	10.7	21.6
ANHEUSER BUSCH	188	15.6	16	46	25.3	24.9	11.3	8.3	936	0.0	0.0	17.7	36.6	17.7	36.6
ARMSTRONG CORK	77	10.6	12	48	13.0	14.1	6.4	4.6	620	2.7	1.1	14.9	22.2	17.5	23.3
ATLANTIC RICHFIELD	1019	13.8	22	48	6.0	8.2	11.9	8.3	5715	5.4	7.0	20.3	28.0	25.7	35.1
BETHLEHEM STEEL CORP	346	7.5	11	59	6.3	10.2	15.0	5.5	3493	0.5	0.7	23.0	24.5	23.5	25.2
BRISTOL MYERS CO	270	22.8	13	109	10.8	13.0	15.4	17.2	848	6.0	6.5	20.2	11.2	26.1	17.6
BURROUGHS	334	13.7	14	53	5.7	9.0	8.6	7.9	1924	7.0	21.8	31.6	10.2	38.6	32.0
CATERPILLAR TRACTOR	731	21.6	18	60	15.8	14.4	6.8	8.7	2674	2.8	2.3	20.8	31.8	23.6	34.2
CHAMPION SPARK PLUG	98	24.4	10	155	36.1	40.2	39.8	32.0	337	2.2	3.2	11.6	7.9	13.8	11.1
CBS INCORPORATED	257	21.6	10	132	19.2	22.0	26.0	32.0	748	1.2	0.6	19.0	13.2	20.2	13.8
CONSOLIDATED FOODS	124	12.0	9	52	14.5	11.7	6.7	5.5	774	1.7	1.5	22.8	23.9	24.6	25.4
CONTINENTAL OIL	1086	20.9	22	70	8.3	9.2	12.4	11.5	3389	2.1	5.4	28.0	26.7	30.1	32.1
CORNING GLASS WORKS	61	6.6	10	42	6.9	4.6	4.4	2.8	751	4.8	4.8	11.5	23.0	16.3	27.8
CPC INTERNATIONAL	256	18.2	15	55	5.8	6.6	5.9	5.8	947	11.5	11.5	22.4	18.2	33.9	29.7
DEERE & CO.	350	14.3	21	49	8.4	11.6	8.9	5.2	1738	7.1	7.0	20.6	24.3	27.7	31.4
ELTRA CORP	73	13.6	11	78	NA	NA	9.5	8.0	379	14.9	5.6	5.6	14.4	20.5	20.0
FIRESTONE TIRE & RUB	306	9.6	10	31	7.3	7.3	5.3	4.0	2493	7.3	8.0	25.9	28.8	33.3	36.9
GENERAL SIGNAL	52	14.3	23	62	33.9	17.9	7.3	8.6	264	6.6	2.3	0.5	19.3	7.1	21.5
HALLIBURTON CO.	431	20.6	32	116	13.9	9.5	19.6	15.8	1444	2.4	1.5	30.9	22.0	33.3	23.5
INCO LTD	381	12.6	10	40	4.5	9.2	13.3	6.5	2306	4.6	8.3	26.9	26.5	31.5	34.8
INTL PAPER	455	13.6	11	36	5.2	6.9	11.2	5.5	2772	1.8	4.8	33.5	41.0	35.2	45.8
JOHNS MANSVILE	89	8.2	14	29	22.9	10.7	6.5	4.7	837	8.6	8.4	7.2	22.3	15.7	30.7
KERR MC GEE	237	17.1	28	95	9.1	13.6	19.2	16.8	1066	0.9	2.6	19.1	20.3	20.0	22.9
KIMBERLY-CLARK CORP	197	15.1	11	64	7.2	9.5	9.4	8.7	1026	3.5	3.7	24.3	21.8	27.8	25.5
MONSANTO	593	17.2	13	58	6.4	11.6	14.4	10.5	2901	0.7	2.7	30.6	29.1	31.2	31.9
NABISCO	163	16.1	18	36	10.4	6.1	4.0	5.7	702	6.0	8.9	27.2	32.1	33.1	41.0
NATL STEEL CORP	93	3.9	12	35	6.1	7.8	15.6	3.1	1772	0.7	1.0	28.5	30.2	29.2	31.1
PFIZER INC.	264	13.1	14	35	11.6	8.3	7.5	5.3	1572	10.2	9.7	19.2	30.0	29.4	39.7
PHILLIPS PETROLEUM	802	17.6	18	76	4.6	6.2	15.9	16.1	3377	2.2	1.4	29.6	26.4	31.8	27.9
RICHARDSON MERRELL	96	15.4	12	39	15.3	19.0	17.5	7.8	497	6.1	8.2	9.3	21.5	15.4	29.7
SCOTT PAPER CO	125	9.7	10	38	4.7	7.0	7.1	4.7	1025	2.9	0.4	23.0	34.4	25.9	34.7
G.D. SEARLE	119	13.3	29	26	10.5	8.1	5.7	4.6	782	14.7	4.7	19.1	44.4	33.8	49.0
SQUIBB CORP	168	14.4	10	41	7.5	7.4	6.1	6.3	945	8.7	3.7	23.4	28.9	32.1	32.6
SUN OIL CO	653	15.1	18	91	7.0	9.3	14.2	11.6	3189	1.4	4.4	24.1	20.6	25.5	25.0
TIME INC	86	11.4	8	57	9.8	12.9	9.3	8.4	522	1.0	1.2	26.2	22.6	27.3	23.9
TIMES MIRROR	91	14.1	11	174	31.4	41.1	43.9	37.8	471	1.2	1.8	13.7	8.2	14.9	10.0
UNION CARBIDE	825	14.4	13	51	7.5	9.8	14.0	8.2	4411	4.1	4.9	29.1	29.0	33.2	33.8
UNION OIL - CALIF	530	14.0	23	82	5.5	7.3	12.4	9.0	2746	1.6	2.6	25.3	26.7	26.9	29.3
U.S. GYPSUM	58	7.7	12	49	37.8	16.3	5.4	5.7	601	7.7	3.5	3.7	18.4	11.4	21.9
WEYERHAEUSER	389	12.0	14	47	5.4	10.4	7.3	4.7	2795	0.6	2.6	40.7	33.3	41.3	35.9
XEROX CORP	821	18.4	19	65	14.7	11.7	7.8	6.0	3548	7.1	7.1	22.9	31.8	29.9	38.9
AVERAGE	320	14.4	15	63	12.8	12.6	12.2	9.8	1657	4.5	4.9	21.1	24.4	25.5	29.3
NO OF COMPANIES	43	43.0	43	43	42.0	42.0	43.0	43.0	43	43.0	43.0	43.0	43.0	43.0	43.0
MINIMUM	41	3.9	8	26	4.5	4.6	4.0	2.8	248	0.0	0.0	0.5	7.9	7.1	10.3
MAXIMUM	1086	24.4	32	174	37.8	41.1	43.9	37.8	5715	14.9	21.8	40.7	44.4	41.3	49.0

WHITE, WELD & CO. INCORPORATED
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MOODY'S-STANDARD & POOR'S
AA - A

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AMERICAN BRANDS	380	15.8	12	25	7.5	6.7	4.9	4.9	1961	10.5	15.7	26.4	27.7	35.9	43.4
BORDEN INCORPORATED	197	11.9	13	44	8.8	8.6	7.2	7.5	1208	1.5	0.5	24.9	27.8	26.4	28.2
DOW CHEMICAL	1244	21.3	21	54	2.3	5.4	4.4	8.1	4403	11.1	7.8	39.5	35.5	50.5	43.3
HEINZ H.J. CO	NA	NA	NA	NA	6.9	5.4	4.8	NA	NA	18.6	NA	19.4	NA	38.1	NA
HERSHEY FOODS	92	27.6	10	161	12.2	5.9	15.2	65.3	226	3.2	0.1	23.6	13.2	26.8	13.3
PPG INDUSTRIES	189	10.1	12	36	6.4	7.1	5.5	4.4	1455	1.6	2.4	28.2	33.3	29.7	35.7
TEXAS INSTRUMENTS	127	13.5	11	180	15.9	22.9	16.2	11.7	679	2.7	6.8	15.7	7.0	18.5	13.8
U S STEEL CORP	907	11.1	11	61	3.5	6.2	12.2	10.9	6417	0.2	0.5	29.4	23.9	29.6	24.4
AVERAGE	446	15.9	13	80	7.9	8.5	8.8	16.1	2335	6.2	4.8	25.9	24.1	32.1	28.9
NO OF COMPANIES	7	7.0	7	7	8.0	8.0	8.0	7.0	7	8.0	7.0	8.0	7.0	8.0	7.0
MINIMUM	82	10.1	10	25	2.3	5.4	4.4	4.4	226	0.2	0.1	15.7	7.0	18.5	13.3
MAXIMUM	1244	27.6	21	180	15.9	22.9	16.2	65.3	6417	18.6	15.7	39.5	35.5	50.6	43.4

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A - AA

COMPANY NAME	1975 EBIT	1975 EBIT% ASSET	5 YR SALES GROW	1975 CASH FLOW %DEBT	PRE-TAX INTEREST COVERAGE 1972	1973	1974	1975	1975 TOTAL CAPITAL	****DEBT AS % OF TOTAL CAPITALIZATION*** SHORT DEBT 1972	1975	LONG DEBT 1972	1975	TOTAL DEBT 1972	1975
BLACK & DECKER	90	14.0	21	32	19.3	20.2	7.6	4.2	540	5.1	18.0	8.2	18.5	14.3	36.5
BORG WARNER CO	102	8.5	8	47	7.5	7.1	2.9	2.8	883	4.2	2.0	17.3	18.6	21.9	20.5
CARBORUNDUM CORP	59	12.6	13	51	9.3	14.0	12.9	10.3	331	4.5	2.7	15.2	22.4	19.7	25.1
CONTINENTAL GROUP	209	10.7	9	60	6.8	6.5	6.5	6.0	1291	3.8	2.4	31.6	30.4	35.4	32.8
INLAND STEEL CO	158	8.4	12	36	6.5	8.1	11.9	5.1	1479	1.6	0.1	28.5	34.3	30.0	34.4
INGERSOLL RAND	247	14.8	17	29	12.8	9.4	6.1	5.3	1405	8.3	20.5	16.5	22.7	24.7	43.1
MARATHON OIL CO	488	24.3	23	92	11.7	13.0	25.5	23.2	1292	9.4	2.4	26.0	19.3	35.4	21.7
MAY DEPT STORES	165	11.9	11	27	5.8	5.6	4.5	5.4	969	1.0	6.4	37.5	37.8	38.5	44.2
MOTOROLA INC.	99	9.9	10	55	9.9	9.8	5.9	4.8	785	9.3	6.9	13.9	15.2	23.3	22.1
PENNEY J.C. CO. INC	458	14.2	13	83	6.0	4.7	2.6	4.3	2072	0.0	0.0	16.0	17.8	16.0	17.8
RALSTON PURINA CO	224	16.2	15	34	6.6	6.9	6.1	6.1	1132	10.3	5.1	26.7	34.7	37.0	39.8
REYNOLDS RJ INDS	872	26.5	15	86	17.2	11.2	14.5	16.0	2484	9.6	6.0	18.8	17.5	28.5	23.5
STAND OIL OHIO	309	7.3	13	13	4.2	4.4	4.0	2.5	3505	0.3	2.7	27.3	55.6	27.6	58.3
TEXASGULF	185	16.0	15	73	5.4	10.6	19.7	13.3	891	4.4	3.9	29.5	25.6	33.9	29.5
UNION CAMP CORP	169	20.5	13	65	7.7	9.9	13.8	13.8	695	1.7	1.3	35.1	28.7	36.7	29.9
WESTINGHOUSE ELEC	349	7.2	6	42	7.1	4.8	2.8	4.6	2813	7.4	4.7	22.2	21.7	29.6	26.4
AVERAGE	261	13.9	13	52	9.0	9.1	9.2	8.0	1410	5.1	5.3	23.2	26.3	28.3	31.6
NO OF COMPANIES	16	16.0	16	16	16.0	16.0	16.0	16.0	16	16.0	16.0	16.0	16.0	16.0	16.0
MINIMUM	59	7.2	6	13	4.2	4.4	2.6	2.5	331	0.0	0.0	8.2	15.2	14.3	17.8
MAXIMUM	872	26.5	23	92	19.3	20.2	25.5	23.2	3505	10.3	20.5	37.5	55.6	38.5	58.3

WHITE, WELD & CO. INCORPORATED
BOND RATING SURVEY

MOODY'S-STANDARD & POOR'S
A - A

COMPANY NAME	1975 EBIT	1975 EBIT% ASSET	5 YR SALES GROW	1975 CASH FLOW %DEBT	PRE-TAX INTEREST COVERAGE 1972	1973	1974	1975	1975 TOTAL CAPITAL	****DEBT AS % OF TOTAL CAPITALIZATION*** SHORT DEBT 1972	1975	LONG DEBT 1972	1975	TOTAL DEBT 1972	1975
AIRCO	93	13.0	12	41	3.8	3.3	5.8	8.5	528	4.9	3.5	38.3	35.5	43.3	39.0
AKZONA	23	3.5	13	24	5.8	7.5	7.6	1.7	499	2.3	2.9	29.7	33.9	32.0	36.8
ALLIED CHEMICAL CORP	230	10.3	13	46	4.2	6.2	9.2	5.7	1678	0.3	1.0	34.3	36.8	34.6	37.7
ALUMINUM CO OF AMER	142	4.2	9	16	3.4	3.7	6.1	1.7	2848	1.2	0.7	39.8	44.0	41.0	44.7
AMAX CORP.	213	8.6	3	29	5.2	4.7	6.2	4.0	1939	1.3	4.1	41.2	27.3	42.5	31.4
AMERICAN BROADCAST	48	6.9	7	15	12.8	14.6	15.0	3.9	540	0.5	1.3	28.6	36.0	29.1	37.3
AMERICAN CAN	175	9.4	9	40	5.9	7.1	8.6	5.1	1251	2.1	6.8	33.9	28.7	36.0	35.6
ASARCO INC.	38	2.5	7	17	12.3	16.4	14.6	1.7	1218	8.0	1.2	6.4	28.1	14.4	29.3
ANACONDA	-3	-0.1	2	2	3.3	5.0	5.9	-0.1	1757	1.5	4.4	28.2	26.7	29.7	31.1
ARMCO STEEL CORP	212	8.1	14	38	4.4	6.8	11.3	5.4	1954	2.8	2.4	32.6	29.9	35.4	32.2
ASHLAND OIL	277	14.1	21	53	6.7	6.9	5.8	3.2	1281	1.0	1.5	43.5	40.0	44.4	41.5
ASSOCIATED DRY GOODS	97	12.8	12	61	8.8	6.9	4.4	7.6	557	2.5	0.8	25.5	20.4	28.0	21.2
BENDIX CORPORATION	171	10.9	12	33	5.8	5.2	4.1	4.0	1133	11.0	8.0	20.5	25.2	31.5	33.2
BIG THREE INDUSTRIES	50	17.1	26	85	8.5	11.2	10.4	9.7	245	3.1	2.5	20.2	19.2	23.3	21.7
BROWN GROUP	34	9.4	12	26	15.0	9.8	5.0	4.3	292	9.7	1.0	14.4	31.5	24.1	32.5
BUCYRUS ERIE	59	12.9	19	48	33.9	22.5	9.3	8.0	305	0.4	0.0	7.5	29.6	7.9	29.6
BURLINGTON INDUS	108	6.9	1	34	4.3	6.3	6.4	3.2	1338	4.9	2.7	32.4	30.3	37.2	33.0
CARRIER CORP.	46	6.1	9	19	9.7	7.2	1.4	2.0	577	3.9	7.6	28.8	32.7	32.7	40.3
CARTER HAWLEY HALE	NA	NA	NA	NA	11.3	10.7	2.8	NA	NA	2.4	NA	28.8	NA	31.1	NA
CENTRAL SOYA	51	12.5	21	24	4.8	4.8	5.1	2.9	337	9.5	14.2	30.0	24.2	39.5	38.4
CITIES SERVICE	296	9.1	13	49	3.8	5.1	6.1	5.0	2462	1.4	2.3	27.7	31.2	29.2	33.4
CLARK EQUIPMENT	125	13.6	16	25	6.0	5.9	3.0	2.6	678	10.1	11.3	23.2	28.5	33.3	39.8
COLONIAL STORES	25	14.6	8	98	12.0	13.3	9.4	12.2	120	0.0	0.0	19.9	21.4	19.9	21.4
COMBUSTION ENGINEER	92	8.7	12	91	9.5	10.6	8.1	10.6	467	0.5	0.5	26.3	21.0	26.8	21.6
CROWN CORK & SEAL	84	15.6	15	NA	14.3	14.8	11.5	11.4	365	5.0	8.3	10.9	8.1	16.9	16.5
CROWN ZELLERBACH	161	10.6	13	35	4.8	8.5	8.3	4.6	1253	1.5	2.6	33.1	33.8	34.7	36.4
CUTLER-HAMMER INC	39	14.6	11	42	7.1	7.5	6.0	6.1	202	4.8	6.7	27.6	26.8	32.4	33.5
CYPRUS MINES CORP	53	8.8	21	56	11.1	21.7	29.6	4.9	511	4.1	0.6	7.3	22.4	11.4	23.0
DANA CORPORATION	133	16.1	11	48	12.1	13.1	10.5	8.0	650	2.6	1.7	24.9	30.4	27.6	32.1
DART INDUSTRIES	171	14.4	13	49	9.5	9.6	11.0	11.8	931	1.6	1.8	30.0	24.7	31.6	26.5
DAYTON HUDSON	NA	NA	NA	NA	4.0	3.6	3.1	NA	NA	1.4	NA	43.8	NA	45.2	NA
DENNISON MFG	23	14.4	10	64	9.0	9.2	7.7	6.3	130	3.2	1.1	20.8	23.3	24.0	24.4
DIAMOND SHAMROCK	214	18.1	15	54	4.7	6.2	8.8	8.4	900	1.2	1.2	32.1	39.3	33.3	40.6
DIGITAL EQUIPMENT	78	13.9	32	79	47.0	52.8	33.0	16.4	483	9.1	0.8	0.0	17.6	9.1	18.4
DRESSER INDUSTRIES	257	18.1	21	52	5.4	5.3	5.3	7.7	991	3.9	5.3	29.4	29.1	33.3	34.3
EATON CORP	134	10.7	9	29	11.0	8.7	6.1	3.7	992	5.1	4.8	23.7	33.8	28.8	38.6
EMERY INDUSTRIES	NA	NA	NA	NA	7.7	9.7	9.7	NA	NA	0.4	NA	22.5	NA	22.9	NA
ESMARK INC	177	12.0	9	35	6.1	6.7	7.1	6.4	1031	3.7	9.1	24.9	29.0	28.5	38.1
FLINTKOTE CO	25	5.6	4	27	5.8	5.1	3.0	2.7	357	0.6	1.4	23.7	34.0	24.3	35.4
FMC CORPORATION	190	10.3	11	41	7.6	6.7	3.9	5.0	1305	5.7	1.5	22.8	35.0	28.5	36.5
GAF CORPORATION	63	8.9	10	31	5.9	5.3	4.3	3.8	558	11.3	8.7	24.3	24.5	35.6	33.2
GARDNER DENVER	68	18.3	17	78	69.0	24.7	7.5	10.3	311	1.9	1.1	1.0	18.9	2.9	20.0
GEN MILLS INC	NA	NA	NA	NA	8.3	6.3	5.1	NA	NA	5.0	NA	31.5	NA	36.5	NA
GENERAL PORTLAND	4	1.9	5	21	6.6	14.1	3.1	0.8	173	2.7	2.1	26.9	29.4	29.6	31.5
GOODYEAR TIRE & RUBB	447	10.7	11	29	5.8	4.1	3.0	3.4	3102	11.5	11.8	28.8	28.4	40.4	40.2

WHITE, WELD & CO. INCORPORATED
BOND RATING SURVEY

MOODY'S-STANDARD & POOR'S
A - A

COMPANY NAME	1975 EBIT	1975 EBIT% ASSET	5 YR SALES GROW	1975 CASH FLOW %DEBT	PRE-TAX INTEREST COVERAGE 1972	1973	1974	1975	1975 TOTAL CAPITAL	****DEBT AS % OF TOTAL CAPITALIZATION*** SHORT DEBT 1972	1975	LONG DEBT 1972	1975	TOTAL DEBT 1972	1975
GREAT NORTH NEKOOSKA	85	12.2	13	46	5.3	7.9	12.9	7.5	574	3.1	5.0	28.9	28.9	32.0	34.0
GREYHOUND CORP	159	11.1	6	33	6.8	6.5	4.6	4.9	1073	3.6	3.6	32.1	34.8	35.7	38.4
HANNA MINING CO	70	18.3	10	186	10.4	12.4	9.9	18.4	323	0.0	0.5	10.0	9.0	10.0	9.5
HARSCO CORP.	76	21.1	14	73	15.6	15.2	10.0	12.3	289	2.5	0.4	15.0	27.6	17.5	28.0
HEUBLEIN	141	18.9	27	37	11.2	15.8	12.6	8.2	544	1.0	2.9	34.0	37.5	35.0	40.4
HONEYWELL INC	205	8.0	8	51	3.8	3.6	2.2	2.4	1873	12.1	11.1	25.1	26.1	37.2	37.3
HORMEL (GEO A)	27	12.0	7	71	28.4	8.3	7.7	8.8	159	0.0	3.7	0.0	16.3	0.0	20.1
HOSPITAL CORP AMER	59	11.7	38	16	3.0	2.7	2.6	2.7	442	7.2	2.1	55.7	65.5	62.9	67.6
IDEAL BASIC IND	50	14.1	12	63	33.1	31.1	26.9	11.7	304	1.3	1.2	6.1	22.1	7.4	23.4
HUDSON BAY MINING	48	9.4	26	50	5.9	21.9	19.5	7.2	429	0.3	4.2	15.6	20.1	15.9	24.4
INTL MINERALS & CHEM	297	27.3	21	65	2.9	3.9	7.1	13.2	772	11.9	2.4	35.1	38.3	47.0	40.7
INTL TEL & TEL	1074	10.3	12	23	4.7	4.0	3.2	3.1	7600	14.2	13.9	29.1	28.6	43.3	42.4
JOHNSON CONTROLS CO	22	10.0	10	33	18.6	12.7	3.3	7.1	127	1.1	3.6	17.3	27.4	18.4	30.9
JOY MANUFACTURING	81	10.0	15	79	9.6	7.8	6.9	3.8	318	3.3	2.8	20.2	17.2	23.5	20.1
KENNECOTT COPPER	17	0.7	-7	14	5.1	10.2	11.6	0.5	1905	3.1	2.5	17.3	21.3	20.5	23.8
KEWANEE INDS INC	59	16.5	18	48	13.0	12.4	21.8	8.3	280	1.0	2.7	15.9	31.8	16.9	34.5
LIGGETT GROUP INC	84	13.0	5	28	6.3	5.3	5.9	6.4	565	12.8	13.5	23.6	19.8	36.3	33.3
MARYLAND CUP	24	11.9	13	35	6.8	7.6	5.4	5.2	173	0.8	0.5	35.0	37.5	35.7	38.0
LUCKY STORES	99	16.8	16	59	9.9	10.2	9.9	15.6	357	1.7	1.1	35.6	35.2	37.3	36.4
MAYER OSCAR & CO	55	17.8	11	99	9.5	7.5	14.9	12.8	235	0.3	0.4	24.7	17.5	25.0	17.9
MCDERMOTT J. RAY	NA	NA	NA	NA	5.9	6.4	6.6	NA	NA	9.2	NA	31.5	NA	40.7	NA
MCDONALDS CORP.	210	19.6	37	28	12.5	10.5	6.2	5.5	881	5.9	2.6	34.5	50.4	40.4	53.0
MELVILLE CORP	80	22.1	16	185	20.1	15.4	8.9	42.6	254	0.3	0.2	19.0	11.9	19.3	12.1
MERCANTILE STORES CO	65	10.7	12	99	10.5	9.5	10.0	19.9	246	0.8	0.6	19.5	18.3	20.3	18.9
MIDLAND-ROSS CORP	46	12.9	10	49	5.7	5.6	7.8	8.6	248	3.7	2.1	26.8	24.6	30.5	26.7
MARCOR	307	8.7	11	35	3.8	4.3	4.6	6.1	2232	1.5	1.7	42.3	36.3	43.9	37.9
MORTON NORWICH	45	9.8	11	29	6.7	6.0	5.9	3.7	386	4.0	2.8	30.1	32.2	34.1	35.0
MOUNTAIN FUEL SUPPLY	28	9.3	18	21	3.2	2.7	2.4	3.3	282	10.6	6.1	42.0	44.1	52.7	50.1
MURPHY J. C.	22	9.4	7	53	6.0	5.5	4.7	6.3	158	0.1	0.0	22.5	22.0	22.6	22.0
NCR CORPORATION	184	8.4	9	27	-1.2	3.8	4.0	2.9	1634	9.6	8.3	42.5	40.6	52.0	49.5
NL INDUSTRIES	88	8.3	7	25	6.9	4.7	6.2	3.1	857	3.4	2.8	38.2	36.5	41.5	39.3
NORTH AMER PHILLIPS	67	7.6	21	40	15.4	17.7	4.9	4.0	661	0.5	1.1	16.1	22.6	16.7	23.7
NORTON CO	47	10.6	9	32	6.5	7.6	5.9	4.3	368	7.3	7.7	15.6	22.9	22.9	30.6
NORTON SIMON INC.	164	12.1	10	38	7.7	8.6	0.5	7.9	1054	1.7	2.8	37.2	28.4	38.9	31.2
OWENS-CORN FIBERGLAS	91	12.3	13	49	9.3	10.4	5.9	6.4	576	1.4	2.5	27.9	29.2	29.2	31.8
OWENS-ILLINOIS INC	182	9.3	10	30	5.1	4.9	4.7	4.2	1480	5.5	2.3	35.1	38.4	40.6	40.7
PENNWALT CORP	70	12.9	12	37	4.9	5.0	4.5	5.0	427	7.9	2.5	25.3	35.2	33.2	37.7
PEPSICO INC.	221	16.2	16	51	10.1	6.9	4.6	6.4	971	7.2	6.3	29.6	29.1	36.9	35.4
PET INC	NA	NA	NA	NA	6.2	5.3	4.8	NA	NA	4.0	NA	27.3	NA	31.3	NA
PHELPS DODGE	71	4.3	0	15	9.9	12.1	7.1	1.9	1493	0.0	5.1	19.5	35.0	19.5	40.2
PHILIP MORRIS, INC	468	14.9	21	19	7.1	5.3	4.2	4.4	2671	14.6	19.7	34.9	34.4	49.5	54.0
PILLSBURY CO	NA	NA	NA	NA	4.4	3.5	3.5	NA	NA	7.6	NA	40.1	NA	47.8	NA
PITNEY BOWES	55	13.7	11	51	4.2	5.3	5.4	7.0	268	3.1	2.7	35.6	34.6	38.7	37.3
QUAKER OATS CO.	95	12.5	18	39	9.5	7.7	4.3	3.4	588	8.9	5.0	30.7	26.9	39.6	31.9
QUAKER STATE OIL	48	22.5	19	116	16.0	13.3	13.8	16.1	161	0.5	0.8	27.0	21.4	27.5	22.2

WHITE, WELD & CO. INCORPORATED
BOND RATING SURVEY

MOODY'S-STANDARD & POOR'S
A - A

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RAYTHEON CO	133	12.9	12	132	9.1	8.9	8.4	11.9	579	7.5	4.2	18.1	15.6	25.6	19.8
RCA CORPORATION	286	7.7	8	30	5.7	5.9	3.1	2.9	2434	9.6	12.2	43.6	39.3	53.2	51.5
RELIANCE ELECTRIC CO	74	18.1	15	45	7.6	9.0	8.1	8.3	289	3.0	1.5	28.3	31.9	31.3	33.4
REPUBLIC STEEL CORP	115	5.5	11	46	3.5	6.9	15.7	4.9	1654	1.9	0.8	25.7	21.9	27.6	22.7
REXNORD INC.	57	16.3	13	37	5.7	4.6	4.4	6.5	264	6.9	3.8	29.0	23.2	35.8	31.9
ROHM & HASS	60	5.5	19	25	7.1	5.8	5.1	1.6	904	8.2	4.9	19.2	36.6	27.4	41.5
SAFEWAY STORES	291	18.5	15	172	18.6	14.3	8.8	18.7	939	0.6	3.7	17.1	11.3	17.7	15.0
SCHLITZ BREWING	75	11.3	15	31	16.6	19.0	12.9	5.2	541	0.0	0.3	20.4	39.3	20.4	39.6
SCOTT & FETZER	36	19.3	20	65	69.0	62.6	11.0	12.5	145	3.1	0.3	4.6	24.0	7.6	24.3
SHERWIN WILLIAMS CO	62	11.2	11	28	7.2	7.8	7.9	5.2	456	0.8	4.7	25.1	29.1	25.9	33.8
SPERRY RAND CORP	NA	NA	NA	NA	7.1	5.3	3.7	NA	NA	14.8	NA	21.8	NA	36.6	NA
STALEY A.E.	105	30.3	20	124	3.5	3.8	6.0	21.5	226	5.9	9.2	27.3	13.6	33.2	22.9
STAND BRANDS INC	146	15.5	14	36	6.2	6.3	5.1	5.8	690	5.5	4.9	33.0	31.2	38.6	36.1
STANLEY WORKS	43	11.5	12	39	13.8	8.3	3.8	4.5	295	6.2	3.7	19.6	27.5	25.8	31.3
STAUFFER CHEMICAL CO	179	18.6	15	55	6.5	8.0	12.0	10.7	811	3.5	1.0	30.7	32.1	34.2	33.2
SUNBEAM CORPORATION	NA	NA	NA	NA	7.1	5.8	3.1	NA	NA	9.9	NA	21.7	NA	31.6	NA
SYBRON CORP	55	12.6	11	30	7.8	6.4	5.1	4.9	334	7.8	3.0	23.0	33.0	30.8	36.0
TRW INC	233	13.8	10	40	7.3	6.2	4.8	4.8	1237	5.0	3.3	29.6	34.2	34.5	37.5
TEKTRONIX INC	NA	NA	NA	NA	43.6	32.5	10.8	NA	NA	6.6	NA	0.6	NA	7.2	NA
TENNECO INC	837	12.7	17	28	2.7	2.7	3.7	3.5	5244	7.3	9.8	46.7	43.5	54.0	53.3
TEXAS OIL & GAS	63	14.3	56	35	4.0	4.0	4.2	4.5	366	0.9	0.3	38.9	50.8	39.8	51.1
TEXTRON, INC	194	13.5	9	48	12.4	12.2	10.9	7.7	1058	0.5	5.7	27.0	23.7	27.5	29.4
TRANSAMERICA INC	239	4.9	10	10	3.0	2.2	1.3	2.0	1995	27.4	22.3	32.0	38.0	59.4	60.3
UGI CORP	19	7.7	13	21	3.2	2.8	2.6	2.4	-100	NA	NA	NA	NA	NA	NA
UNITED TECHNOLOGIES	267	9.9	11	28	7.7	9.8	9.8	7.0	1828	9.6	4.6	29.4	34.9	30.0	39.5
WESTVACO CORP	78	10.9	14	41	2.6	6.4	9.6	6.3	595	6.3	1.7	38.4	34.6	44.6	36.3
WHIRLPOOL CORP	123	16.1	4	74	16.1	19.0	4.2	11.8	576	4.8	2.9	20.9	21.8	25.6	24.7
WITCO CHEMICAL CORP	35	11.9	17	40	9.1	7.8	7.9	5.8	226	3.4	1.9	32.6	32.9	36.0	34.7
WOOLWORTH W.F.	241	11.1	13	26	4.9	4.1	2.6	3.8	1646	10.2	9.4	21.3	29.5	31.6	38.9
AVERAGE	132	12.3	13	48	10.0	9.6	7.6	7.0	926	4.6	4.1	26.3	29.3	30.9	33.4
NO OF COMPANIES	109	109.0	109	108	119.0	119.0	119.0	109.0	108	118.0	108.0	118.0	108.0	118.0	108.0
MINIMUM	-3	-0.1	-7	2	-1.2	2.2	1.3	-0.1	120	0.0	0.0	0.0	8.1	0.0	9.5
MAXIMUM	1074	30.3	56	186	69.0	62.6	33.0	42.6	7600	27.4	22.3	55.7	65.5	62.9	67.6

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MOODY'S-STANDARD & POOR'S
A - BBB

COMPANY NAME	1975 EBIT	1975 EBIT% ASSET	5 YR SALES GROW	1975 CASH FLOW %DEBT	PRE-TAX INTEREST COVERAGE 1972	1973	1974	1975	1975 TOTAL CAPITAL	****DEBT AS % OF TOTAL CAPITALIZATION*** SHORT DEBT 1972	1975	LONG DEBT 1972	1975	TOTAL DEBT 1972	1975
ALLEGHENY LUDLUM IND	61	9.5	9	32	4.3	5.2	6.4	4.4	490	10.4	6.3	32.2	28.5	42.6	34.8
AMERICAN STORES	NA	NA	NA	NA	1.8	7.1	6.9	NA	NA	1.1	NA	23.3	NA	24.3	NA
CHEMETRON	66	17.9	10	62	3.2	3.7	6.1	9.1	293	4.0	1.6	29.0	26.8	33.0	28.4
CUMMINS ENGINE	40	6.4	11	19	2.8	4.6	3.3	2.0	459	11.0	2.9	31.9	46.0	42.9	48.9
GOODRICH, B.F. CO	90	5.6	10	21	3.7	3.9	2.9	1.8	1239	7.7	4.1	32.6	35.4	40.3	39.5
GOULD INC	81	12.6	18	25	5.4	5.1	4.6	3.9	516	11.1	10.9	28.5	31.1	39.6	42.0
HARRIS INTERTYPE	36	9.8	5	51	5.1	6.0	4.8	5.5	252	5.7	3.4	26.6	23.7	32.2	27.1
INTERLAKE INC	79	16.5	14	60	5.1	6.1	13.0	8.0	362	0.6	3.0	23.0	23.7	23.6	26.7
INTL HARVESTER	324	9.2	14	13	3.3	2.9	2.6	2.2	2887	21.6	17.5	21.9	32.5	43.5	50.0
KROGER CO.	75	6.9	7	51	4.9	5.1	7.0	4.8	600	0.3	0.4	20.3	28.6	20.7	29.0
MEAD CORPORATION	101	9.3	4	32	3.5	5.2	7.7	4.5	851	0.8	1.6	34.6	36.0	35.4	37.5
NATL DIST & CHEM	144	14.1	7	NA	5.2	6.4	14.0	12.6	822	2.0	2.3	33.9	22.6	35.9	24.8
OUTBOARD MARINE CORP	51	12.9	10	40	14.5	15.1	5.1	4.5	323	0.7	5.0	19.3	24.1	20.0	29.2
STOKLEY VAN CORP.	NA	NA	NA	NA	6.4	4.7	3.3	NA	NA	0.0	NA	17.2	NA	17.2	NA
UMC INDUSTRIES	14	11.7	13	33	19.2	11.7	5.9	5.0	100	7.1	1.2	9.9	28.9	17.0	30.0
WEYENBERG SHOE MFG	5	13.8	5	96	16.9	17.7	8.1	14.0	26	0.0	0.2	18.9	12.5	18.9	12.7
AVERAGE	83	11.2	10	41	6.6	5.9	5.4	5.9	658	5.3	4.3	25.2	28.6	30.5	32.9
NO OF COMPANIES	14	14.0	14	13	16.0	16.0	16.0	14.0	14	16.0	14.0	16.0	14.0	16.0	14.0
MINIMUM	5	5.6	4	13	1.8	2.9	3.6	1.8	26	0.0	0.2	9.9	12.5	17.0	12.7
MAXIMUM	324	17.9	18	96	19.2	17.7	14.0	14.0	2887	21.6	17.5	34.6	46.0	43.5	50.0

WHITE, WELD & CO. INCORPORATED
BOND RATING SURVEY

MOODY'S-STANDARD & POOR'S
BAA - A

COMPANY NAME	1975 EBIT	1975 EBIT% ASSET	5 YR SALES GROW	1975 CASH FLOW %DEBT	PRE-TAX INTEREST COVERAGE 1972	1973	1974	1975	1975 TOTAL CAPITAL	****DEBT AS % OF TOTAL CAPITALIZATION**** SHORT DEBT 1972	1975	LONG DEBT 1972	1975	TOTAL DEBT 1972	1975
ALLIED STORES	NA	NA	NA	NA	2.7	2.8	2.9	NA	NA	8.1	NA	49.6	NA	57.7	NA
CELANESE CORP	116	5.1	13	43	3.7	5.3	6.6	3.1	1459	7.4	4.9	37.5	32.2	44.9	37.1
FEDERAL MOGUL	16	5.9	7	23	19.8	6.5	3.4	1.9	218	2.6	3.8	20.9	33.9	23.6	37.7
LONE STAR IND	42	7.6	18	27	4.9	4.7	3.5	2.8	441	2.1	3.3	35.9	36.8	38.0	40.1
NATL CAN CORP	48	11.6	16	30	4.5	4.0	4.6	4.2	299	4.1	14.7	37.8	28.1	41.9	42.9
ROCKWELL INTL.	259	9.0	15	30	7.7	9.2	4.0	3.1	1911	0.5	3.3	25.1	37.2	25.5	40.4
SCOVILLE MFG CO	32	8.3	-0	34	7.7	6.0	3.2	4.9	224	3.0	5.7	27.4	28.7	30.4	34.4
U.S. SHOE	34	13.7	9	31	8.5	5.5	3.8	4.1	190	21.3	5.5	20.6	31.6	41.9	37.0
UOP INCORPORATED	-14	-3.3	4	-8	4.0	4.8	5.2	-1.3	316	11.5	18.5	24.7	23.7	36.3	42.2
AVERAGE	67	7.4	10	26	7.0	5.4	4.1	2.8	632	6.8	7.4	31.0	31.5	37.8	39.0
NO OF COMPANIES	8	8.0	8	8	9.0	9.0	9.0	8.0	8	9.0	8.0	9.0	8.0	9.0	8.0
MINIMUM	-14	-3.3	-0	-8	2.7	2.8	2.9	-1.3	190	0.5	3.3	20.6	23.7	23.6	34.4
MAXIMUM	259	13.7	18	43	19.8	9.2	6.6	4.9	1911	21.3	18.5	49.6	37.2	57.7	42.9

WHITE, WELD & CO. INCORPORATED
BOND RATING SURVEY

MOODY'S-STANDARD & POOR'S
AAA - BBB

COMPANY NAME	1975 EBIT	1975 EBIT% ASSET	5 YR SALES GROW	1975 CASH FLOW %DEBT	PRE-TAX INTEREST COVERAGE 1972	1973	1974	1975	1975 TOTAL CAPITAL	****DEBT AS % OF TOTAL CAPITALIZATION**** SHORT DEBT 1972	1975	LONG DEBT 1972	1975	TOTAL DEBT 1972	1975
ALLIS-CHALMERS CORP	96	8.7	11	26	1.6	1.6	1.9	2.3	644	11.5	3.8	27.1	27.4	38.6	31.2
AMERADA HESS	379	15.9	24	45	3.9	12.4	8.7	6.9	1714	2.2	1.9	43.2	37.2	45.4	39.2
AMCORD INC	17	8.0	4	18	2.3	2.4	1.9	2.2	172	11.5	3.9	41.5	44.6	52.9	48.5
ARMSTRONG RUBBER CO	15	5.9	9	17	3.4	2.9	1.8	1.7	202	10.2	3.9	39.1	45.7	49.2	49.6
ARVIN INDUSTRIES INC	23	10.2	15	10	5.3	3.7	1.4	1.7	202	0.5	35.9	36.0	27.1	35.5	53.0
BAKER INTERNATIONAL	71	23.7	35	91	7.8	7.6	8.2	10.9	227	3.2	5.6	30.1	20.4	33.3	26.0
BEMIS CO.	26	8.4	9	30	5.4	4.2	4.7	3.3	243	7.7	2.1	27.4	29.6	35.2	31.6
BOEING COMPANY	127	7.1	0	109	1.4	2.5	7.7	8.7	1165	15.4	1.9	31.1	11.4	46.5	13.3
BROWNING FERRIS	37	11.1	50	34	8.2	6.3	3.5	4.9	276	5.3	3.2	27.3	44.3	32.6	47.5
CHAMPION INTL	142	7.2	12	19	5.2	4.8	3.7	2.5	1614	4.3	5.3	41.3	43.2	45.6	48.6
CHRYSLER CORP	24	0.4	11	-5	8.2	15.0	0.2	0.1	3926	8.9	11.1	21.7	27.2	30.6	38.2
CONS FREIGHTWAYS INC	39	11.5	10	71	11.4	13.0	10.4	7.1	223	9.0	6.6	30.1	23.0	39.1	29.6
CRANE CO.	130	18.0	10	41	1.9	2.7	6 1	8.2	542	5.3	4.6	53.7	44.1	59.0	48.7
FEDERAL PAPER BOARD	36	12.4	20	36	5.1	6.9	8.4	5.5	244	0.4	1.8	31.9	35.6	32.2	37.3
FERRO CORPORATION	30	14.3	16	65	9.6	11.9	12.5	6.9	160	4.9	6.1	21.8	15.1	26.7	21.2
FLEXI-VAN CORP.	15	6.2	19	25	4.4	3.5	3.0	1.5	224	6.8	3.3	41.7	56.8	48.5	60.1
FREUHAUF CORP	77	8.6	19	27	3.7	3.6	1.8	2.1	657	11.4	12.6	32.2	34.3	43.6	46.8
GLOBE-UNION INC	19	11.0	15	30	4.3	3.9	3.7	3.4	132	12.0	15.0	28.2	24.1	40.3	39.1
HART SCHAFFNER & MAR	23	7.9	6	33	7.8	7.2	4.3	3.5	233	0.4	0.4	25.7	26.2	26.2	26.7
HOOVER BALL & BRG	27	17.9	9	74	10.3	12.9	7.4	9.7	107	0.4	0.2	32.4	26.0	32.8	26.2
INTL MULTIFOODS	NA	NA	NA	NA	4.4	3.8	3.3	NA	NA	18.6	NA	23.8	NA	42.4	NA
KIDDE WALTER	105	12.3	7	25	7.3	5.9	4.1	4.5	659	3.2	6.3	30.3	32.6	33.5	38.9
LITTON INDUSTRIES	138	6.3	7	14	1.0	2.7	1.1	2.0	1650	17.1	13.6	34.4	38.2	51.5	51.7
LOWENSTEIN M.	1	0.3	4	4	2.6	2.6	2.5	0.1	295	16.5	12.4	31.2	39.7	47.7	52.1
MARTIN-MARIETTA CORP	99	8.7	2	50	4.9	4.9	7.2	5.1	895	3.5	1.5	36.1	30.4	39.7	31.9
MILES LABORATORIES	32	9.2	7	18	4.8	4.7	3.1	2.5	295	8.3	11.5	38.5	38.8	46.8	50.3
MONOGRAM INDUSTRIES	17	11.5	4	30	3.2	4.3	4.9	4.1	122	0.8	4.3	46.1	33.1	46.9	37.5
PENNZOIL	216	10.7	8	28	2.5	2.9	4.0	4.0	1591	7.4	4.3	53.0	51.3	60.4	55.5
PULLMAN INC	69	7.8	24	50	4.6	6.4	5.0	4.5	433	9.5	4.1	25.1	20.0	34.7	24.2
REICHHOLD CHEMICALS	33	14.0	18	65	4.5	5.5	11.3	8.0	178	1.7	1.8	35.2	25.3	36.9	27.1
RYDER SYSTEM	59	8.7	21	32	3.0	2.4	1.3	1.5	493	8.9	8.6	52.4	62.8	61.3	71.4
SCM CORP	62	8.8	9	26	2.3	3.5	4.6	3.1	532	3.8	5.2	40.3	40.3	44.1	45.6
SIGNAL COMPANIES INC	121	6.5	9	16	4.1	2.8	4.3	2.6	1446	6.2	9.7	32.0	28.2	38.1	37.8
SMITH A.O. CORP	10	3.1	2	23	4.4	5.2	0.5	1.2	220	4.5	0.6	27.7	29.6	32.2	30.3
UNIT MERCHANTS & MFR	27	2.5	5	-0	1.8	2.0	2.3	0.5	748	28.5	31.1	31.3	32.1	59.8	63.2
U.S. INDUSTRIES	48	5.1	2	18	6.6	4.7	1.7	1.6	707	9.1	15.4	25.5	13.0	34.6	28.5
JIM WALTER CORP	177	13.5	13	19	4.3	4.0	3.1	3.2	1051	37.2	.3	19.5	23.3	55.7	58.6
WALTER KIDDE & CO	105	12.3	7	35	7.3	5.9	4.1	4.5	659	3.2	6.3	30.3	32.6	33.5	38.9
WICKES	23	4.5	17	9	6.4	5.2	2.1	1.5	384	16.1	17.1	21.9	37.8	38.0	55.0
AVERAGE	71	9.5	12	33	4.9	5.4	4.4	3.9	665	8.6	8.4	33.3	33.0	41.9	41.3
NO OF COMPANIES	38	38.0	38	38	39.0	39.0	39.0	38.0	38	39.0	38.0	39.0	38.0	39.0	38.0
MINIMUM	1	0.3	0	-5	1.0	1.6	0.2	0.1	107	0.4	0.2	10.5	11.4	26.2	13.3
MAXIMUM	379	23.7	50	109	11.4	15.0	12.5	10.9	3926	37.2	35.9	53.7	62.8	61.3	71.4

Understanding Municipal Credit

Second Edition

White, Weld & Co.
Incorporated

Contents

Credit Analysis of State and Municipal Bonds	1
Classification of Municipal Bonds	2
General Tax Bonds of Municipalities	3
Borrowing Capacity	6
State Bonds	7
Revenue Bonds	9
The Revenue Bond Resolution	10
Feasibility Analysis	13
Debt Service Coverage	14
Special Considerations	15
Ratings	21
Note Ratings	22
Summary	23
Sources and Bibliography	24

Understanding Municipal Credit

Second Edition

by

William F. Fuller
Senior Vice President
Municipal Bond Department

and

Stevens McAleer
Manager Municipal Research

White, Weld & Co. Incorporated

June, 1976

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Credit Analysis of State and Municipal Bonds

The notion of raising money for public purposes through loans rather than taxes is ancient and widespread. Only the very richest governments have been able to finance everything they wanted—whether to build navies, buy grain, or construct canals—out of current income. So universal is the practice of supplementing tax income with loans that the creation of a national debt has been called the first step of any nation toward civilization. Corporate debt financing, by contrast, is a relatively recent development.

Loans, public as well as private, are secured by bonds. A bond is an obligation; the word originally meant "that which binds"—in the sense of fetters or shackles. In the United States, public bonds are referred to generally as "municipal bonds." Here, "municipal" is being used in its broadest sense, to mean any governmental subdivision of the nation, whether a state, city, town, or other local self-governing unit. The term "municipal bonds" also includes bonds issued by agencies or authorities of the states and their subdivisions—a state power authority, for example, or a city housing agency.

A municipal bond, then, by its very existence is at once the evidence of a public debt and the pledge to repay the loan, at a particular rate of interest and at a particular time. The pledge to repay is backed by all, or by a specified part, of the borrower's resources, future as well as present. Usually, the borrowing body pays interest annually or semi-annually to the bond holder, while the principal of the loan—the face amount of the bond—is paid at the end of a stated number of years.

Besides being an older form of finance than corporate bonds, municipal bonds have proven over the years to be safer. More serious defaults have occurred in the United States from lending public credit to private enterprise than from lending private funds to public bodies. The safety record of municipal bonds in this

country is exceeded only by that of the obligations of the Federal government itself.

Of course, the absolutely riskless investment has yet to be invented. Municipalities do default. As early as 377 B.C., 10 Greek municipalities of the Attic Maritime Association defaulted on loans from the temple at Delos. And in the United States in the 19th Century, the Smithsonian Institution almost never came into being because Congress invested James Smithson's bequest in Ohio municipal bonds that defaulted; by a one vote margin, Congress restored the money through an appropriation, enabling the Institution to open in 1847, 12 years after the bequest.

In assessing the safety of municipal bonds, the fundamental criteria are the issuer's *ability* to pay along with the willingness to pay. The first factor is measurable; dollar values can be assigned to property, tax returns can be projected. The second factor is more subjective; the analyst must make a guess about the municipality's determination to honor its debts, come what may. The combination of the two factors–ability and willingness–is more important than the particular sources of revenue that will be used to repay the loan.

Classification of Municipal Bonds

The many kinds of state and municipal bonds, fall into three major categories:

1) General Tax Bonds (General Obligations) secured by the "full faith and credit" of a state, or in the case of a municipality, usually by *ad valorem* (according to value) property taxes. (Some legal experts define "general obligation" so narrowly that only *ad valorem* tax bonds qualify; others interpret the phrase to mean any available sources of revenue not otherwise restricted.)

2) Revenue Bonds secured by, and payable solely from a specific source of revenue—for example, bridge tolls, sales taxes, or license fees.

3) "Double-Barreled" Bonds secured by a combination of taxes and other forms of revenue.

General Tax Bonds of Municipalities

Historically, local governments have depended mainly on property taxes for income. Additional revenues may be produced by sales and use taxes; licenses, and by excise, franchise, and income taxes. Federal grants, state aid, and other forms of financial assistance may also be received. However, the principal assets of a community ordinarily consist of its real property, and it is the property tax that provides the most basic, continuous source of revenue. The tax on property usually is based on its "assessed valuation" rather than its true, or market value. The assessed valuation is supposed to bear a fixed relation to true value, but there are often so many exceptions—the result of obsolete or unprofessional assessments—that the relationship may be hardly visible. Whatever the case, the community balances its budget by establishing a tax rate (in mils. or dollars per thousand) which, when multiplied by the total assessed valuation, will combine with income from other sources to produce the total revenue necessary for operations, debt service, and other expenses.

Tax rates of different communities are not directly comparable since assessed values vary from as little as 10% of estimated market value to close to 100%. Moreover, the estimates supplied by issuers are not always accurate. A better comparison is the annual tax bill as a percentage of market value, i.e., suburban home taxes averaged 4% of market value of the property in a recent survey. Commercial, industrial, private utility, and personal properties usually have different assessment ratios.

Current tax revenues are used primarily for day to day operations, including essential services such as public safety, education, and governmental administration. Capital items, such as a new school or a sewage disposal plant, which will benefit a community over an extended period of years generally are constructed from the proceeds of long-term borrowing. The theory is that if the benefits are long-term, the cost impact on the taxpayers should be spread over the useful life of the facility.

The strongest security for general obligation bonds is a pledge by the issuer to repay principal and interest by levying *ad valorem* taxes "without limit as to rate or amount" on all taxable property. Several states have constitutional or statutory limitations on the rate or amount of taxes that can be levied to pay interest on their debts. In theory, such "limited tax" bonds have less security than "unlimited tax bonds," but in practice, there is no difference for the bond holder as long as the costs of debt service remain within the legal limits of taxing ability.

In addition to considering the community's resources—i.e., its ability to pay the debts it is incurring—the prudent investor must consider the way those resources are managed.

The quality of financial management often is reflected in the year-to-year trends of revenues, expenditures, year-end balances, tax collections, and borrowing. In general, actual performance compared against budgeted figures over the most recent years is indicative of management capability. The M.F.O.A. (Municipal Finance Officers Association) has an excellent accounting and budgeting format which should be standard.

The year-end condition of the major operating funds is especially important. If current liabilities exceed cash and investments, the community must resort to short-term borrowing, either through the sale of notes or direct bank loans, to keep it going until the next round of taxes is collected. When tax years and fiscal years are not synchronized, short-term revenue anticipation borrowing is usually used to bridge the gap. If trouble is brewing, the first signs

often are spotted through analysis of the "floating debt" created by successive short-term borrowings. Too often, investors in short-term obligations have discovered to their chag.in the distinct difference between Bond Anticipation Notes (BAN'S) and Tax or Revenue Anticipation Notes (TAN'S or RAN'S). The bond anticipation note holder may not get paid if the issuer does not have access to the capital market to sell a bond issue or "roll over" the notes at maturity. The TAN or RAN holder, meanwhile, is protected as long as taxes are paid and revenue is produced.

Defaults—the failure to make payment when due—are rare on general tax bonds, and when they do occur, extenuating circumstances usually exist. Currently, the legal status of the general obligation bond holder in the event of default is murky. Most legal experts believe the courts will put the needs of public safety ahead of the municipality's obligations to bond holders. This means first call on any available revenues probably will be given to the support of police, fire protection, and sanitation rather than to the payment of bonds. Just which services are truly essential, however, may take some years for the courts to resolve as a result of the lawsuits following New York City's "moratorium" on a note payment in December 1975. Are the schools essential to public safety? What about the public hospitals? The dog catcher? The matrimonial bureau? In effect, the courts must write a definition of "public safety," deciding which services come under the umbrella.

In making a credit assessment, the proven willingness of a community to cooperate and clear past defaults is an important factor, as is the record of having kept up payments even during adverse periods. In the latter connection, the most frequently cited case is the city of Richmond, Virginia, which has an excellent credit standing because for more than a century bond dealers have recited the story of how the city managed to smuggle gold through Union lines during the Civil War to pay off bond holders.

Borrowing Capacity

How much can be borrowed is contingent upon the ability to repay. In determining an acceptable debt burden, therefore, an analyst considers such ratios as debt per capita and the percentage of debt to actual value. These ratios then may be compared to those of similar communities. Other measures of debt burden are the ratios of debt to personal income and in farming communities, debt per acre.

There are no hard and fast rules for determining an acceptable debt burden. A highly industrialized area with a small population might have extremely high debt per capita but be an acceptable credit because its debt is usually low as a percentage of market value. High per capita debt might be tolerated in a wealthy growing suburb, while the same dollar obligation would be considered unfavorable in a marginal agricultural area with a low per capita income.

In general, a diversity of revenue from a broad base is preferable to dependence on a few sources, although occasionally communities have a good credit standing with only one predominant tax payer, such as a major utility. Tax collection procedures should be designed to insure prompt payment through adequate penalties for delinquency and properly executed tax sales. Additional security may result from collection of taxes by a larger governmental unit such as a county which may remit taxes in full to the municipality and assume responsibility for delinquencies. For the average community—and for the potential bond buyer—it begins to get dangerous when the percentage of net overall debt to estimated actual value nears 10%. Of course, any "overlapping debt" of other political bodies must be included in each of the above calculations. Finally, debt structure or schedule of maturing principal should be compared with projected revenue. A good rule of thumb is that 25% of debt should be retired in 5 years and 50% in 10 years.

In addition to ratios and balance sheet statistics the appraisal of an issuer's present economy and future prospects will be influenced by the following factors:

1) Location, geographical features, climate, terrain, and adequacy of water, waste disposal and energy.

2) Family income statistics, housing values, percent of home ownership, data on occupations and educational attainment.

3) Transportation facilities, labor relations, unemployment statistics, and the financial strength of banking institutions also are often included in the economic analysis.

The current and past status of the tax base is perhaps the most important consideration in estimating ability to pay. A list of principal employers and taxpayers shows the degree of diversity and dependence on any one industry or employer. Changes in assessed or true valuations of property over several years, as well as population growth and overall tax load, may show that financial burdens are growing faster than a snap shot statement of financial condition at a particular instant.

State Bonds

The states depend very little—in many cases, not at all—on the real property taxes that constitute the main source of income of their political subdivisions. Instead states obtain revenue from other taxes, fees, and Federal aid, including taxes on gasoline, personal income, tobacco, corporations, beverages, sales, and franchises; fees for motor vehicle registrations and licenses, and Federal aid for education, highways, welfare, and revenue sharing.

State obligations also differ considerably from the bonds of municipalities in the manner of contract enforcement. If a municipality

defaults or declares debt invalid, redress may be obtained through the courts. The holder of a state bond, however, has to rely almost entirely on good faith because most states cannot be sued to compel fulfillment of obligations without their consent.

State bonds usually carry a "full faith and credit pledge." No specific revenues are pledged and bonds are payable from general funds, but each source of available income must be examined separately. States also may issue revenue bonds supported by specific sources of income without a full faith and credit pledge or they may issue combination "double-barrelled" securities.

State credits are analyzed in much the same way as municipal credits. Important factors include the economy, financial trends, administrative abilities, and debt history. A ratio commonly used in state credit analysis is income per capita and the ratio of debt service to general revenue.

States vary significantly in the scope and quality of the services they provide and, hence, in their ability to incur debt. For example, Hawaii provides roads and schools, while such services are the responsibility of local government in other states. The analyst's assessment of a state's debt burden should include "agency" or "contingent" debt if general funds may be used to service or pay it.

In recent years, there has been a significant increase in the number of theoretically self-supporting projects financed through authorities or agencies that have a "moral" but not legal backing of a state if revenues are insufficient for debt service. The main objection to this type of financing is that it is a device for creating debt without the approval of the voters—the normal check on legislative authorization of bonding. The most common procedure is to establish a reserve fund; the language usually is permissive, saying the fund "may be replenished" by legislative appropriation, but sometimes the act creating an Agency may specify that "monies will or shall be appropriated." Obviously, in creating an agency authorized to issue debt the legislature has implicitly approved the debt itself,

but generally without taking on the legal obligation to support the debt through appropriations. Although the good faith of the state is ultimately at stake, each "moral obligation" financing must be viewed in the light of its economic feasibility as well as the degree of public support and the social necessity of the project. The social aspects of an issue become of importance when additional support is needed in financial difficult periods. If there is a choice of allocation, strongly-needed public services probably will receive priority over bonds issued for a recreational facility benefiting only a small segment of the population.

Revenue Bonds

Revenue bonds, secured solely by specific sources of income, as opposed to "general obligation" tax secured bonds, may be issued by states, municipalities, dependent agencies (subject to control by a governmental unit), or independent agencies (generally established by legislative action). Revenue bonds have been used for a long time. In the 12th Century, Venice obtained loans secured against revenues from taxes on salt and minting of money.

Revenue bonds often have advantageous features not contained in general obligation securities. Charges to users of the funded services—whether in the form of highway tolls, electric bills, or apartment rentals—are collected monthly or regularly in relatively small, relatively easy-to-pay installments, and the services rendered usually are vital to the maintenance of the user's desired standard of living. Services can usually be discontinued promptly for nonpayment and rates quickly increased if overall revenues are inadequate. If the public operator fails to perform under the covenants agreed to in the bond resolution, the bond holder, in addition to the usual right of obtaining a show cause order (mandamus), usually has the right of petitioning courts for the appointment of a receiver to operate the facility.

For these reasons astute investors do not arbitrarily consider revenue bonds to be second in quality to general obligation tax bonds. There have been many instances of homeowners, corporations, and other users paying water and utility bills ahead of property taxes in severe economic periods.

The primary reasons for issuing revenue bonds are:

1) The theory that the user of a service should bear its cost.

2) Revenue bond authorizations usually do not require the approval of the electorate.

3) Constitutional provisions may prohibit general obligation bonds.

4) The issuer may be unwilling to dilute general borrowing capacity with loans for specific projects that are either self-supporting or have a limited public purpose.

Most revenue bonds are for essential services such as; water, electricity, and sewers. However, states generally issue them also for major services that benefit the general populace or for projects beyond the financing scope of municipalities, including toll roads, housing, health services, and higher education.

The Revenue Bond Resolution

The bond indenture, resolution, or ordinance, is the basic instrument outlining the security for revenue bonds: it sets forth the manner or procedure in which the trustee or other executor of monies shall apply revenue to the cost of operation and maintenance, debt service, and other obligatory payments.

Bond or trust indentures and resolutions vary in detail, but certain general procedures have been developed for handling income and expenses. In all cases, careful provision must be made to insure:

(1) rigid control in spending funds for constructing the facility; (2) strict accounting of revenues, and (3) compliance with covenants and agreements in the bond resolution.

Revenues have priorities in application for specific purposes. The order and priority of transfers of money through various accounts sometimes is referred to as the "flow of funds." The flow usually starts with income placed in a *Revenue Fund*; monies then are allocated regularly or monthly to other accounts in the following order:

1) **Operation and Maintenance Fund.** Payments are made for this account to meet day-to-day expenses, such as salaries, to keep the operation functioning continuously.

2) **Bond Service Fund.** Regular deposits are made to this fund or separate principal and interest accounts where they accumulate to insure prompt and full payment of: (a) bond interest coming due, (b) principal on bonds maturing, or (c) the amounts required to be set aside in a "sinking fund" for term bonds.

3) **Bond Reserve Fund.** A reserve equivalent to one year's maximum principal and interest charge is a preferred requirement. Although revenues may be accumulated over a period of time from earnings, funding the entire amount from the initial sale of bonds provides better protection for the bond holders.

4) **Surplus.** After required payments for operating expenses and debt service have been completed, surplus should have specific allocations such as maintenance of the facility, payments to the municipality in lieu of taxes, redemption of bonds in advance of maturity, and capital improvements. Sometimes, the surplus is used for "any lawful purpose" without detailed restrictions. Obviously bondholders have more protection if surplus is retained within the operation instead of going to support other government services.

The covenants or guarantees to the bondholders in the bond resolutions, while varying according to the nature of the operation, should include requirements for: independent audits, adequate insurance, periodic surpervision and certification of repair and maintenance, a rate adjustment requirement to meet minimum charges or coverage, restrictions on additional borrowing, financial reports to investors, protection against competing facilities, procedures in the event of default and steps required to change the indenture.

Perhaps the most important covenant for the bond buyer is the pledge to maintain rates sufficient to: (1) meet operation and maintenance charges; (2) pay annual debt service requirements; (3) provide a reasonable surplus for the improvement and extension of facilities and (4) give a margin of safety.

When projects or facilities are initially financed, consideration should be given to future financial needs, and the indenture or covenant should define carefully the amount of additional borrowing that is permissable. For the investor this is important to prevent dilution of his margin of safety. The indenture or resolution usually contains a covenant permitting additional bonds, either of equal rank or junior in lien to the outstanding bonds. "Closed end" indentures allow no parity bonds other than those necessary to complete the facility, while any additional bonds for expansion must be junior in lien. In "open end" indentures, additional bonds of equal rank are permitted; in this case, however, to prevent erosion of the safety of the original bonds, the covenant should establish safeguards or tests that require earnings to be at certain ratios to debt service before more bonds can be issued.

Sometimes, the additional bond covenant on established and fundamental service projects will require merely that net revenues for a set period (usually a minimum of one year) prior to the issuance of additional bonds be at least 120% of the maximum annual debt service requirements on all bonds, including those to be issued as well as those already outstanding. If historical earnings are combined with engineering estimates of future revenue, a greater margin of safety is usually required by investors simply because

estimates are not always right. Financing of extensions or additional facilities should be permitted only under the most carefully thought-out provisions.

Feasibility Analysis

The economic and social justification of the facilities to be financed are fundamental factors in the analysis of revenue bond resolutions. The supporting facts and figures must show clearly that revenues will be sufficient to fulfill contractual obligations with bond holders. The bond issuer should provide a feasibility presentation detailing:

1) Construction costs and completion schedule.

2) Revenues and expenses (historical and projected).

3) Economic prospects of the proposed facility's service area.

4) Charges and rates.

5) Debt service payments projected on a realistic assumed borrowing cost, along with all other anticipated expenses.

6) A comparision of expected revenues against total charges.

Analysis of construction costs must consider the probable accuracy of estimates and the qualifications of engineers. The costs of standard facilities are obviously much easier to gauge than new and untried designs. Ideally, all contracts for the facility should be based on fixed prices, or bids, and contain suitable penalties for delay or non-performance, as well as a contingency factor (normally ranging from 5% to 15% for unforeseen construction problems or changes in specifications) which is certified to be adequate by the consulting engineer. Any costs that are not fixed must be viewed critically in light of inflation and potential technical problems. For some

projects, legal clearances, such as zoning permits or approval by regulatory bodies, should be checked.

The maturity schedule of a revenue bond should provide for repayment within the economic or technologically useful life of the facility. Revenues should be shown over a sufficient period of time to indicate negative as well as positive trends. If no historical procedents exist, the reputation and competence of independent engineers and consultants making projections are critical. Rates should be compared to those of similar projects and the possible effects of competitive alternatives considered.

The size and diversification of the facility's service area—its potential "market," in other words are of prime importance. A project with but a small group of customers may be particularly vulnerable to economic fluctuations or the movement of a major industrial firm from the community, for example.

The type of service also must be considered in the context of demand, competition, and whether or not it is imposed upon the user. For instance, the law may require that all homes tie into a new sewer line, while another type of facility—a sports arena, say, or even a toll road—must attract customers on a voluntary basis.

Is the proposed service essential? If not, will it be used, and to what extent? Those are the key questions that the analyst—and the prospective bond buyer—must continually ask.

Debt Service Coverage

As interested as they are in rates of return, most bond holders are even more interested in the degree of safety or "coverage" of their securities. "Coverage" often is expressed in terms of the number of times by which earnings exceed total debt payment requirements during a stated period of time. Coverage may be shown as a percentage of average annual debt service or—more conservatively—as a percentage of the maximum debt service in any future year.

There is no set rule for determining how much coverage is necessary. A lease revenue bond with one times coverage of the lease payments may be adequately secured by an ironclad contract with substantial and strong lessees. An example of this sort would be the contract sale of power to major utilities. The pledge of payments in this case is an operating expense which has a legal priority of payment ahead of the utility's own debt. A new enterprise without any earnings record may require as much as two times coverage of debt service by anticipated revenues. Most seasoned issues of utility bonds have a minimum 1.25 times coverage. Market conditions and the nature of the revenue source influence the amount of coverage required.

In determining coverage, the analyst should not be led astray by the classification of obligations as "gross revenue" bonds. The label suggests that a much larger sum is available to protect the bonds than if they were on a "net income" basis. In theory, this may be so, but as a practical matter, the bond holder's long-lasting protection ordinarily depends upon equally long-lasting operation of the funded facility; it does the bond holder no good if not enough money is left to run the enterprise after debt payments are made out of the gross revenues. Therefore, the analyst should calculate coverage of gross revenue bonds in light of necessary operational expenses even though debt service legally has a first charge.

Special Considerations

Certain kinds of revenue bonds have special analytical considerations.

1) **Electric Power.** Revenue bonds for generation facilities require evaluation of the source and availability of fuel. Because fuel prices are increasingly difficult to project, rate schedules should have fuel adjustment clauses which can be revised quickly to meet a sudden rise in costs.

a) Hydro-electric projects have a high initial cost but operating expenses are low and much more easily projected.

b) Nuclear plants also have a high initial cost, require a long construction lead time, and present complicated environmental safeguard problems.

2) **Water.** These bonds require an analysis of availability of supply and cost. Ownership of wells or rights to rivers and reservoirs gives more independence but if supply is contractual, the duration of the contracts and their price structure must be considered.

3) **Vehicular Traffic.** Revenue bonds for highways, bridges, etc., are especially vulnerable to:

a) Potential competitive facilities whether toll or free.

b) The good faith of an agency or highway department to maintain or build approach facilities and to honor a non-competitive pledge. Traffic patterns in the future must be viewed cautiously; the possibilities of population movements and changes in forms of transportation have to be taken into account.

c) Increases in cost of fuel and government restrictions either to conserve fuel in a national emergency or to limit air pollution.

4) **Parking.** Revenue Bonds for off-street parking facilities often require additional source of revenue and above average coverage because communities tend not to force cars off the streets for violating ordinances.

5) **Higher Education.** College revenue bonds should be viewed more critically than in the past, since enrollments have leveled off in recent years. Also, some dormitories haven't produced the revenues that were expected because of the desirability of living off-campus and the inability of univer-

sities to enforce the "parietal rule" in the bond covenant that students must live on campus if space is available. Bonds secured by fees on the entire student body have a greater margin of safety. Publicly supported institutions or those private colleges with historical continuity and sizable endowments have a far greater ability to pay than small colleges with limited resources. A "general obligation" pledge, not always present, may be important if resources other than those specifically assigned to the bonds are substantial.

6) **Hospitals.** Revenue bonds in this area present unique problems for the analyst because a major portion of hospital income consists of "third party payments" from Blue Cross, Medicare, Medicaid, Workmen's Compensation, commercial insurance, etc. Reimbursements to the hospitals by third party-payers are governed by Federal, state, and contructual regulations. The calculation of fees that qualify for reimbursement not only includes debt service but also depreciation, which has an important bearing on cash flow. Other considerations in analyzing the credit of a hospital revenue bond include historical operating statistics, cost per bed, competing facilities and the general reputation of the hospital.

   It is imperative that qualified independent consultants make a feasibility study of each hospital revenue issue to determine the institution's ability to meet the requirements of the bonds. Indications of community support for a hospital are contributions for fund raising campaigns, the status of endowment funds, and the composition of the board of trustees.

7) **Industrial Development and Pollution Control.** Municipalities or specially created political bodies that issue bonds of this sort serve only as vehicles to provide tax-exemption. Analysis of bonds issued for industrial development and pollution control must focus on the credit-worthiness of

the corporation on whose behalf they are issued. Assuming the adequacy of covenants, such bonds may be treated by rating agencies as equivalent to senior unsecured debt of the corporation and assigned a similar rating. In addition to the corporation's credit, the market or liquidation value of a plant with a mortgage provision is an important factor in the event of default. Both industrial development and pollution control bonds are subject to Federal, state, and local statutes. Industrial revenue bonds are limited by the Revenue and Expenditure Control Act of 1968 to a total project cost of $5 million. Pollution control bonds are restricted to financing pollution control devices only and none of the bond proceeds may be used for revenue-producing equipment. In certain cases the bonds may be issued only with a ruling of the I.R.S. Attorneys play an important role in certification of legal requirements.

8) **Airport and Sea Port Facilities.** These revenue bonds may carry a general revenue pledge but the underlying security is often long-term leases with airlines, grain companies, etc. and the credit of the corporations involved must be assessed.

9) **Land Development.** Tax allocation, redevelopment, and other bonds that aid financing land development by private enterprise have many caveats. The financial resources and reputation of the developers, along with construction status, are just a few of the factors to be considered in determining the likelihood that the district or area in question will ever realize the projected tax base.

10) **Municipal housing.** These revenue bonds have been issued primarily to alleviate the nation's shortage of low-cost housing. State and local housing programs are a comparatively recent development, except for the New York State Housing Finance Agency established in 1960, most housing agencies were formed in the late 1960's and early 1970's. There are basically 5 types of housing programs financed by municipal bonds.

a) The "Loan-to-lenders" housing programs issue bonds to purchase notes that have collateral from lending institutions such as savings banks, S & L's, and mortgage finance companies. The lending institutions, in turn, use the proceeds from sales of their notes to make new mortgage loans.

b) "In mortgage purchase" programs, bond proceeds are used to purchase mortgage loans primarily secured by single and multi-family dwellings; this frees funds in the local mortgage market, enabling lending institutions to make new residential mortgage commitments.

c) In "direct mortgage loan programs," the housing agency originates new mortgage loans and often enters into servicing agreements whereby local lending institutions perform the bulk of the paperwork.

d) There are "development programs" in which an agency, such as the New York State Urban Development Corporation, designs as well as finances construction of new housing units. Bonds for these programs are usually secured by mortgages on new units.

e) Local Public Housing Agencies are engaged in programs for building new low-rent housing or slum clearance. Public Housing Authority Bonds or PHA's are secured by a first pledge of annual contributions payable by the United States of America, acting by and through the Housing Assistance Administration in the Department of Housing and Urban Development, pursuant to an Annual Contributions Contract. The annual contributions, together with other funds of the local public housing agency, will be sufficient to pay interest and principal on the bonds when due.

The full faith and credit of the United States is pledged to the payment of the annual contributions under the U.S. Housing Act of 1937. Because of this strong back-

ing by the United States, PHA bonds are rated triple 'A' by both Moody's and Standard & Poor's.

The basic questions for investors in determining the quality of housing bonds are:

1) Does the state have a "moral obligation" to make-up any deficiency in the debt service reserve?

2) What type of collateral is used for bonds issued for "loan-to lenders programs"? FHA insurance, VA guarantees, and private mortgage insurance are most common, but uninsured conventional loans also have been used recently as collateral.

3) What is the local mortgage delinquency history and the credit quality of eligible lending institutions?

4) In development programs, do the proposed housing projects appear economically and financially feasible?

5) Finally, is management sound and capable?

Ratings

Around the turn of the century, Barnum & Bailey's Circus dealt in municipal bonds because investors could rely on the knowledge of traveling circus men of the relative credit-worthiness of many of the nation's communities. Today, most investors place great reliance on the two major rating agencies: Moody's Investors Service and Standard & Poor's. The rating agencies have established the following bond rating categories, of which the first four groups are considered "investment grade" and the remainder classified as speculative:

MOODY's		STANDARD & POOR'S	
Aaa	– best quality	AAA	prime
Aa	– high quality	AA	prime
A	– upper medium grade	A	good grade
Baa	– medium grade	BBB	medium grade
Ba	– speculative	BB	lower medium grade
B	– lacks characteristics of desirable investment	B	low grade
Caa	– poor standing	D	defaults
Ca	– highly speculative		
C	– poor		

Both services differentiate top credits in the wide-ranged A and Baa or BBB categories with A-1 and A1 or Baa-1 and BBB+ designations. Bonds distinguished this way are candidates for upgrading to AA or A rating. In addition Standard and Poor's has a minus (-) category for A and BBB ratings to indicate declining situations.

Note Ratings

Moody's Investors Service rates short-term tax-exempt loans and notes in four categories under the classification of Moody's Investment Grade (MIG) as follows:

MIG 1 – "best quality," with protection by established cash flows or broad-based access to the market for refinancing.

MIC 2 – "high quality," with margins of ample protection.

MIG 3 – "favorable quality," with market access for refinancing; in particular, likely to be less well established.

MIG 4 – "adequate quality," carrying specific risk but having protection commonly regarded as required of an investment security.

Moody's emphasis that "factors affecting liquidity of the borrower are uppermost in importance in short-term borrowing while various factors of the first importance in (long-term) bond risk are of lesser importance in the short runs." Currently, Standard and Poor's does not rate short-term tax-exempt loans and notes.

Summary

All the usual common sense methods of investment analysis apply to municipal securities. Ability to pay depends upon a number of economic, geographic, financial, legal, and moral considerations. The best analyses probably are made by investors with personal knowledge of the local economy, but obviously no single investor can have personal acquaintance with all localities. Alternatively, the investor can rely on the services of the various rating agencies that grade the credit quality of municipal bonds and notes. In assessing long-term bonds as investments the economic outlook of the issuer is more important than present condition. Corporations, municipalities, and public service enterprises have life cycles from youth to maturity to slow decline. The ability to analyze municipal credit allows the astute investor to pick out the youthful stages of an investment. Finally, it is a truism that "every bond is triple 'A' at a price;" while some bonds might warrant a price close to zero by this measure, the relation of risk to reward must not be overlooked. Variations in credit-worthiness are seldom reflected accurately in price, and slightly greater risks may be more than offset by comparatively larger yields.

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White, Weld & Co.
Incorporated

Directory of Office

Main Office

New York City
One Liberty Plaza
91 Liberty Street
(212) 285-2000

55 Water Street
(212) 285-2000

Branch Offices

Atlanta
Trust Company of Georgia
Building
25 Pryor Street, N.E.
(404) 658-1400

Boston
100 Federal Street
(617) 482-7767

Chicago
30 West Monroe Street
(312) 346-0022

Clayton, Missouri
7777 Bonhomme Avenue
(314) 863-6400

Dallas
2100 Republic National
Bank Building
(214) 747-9461

Denver
735 Colorado National
Bank Building
(303) 893-5010

Hartford
One American Row
(203) 525-4271

Houston
1230 First City National
Bank Building
(713) 224-8363

Kansas City, Missouri
1000 Baltimore Avenue
(816) 221-7400

Los Angeles
One Wilshire Building
(213) 624-6111

Century City–
West Los Angeles
1901 Avenue of the Stars
(213) 277-8411

Minneapolis
IDS Center
80 South Eighth Street,
Suite 626
(612) 370-8900

New Canaan, Conn.
4 Cherry Street, Box 965
(203) 966-5661

New Haven
900 Chapel Street
(203) 624-9841

New York City
300 Park Avenue
(212) 751-5500

Omaha
160 Kiewit Plaza
(402) 348-0130

Philadelphia
Five Penn Center Plaza
(215) 568-7170

Providence
1812 Hospital Trust Tower
(401) 861-4000

St. Louis
20 Broadway
(314) 231-3000

San Francisco
One Bush Street
(415) 981-1077

Seattle, Washington
White-Henry-Stuart Building
1318 Fourth Avenue
(206) 623-7611

Tulsa
National Bank of Tulsa
Building
(918) 585-2721

Washington, D.C.
Suffridge Building
1775 K Street, N.W.
(202) 452-9800

Wilmington
Wilmington Trust Building
100 West 10th Street
(302) 656-7741

STATE OF ALASKA

White, Weld & Co.
Incorporated

STATE OF ALASKA

White, Weld & Co. Incorporated
October 20, 1977

STATE OF ALASKA

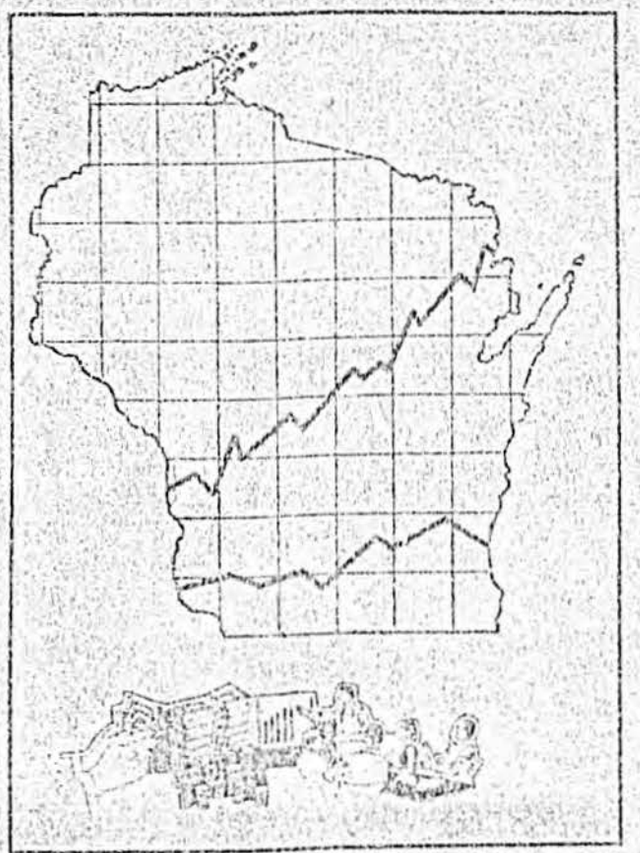
Exhibit	Topic
I	Investing State Funds: The Wisconsin Investment Board.
II	August, 1976 Report to the Legislature of the State of Minnesota by the State Board of Investment.
III	State Investment Funds: Excerpt from White, Weld & Co. Inc. Report to the State of Alaska, October 1976.
IV	Organization and Management: Tentative Organizational Structure. Excerpt from White, Weld & Co. Inc. Report to the State of Alaska, December 1976.
V	Investments - Corporate Securities. Excerpt from White, Weld & Co. Inc. Report to the State of Alaska, December 1976.
VI	Investments - Money Market Instruments. Excerpt from White, Weld & Co. Inc. Report to the State of Alaska, December 1976.
VII	Investment Counsel Association of America: Standards of Measurement and Use for Investment Performance Data.
VIII	Criteria for the Selection of Discretionary Fund Managers.
IX	Tables from Stocks, Bonds, Bills and Inflation: The Past (1926-1976) and The Future (1977-2000) by Roger G. Ibbotson and Rex A. Sinquefield.

Exhibit A

The Council of State Governments

Investing State Funds:

The Wisconsin Investment Board



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New Approaches by the States

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New Approaches by the States

INVESTING STATE FUNDS

The Wisconsin Investment Board

This report was prepared under a grant from the
National Science Foundation (Grant No. ISR75 21176).
The contents do not necessarily reflect the views of the
National Science Foundation.

August 1976
RM–583
$3.00

THE COUNCIL OF STATE GOVERNMENTS
Lexington, Kentucky

CONTENTS

	Title	Page
	FOREWORD	v
	PREFACE	vii
	EXECUTIVE SUMMARY	ix
I.	INTRODUCTION	xi
II.	INVESTMENT BOARD RESPONSIBILITIES	1
	Retirement Funds	1
	State Investment Fund	1
	Local Government Investment Funds	1
	Investing the Float	2
	State Working Bank	2
	Development of the Wisconsin Investment Program	3
	The Politics of Investing State Funds	3
III.	ORGANIZATION OF THE INVESTMENT BOARD	5
	Staffing	5
	Investment Division–Bonds	6
	Transaction Amortization Account	7
	Investment Division–Stocks	7
	Investment Division–Private Placements	8
	Investment Division–Mortgages and Real Estate	9
	Investment Division–Short-Term Investments	9
	Administrative Expenses	10
IV.	STATE/LOCAL FISCAL COOPERATION	12
	Background	12
	Provisions of the Two Local Funds	13
	How the Pooled Investment Fund Works	13
	Advantages of the Pooled Investment Fund	14
	The Investment Trust Fund	15
	Initial Results of the Pooled Investment Fund	15
	Implementing the Pooled Investment Fund in Other States	16
V.	THE STATE WORKING BANK	17
	Activities of the State Working Bank	17
	Banks and the Selection Process	18
	Utilizing the State Working Bank in Other States	20
VI.	TRANSFERRING THE WISCONSIN PROGRAM	22
	Legal Issues	22
	APPENDICES	26-31

FOREWORD

The policy, management, and operations of state government require the application of constantly updated approaches to address changing needs and priorities. This necessity for self-renewal implies innovations in the institutions of state government, in their structure, policies, procedures, and personnel.

Many innovations have occurred in recent years in a number of fields at the state level. However, too little is known about some specific state activities because of the variety of laboratories in which they occur. The innovation process is further complicated by the fact that state government officials rarely have the time or opportunity to share such knowledge which may be applicable in other States. Under day-to-day pressures and constraints, professional administrators and technical experts lack the time to write up or share new approaches that they have developed.

The Council of State Governments, which has been providing a forum for such an exchange for many years, has recently expanded its efforts in this area. The State of Wisconsin Investment Board is one of a series of six innovations being studied by the Council under a grant from the National Science Foundation. Besides this program, the others selected for evaluation during this first year include pension fund consolidation, statewide property tax assessments, a state energy management commission, controlling health costs, and a railroad branch line rehabilitation program. Reports are available on the latter four programs.

The state programs studied were selected by a national advisory panel composed of state legislators and officials. The Council is grateful to these individuals for their assistance: Senator Anthony A. Derezinski, Michigan;sSenator John Pat Fanning, West Virginia; Senator Larry Fasbender, Montana; Representative Vera Katz, Oregon; Walter Kicinski, Deputy Secretary to the Governor, New York; Jeffrey Laurenti, Executive Assistant, New Jersey Senate; Attorney General V. Frank Mendicino, Wyoming; Senator Mike O'Connor, South Dakota; Representative Cornelius O'Leary, Connecticut; Dr. Tibor Payzs, Special Assistant to the Governor, Kentucky; Joseph V. Stewart, Deputy Director, Department of Finance and Administration, Arkansas; Daniel W. Varin, Chief, Statewide Planning Programs, Rhode Island; William W. Wilkins, Budget Director, Ohio.

This report on Wisconsin's Investment Board was prepared by Dick Howard, Director of the Council's Innovations Project, and James E. Jarrett, Research Associate.

Lexington, Kentucky
August 1976

Brevard Crihfield
Executive Director
The Council of State Governments

PREFACE

Inflation, opposition to higher taxes, and taxpayer disenchantment with government generally, are having a serious impact on government financing at all levels. A recent National Association of State Budget Officers' survey showed States' general fund expenditures in fiscal years 1975 and 1976 increased at a faster rate than did general fund revenues. Surpluses built up in previous years have been rapidly depleted. In the aggregate for the 43 States that responded to the budget officers' survey, general fund balances declined from 8 percent of expenditures in 1974 to an estimated 0.3 percent in fiscal year 1976.

The problem is further exacerbated for States by federal funding reductions in some functional areas and federal program requirements for additional state dollars in other areas. All of these factors are beyond control of state government officials.

In a word, state managers should be, and are looking for additional sources of revenue. One obvious source of significant amounts of revenue is to put state dollars to work, and more and more States are taking advantage of investment opportunities. Perhaps no State has a more completely developed investment program than Wisconsin, which has been investing the assets of retirement funds for 65 years.

This monograph is the fifth in the Council of State Governments' current series of reports on innovative state government programs. It probably comes the closest to describing a "model" program. One reason is that the State of Wisconsin Investment Board has had 25 years to evolve.

We are grateful to the many individuals in Wisconsin, especially those associated with the investment board, who were so generous with their time in helping us to understand the agency's activities and responsibilities. In addition to each of the investment directors, we especially want to thank George W. Crownhart, General Counsel for the board and at the time of our visit acting executive director; Gerald T. Mahaffey, Administrator, and Tom Landgraf, Director of State Budget Operations.

Several individuals reviewed earlier drafts and made useful comments: LeRoy Dockter, Audit Director, Wisconsin Legislative Audit Bureau; Peter J. Nelson, Assistant State Treasurer, Wisconsin; George A. Bell, Executive Director, National Association of State Budget Officers; and Carl Vorlander, Executive Director, National Association for State Information Systems.

Further information can be obtained from officials of the Wisconsin Investment Board (telephone 608/266-2384) or the authors of this report (telephone 606/252-2291).

Dick Howard
James Jarrett

August 1976

EXECUTIVE SUMMARY

- The State of Wisconsin Investment Board invests the retirement funds of the major government employee units in Wisconsin: Milwaukee teachers, state employees, and Wisconsin teachers.

- The investment board invests idle cash from 34 different state accounts, earning $56 million on these pooled accounts last year.

- The investment board invests the State's check float, working with the state treasurer and the Department of Administration to ascertain the State's revenue and withdrawals each day.

- The Wisconsin board also has authority to invest the surplus funds of local governments that may deposit such funds with the treasurer.

- The Wisconsin investment program is facilitated by:

  —Use of only one bank for all deposits and withdrawals of state funds. (No state money is deposited or invested in other state banks.)

  —A computerized statewide accounting and reporting system that allows quick and accurate cash flow estimates by the Department of Administration and state treasurer.

  —Use of a custodian bank in New York City that eliminates handling of securities by Wisconsin officials and permits immediate transfers.

  —Great latitude in the types of investment instruments that can be purchased thus permitting the flexibility needed to maximize investment return.

- Almost all aspects of the Wisconsin investment program have been specifically authorized by Wisconsin law.

HOWEVER, other States should consider that *an investment program similar to Wisconsin's*:

- Would reduce the control top elected officials have over the use of surplus state funds;

- Would be opposed by banks which would no longer serve as depositories of public monies, including some local funds in the case of the Wisconsin local government investment pool;

- Would be more difficult to implement if centralized, computerized accounting procedures were not in use;

- Would be almost impossible to implement if the number of bank accounts cannot be kept to a minimum, preferably one or two;

- Would be opposed by agencies which are now managing the assets of retirement funds.

I. INTRODUCTION

The State of Wisconsin Investment Board manages assets of nearly $2.75 billion (6-30-75) which earn about $175 million (based on a reported rate of return of 6.7 percent). Annual gross purchases and sales in fiscal year 1975 approximated $12.75 billion. In addition to the millions of dollars earned from investing the assets of several retirement funds, the Wisconsin Investment Board earns millions of dollars by investing idle cash balances of 34 pooled accounts, including the general fund. In 1975 the average daily balance in the state investment fund was $614 million. The return on these particular investments exceeded $54 million–$28 million for the state general fund and about $26.5 million credited to the other pooled accounts.[1*]

By way of comparison, $28 million is more than the combined amount appropriated from the general fund to the following Wisconsin agencies: Banking ($3.5 million), Insurance ($9.1 million), Regulation and Licensing ($4.9 million), Local Affairs and Development ($5.2 million), and the Executive Offices ($3.4 million).

Not only does state law authorize the investment of almost all state funds, enabling legislation recently authorized the State of Wisconsin Investment Board to invest bank balances upon which the treasurer has written a check, but which from experience the treasurer knows will not actually be paid out by the bank for several days. In other words, Wisconsin invests its "float" in a manner similar to large corporations. In Wisconsin, the check float averages about $3.5 million per day. If the present 7.44 percent rate of return on short-term investments prevails, the check float would return $264,000 to the State–a sum equal to about 45 percent of the investment board's budget.

Since March 1976, the State, through the treasurer and investment board, has begun investing idle balances of local governments. Numerous cities are participating in the program. One city reports earnings of $62,000 on a one-month investment of $9.7 million.

There are almost no major governmental retirement funds in Wisconsin whose assets are not managed by the investment board. It also is widely believed that there are almost no idle cash balances of state agencies. The budget of the board was $576,000 in fiscal year 1975 including salaries and benefits of 28 employees, travel, the cost of investment services and outside investment counseling, and various other items associated with housing and supporting the staff. The $576,500 budget means that the direct administrative expenses of managing $2.75 billion in assets was a very low .02 percent. This ratio compares favorably with .2 to .4 percent commonly found in private financial institutions.[2]

The investment program in Wisconsin is facilitated by state laws that require centralized disbursements and centralized receipts. All checks are signed by the state treasurer in one form or another. All agencies must deposit receipts at least weekly and an even shorter time lapse prevails in the case of some large amounts.[3]

Another important facilitator is electronic data processing which is used throughout the accounting and reporting process.

The "state working bank" also plays an important role in the investment program. This bank, selected at about six-year intervals, is the

only depository for state money and it provides a variety of services including lock boxes, telegraphic money transfers, messenger deliveries, credit for after hours deposits, daily reports on the collected cash balances, and other specified services. Use of the working bank precludes the existence of idle cash balances in a number of depositories and permits rapid and accurate accounting of the State's cash position. Thus, all public money is working continuously.

Within its various portfolios, the investment board invests in stocks, corporate bonds, short-term and long-term obligations of the U.S. government and government agencies, repurchase agreements, real estate mortgages, commercial paper, and private placements. Bankers may lobby against reductions or elimination of state and municipal demand deposits and some legislators may occasionally insist that Wisconsin companies should get preferential treatment in the board's investments, but in the final analysis the direct, measurable economic benefits of a sound investment program have prevailed. The income from interest and capital gains has been substantial. Furthermore, the results compare very favorably with similar programs in the private sector, both from the standpoint of rate of return and costs to administer the program.

In the following section, the organization, administrative procedures, legal authority, and investment policies of the board are described. Additionally, there are separate sections devoted to the municipal investment pool and the Wisconsin state working bank.

*Footnotes for this report appear on pages 24-25.

II. INVESTMENT BOARD RESPONSIBILITIES

The statutes assign extremely broad investment responsibilities to the board and also give it responsibility for the selection of the state working bank. Section 25.17 (1) (a) through (zm) enumerate the funds over which the board shall "have exclusive control of the investment and collection of the principal and interest of all monies loaned or invested." The only public money not invested by the investment board is under the control of the Board of Commissioners of Public Lands and the University Board of Regents.

Retirement Funds

The major investment program involves the management of the assets of the State and Municipal Employees' Retirement Fund, the Milwaukee Teachers' Retirement Fund, and the Wisconsin Teachers' Retirement Fund. On January 1, 1975, these three large retirement funds were merged for investment purposes into two categories--a fixed fund and a variable fund. The fund with the fixed retirement benefits has a broad mix of investments that include bonds, stocks, mortgages, and real estate holdings. By contrast, the variable fund is restricted to equities, primarily common stocks. Finally, the board invests the assets of three smaller funds, the State Life Fund, the Insurance Fund, and the Historical Society Trust Fund. Investment of these funds is accounted for separately.

State Investment Fund

Another important investment activity pertains to the State of Wisconsin Investment Board's exclusive jurisdiction over and management of the State Investment Fund. This fund consists of idle cash balances pooled from 34 individual state accounts, such as the general fund, the conservation fund, the state property insurance fund, and the highway fund. Because of the need for flexibility, the emphasis is on short-term investments--repurchase agreements (usually a short-term investment with a bank which is secured by U.S. Treasury bills), reverse repurchase agreements, commercial paper, certificates of deposit, bonds and notes of U.S. government agencies, and U.S. Treasury notes and bills. At one point in November 1975, the State Investment Fund totaled $830 million. The average daily balance invested was $614 million. The high short-term interest rates of FY 1975 permitted returns of 8.89 percent or $54 million.

Local Government Investment Funds

Recently a third investment pool has been authorized and responsibility for its management given to the State of Wisconsin Investment Board. This fund consists of money due local governments through tax sharing, but left with the state treasurer for subsequent board investment--usually short-term. See Section IV of this report for a description of this newest aspect in the innovative Wisconsin investment program.

Investing the Float

In recent years, another important source of investment income to the State has been the short-term investment of "float," that is the difference between the cash on the treasurer's books and the collected cash balance on the working bank's books.

Investing the check float allows checking account balances to earn additional money while outstanding checks are undeposited or are in the process of clearing. Prior to a legislative enactment in 1974, the State of Wisconsin was barred from investing the check float. The attorney general had ruled that all funds disbursed by check had to be payable on demand. Because the State of Wisconsin has an average daily check float of $3.5 million over and above the balance required for services the stakes of investing the excess float are of considerable economic importance. The procedure for investing the float can be illustrated by an example of state employees' payroll checks. If payroll checks are disbursed on Thursday, it is known from past experience that about 4 percent of the checks will clear the state working bank on the next day; an additional 28 percent will clear on Monday; 40 percent will clear on Tuesday, and the remaining checks will trickle in later. Therefore, about 68 percent of all payroll funds can be placed in short-term investments by the investment board for four days (Thursday to Tuesday). The state treasurer's office, after receiving the state working bank's daily report and computing the check float each day, will include these funds in the amount available for short-term investments and transmit this information to the investment board's short-term division.

There is no danger of overdrafts in the normal sense because the State maintains approximately $10 million as compensating balance at the working bank. If the compensating balance goes below the minimum requirement, a charge is carried forward the next month against the State's account.

Revenues generated by investing a State's check float will vary depending on the average daily float and short-term interest rates. In Wisconsin, with an average daily float of $3.5 million, the annual income generated would be as follows based on various short-term interest rates (income computed on 360-day basis):[4]

5 percent	$177,000
6 percent	$212,000
7 percent	$245,000
8 percent	$283,000
9 percent	$319,000
10 percent	$354,000

The most recent return on the State Investment Fund was 7.44 percent which, if maintained for the remainder of 1976, would bring the State nearly $264,000 this year. As one Wisconsin official noted, "With respect to the over $3 million per day typically tied up in check float, the situation is simple: either the bank makes money on it or the State of Wisconsin does."[5]

State Working Bank

One other important, but noninvestment-related, function assigned by the Legislature to the board is the designation of the state working bank. This bank is the depository for all of the State's funds. With few exceptions, it provides the State with all its banking services. See Section V of this report for a description of the state working bank.

Development of the Wisconsin Investment Program

The 28-person staff, the five investment divisions, and the several investment pools managed by the investment board are the present characteristics of an ongoing investment process that can be traced to 1911 and the creation of the State Annuity Board. Actually the board superseded the Annuity and Investment Board which by 1947 already exercised centralized control of investments, having responsibility for both idle operating funds and retirement trust funds.

At the outset, the Board of Trustees consisted of seven persons including the Governor, who was chairman. The staff numbered three. The investment board had the authority, even then, to invest in real estate, mortages, common stocks, preferred stocks, and U.S. government securities.

Over the years, many changes have brought additional retirement and operating funds under the jurisdiction of the investment board, streamlined the administrative procedures, expanded the types of investment instruments available to the investment board and reduced the day-to-day role of the trustees vis-a-vis the staff. As the changes occurred and the assets under management increased, the size of the staff also increased although less rapidly.

In 1957 the State Investment Fund was created by the Legislature when it consolidated 19 different operating and temporary reserve funds into one. The Legislature also created the fixed annuity and variable annuity funds for each of the retirement trusts as a response to inflation.

By 1958, the third of the major retirement funds, the Milwaukee Teachers, placed its assets under the board's control.

The actual physical storage and handling of securities by the state treasurer's office ended in 1970 when the Legislature authorized the board to maintain an account at a non-Wisconsin bank. In that year, a custodian account was opened at a New York City bank for equities and a couple of years later an account for bonds was established at the same bank.

In the past three years, the trustees have prepared a policy manual delegating considerable authority to the staff;[6] the State has begun investing its cash float; the local government investment fund also has come into being; investment in longer term U.S. government obligations and unsecured notes of corporations including certificates of deposit has been authorized along with reverse repurchase agreements in a general effort to allow greater earning power and flexibility in short-term investments. The three major retirement funds have been merged for investment purposes greatly reducing the accounting work and enabling the fixed portfolio to be improved by amortizing gains and losses over a period of slightly more than 14 years (see page 00).

The Politics of Investing State Funds

The investment board is apolitical and most observers agree that political pressures are minimal. However, with this much money, there are always interest groups endeavoring to have the funds benefit them or their causes. Two groups have, in fact, "borrowed" a substantial portion of the General Fund portion of the state investment pool: (1) the board must make available at the request of the Department of Veterans Affairs up to $16.5 million for the purpose of housing loans to veterans, and (2) upon the request of the higher educational aids board a cumulative total of not more than $55 million for loans to needy students.[7]

Not surprisingly, some underlying pressure is reflected in some legislators' views–to increase the percentage of brokerage business done with Wisconsin brokers and to give preferential treatment to Wisconsin companies when making loans and investments. In addition to the pressures for geographic preferences, there are from time to time pressures to give preferential treatment to minority businesses, and to avoid investments in companies engaged in "socially undesirable activities."

The independent nature of the board reinforces the individual member's inclination in the role as trustee not to pursue social goals in investment policies, and the Legislature has not mandated that social goals should be an investment consideration. Another factor mitigating against social issue criteria is the inability to agree upon and measure social benefits versus the clearly measurable results of economic decisions. An 8.26 percent return is an 8.26 percent return and it is better than a 7.26 percent return.

Although investment directors do not in fact give weight to social criteria the Board of Trustees cannot and does not take a "public be damned" attitude. It is aware that it operates in a political environment.[8]

III. ORGANIZATION OF THE INVESTMENT BOARD

The State of Wisconsin Investment Board consists of seven members, six of whom are appointed by the Governor to staggered six-year terms. The seventh trustee is the secretary of the Department of Administration or the secretary's designee. Four "public" members must have at least 10 years of experience in financial matters (Wisconsin Statutes 15.79[2]), and the other gubernatorial appointees are nominated by the Wisconsin Teachers' Retirement and the State Employees Retirement Fund, respectively. The trustees generally meet for two days a month.

Staffing.

Actual investments—purchases and sales—are made by the staff acting under general policy guidelines set out by the seven-member Board of Trustees.[9] The staff is headed by an executive director who serves at the pleasure of the trustees. The staff presently numbers 28, and one more position has been authorized for the 1976-77 fiscal year.

Reporting to the executive director are five investment directors, each of whom is responsible for a three- or four-person division. The investment directors are appointed by the executive director with participation of the trustees. The investment director positions are part of the Wisconsin State Civil Service System and incumbents, after a probationary period, can only be terminated for cause. (Poor performance can be cause and investment directors have been terminated on that basis.) In addition to the investment directors, there is an administrative officer who is in charge of office operations such as personnel, accounting, secretarial, and clerical services.

The structure of the organization is in the process of changing. A research division is being created which will consist of a research director and four analysts. Previously, there were two research analysts and they reported to the investment director for stocks. Under the new arrangement, they will continue to analyze industry groups, but as the change suggests, will provide support services to all five investment directors.

Despite the existence of these research specialists, the board primarily relies on New York and selected regional investment banking firms for firsthand research of particular companies.

Salary ranges for top positions are shown below. While it is generally agreed that salaries for comparable positions in the private sector are higher, the investment board is able to fill its positions with competent individuals.

Position	*Salary Range*
Executive Director	$31,068 - $43,500
Investment Directors	$28,512 - $39,912
Research Director	$17,016 - $23,820
Senior Research Analyst	$14,316 - $20,040
Junior Research Analyst	$10,368 - $13,896

The day-to-day investment decisions are made by the investment directors with the concurrence of the executive director.[10] Quarterly, the investment directors and the executive director meet to determine how the estimated revenues will be allocated among the divisions: stocks, private placements, corporate bonds, short-term, and mortgages and real estate. Allocation depends on their collective judgment of market and investment opportunities in forthcoming months. Their views are also considered by the Board of Trustees, who retain the services of outside financial advisors.

Some funds such as those earmarked for the variable long-term investment fund, for example, all go to the investment director for common stocks. He decides on the timing and brokers for his purchases and sales, as do other investment directors for the funds allocated to them during the quarter.

Long-term investments for the fixed fund are generally invested by the Bonds, Private Placements, and Mortgages divisions. The short-term investment division is responsible for investing the 34-fund pooled account, the "float" funds, and the new local government investment funds.

Table 1 shows the diversified types of investments managed by the State of Wisconsin Investment Board.

Table 1

State of Wisconsin Investment Board
Assets Under Management
(June 30, 1975)

Public Bonds	$829,000,000
Bonds, Private Placements	322,000,000
Stocks	876,594,000
Mortgages	174,513,000
Real Estate	26,283,000
Short-Term	488,190,000
U.S. Treasury Notes & Bills	40,100,000
Government Agencies	86,670,000
Commercial Paper	105,945,000
Repurchase Agreements	255,475,000

Source: State of Wisconsin Investment Board, *Annual Report* Year Ending 6-30-75

Investment Division—Bonds

Bonds are a major part of the fixed fund portion of the long-term investment portfolio. During FY 1975, the Wisconsin board invested $90.7 million in publicly issued bonds and $45.2 million in private issues. All bonds account for approximately one-half of the long-term assets managed by the board, $1,150,955,949 or 51.8 percent on June 30, 1975. The public bonds portion was $829 million. Interest income on public bonds was $36 million for the fiscal year.

Investment in corporate and government bonds is not unique to Wisconsin. In Wisconsin, specific authority to invest the fixed retirement investment trust, the state life fund, and the veterans trust fund is contained in Section 25.17 (3) (a) of the Wisconsin code. Statutory limitations on such investments are spelled out in Section 206.34 of the

Wisconsin statutes of 1969. Regarding the bonds of industrial corporations the investment board may not invest more than 2 percent of its assets in any one company nor may it invest in a company that has defaulted in the payment of principal or interest on its indebtedness within the past five years.

In addition, under the policies established by the Board of Trustees, all bonds purchased must be rated by two approved rating organizations. With regard to AAA bonds, no more than 2 percent of the fixed funds assets may be invested in any one issue; for AA or A the limitation is 1 percent and for Bbb or Baa, up to .25 percent. Baa and lower rated credits are reviewed annually.

Excluding portfolio improvement transactions (discussed below) an average of two issues of bonds is purchased each month. There is no policy that places emphasis on the credit issues of Wisconsin companies. However, it is the practice of the Bonds Investment Director to try to give Wisconsin bond dealers 50 percent of the "new issues" business where possible. To give Wisconsin dealers most of the bond business would preclude the division from receiving the research of New York based brokerage firms. The bond portfolio is now computerized by a brokerage house and each month a printout of the bond portfolio is sent to the investment board.

Transaction Amortization Account

The 1975 merger for investment purposes of the three major retirement funds facilitated another important change in investment procedures, particularly in the purchase and sale of bonds and stocks. It enabled the board to create a "transaction amortization account" whereby profits or losses from the sale of assets are spread over a 14-year period. Traditionally, most agencies investing public funds have applied profits or losses resulting from the sale of assets to the earnings of the year in which the sale occurred. One result was a certain inflexibility in portfolios since most portfolio managers were reluctant to sell assets resulting in large "book" losses that would be charged to the current year's investment income.

By merging the three retirement fund investments, it was no longer necessary to maintain records on each series of assets held in the portfolio. All gains or losses could be debited or credited to one account. The next step was to amortize all profits and losses at the rate of 7 percent annually, or slightly more than 14 years for the fixed retirement fund.

Among advantages reported are: (1) savings in work load, time and dollar costs by no longer amortizing each security, (2) a smoother, more representative and equitable annual income, and (3) greater flexibility in bond portfolio management. In fact, the Wisconsin board reports that in the first six months after the new accounting procedures were instituted, 24 separate "portfolio improvement transactions" changed the average annual yield on these investments from 7.633 percent to 9.007 percent. The book loss was $4 million, $33.4 million par value sold and reinvested in bonds having a $29.4 million par value.[11]

Investment Division—Stocks

Common stocks comprise almost 100 percent of the "variable fund" and a substantial part of the "fixed fund." In FY 1975, for example, 28 percent of the board's fixed fund cash was invested in common stocks. During the fiscal year, common stock purchases totaled $152 million, and total sales were $102 million.[12] As of June 30, 1975, stocks accounted for 39.5 percent of the State of Wisconsin Investment Board's long-term assets (variable and fixed funds) and were

valued at $876.6 million. In the fiscal year, the market value of the stocks in the fixed fund rose 20.8 percent and variable fund, 25.3 percent compared with a 16.1 percent of the S&P 500 Index—the most commonly used measure for evaluating performance of the Stock Division.

Stock transactions are made daily and net purchases average roughly $30 million a month. Commissions approximate $1 million annually in return for which the Wisconsin Investment Board receives considerable research.

Wisconsin's law [Chapter 25.17 (3) (a)] specifically provides that funds in the fixed category from the three major retirement programs may be invested in accordance with 1969 statutory provisions [Chapter 206.34]. The statute states that purchases of stocks can only be made from companies whose earnings meet certain specified criteria; no more than 1 percent of the investing agency's assets may be invested in the common stock of one company; nor may the equity position exceed 15 percent of the company's assets.

The Board of Trustees has delegated to the staff (Investment Director—Stocks) authority to purchase or sell stocks. However, stock purchases must be from the trustee-approved list of 206 companies. The investment director must also adhere to the trustees' policy limiting stock portfolio assets in any single industry to 15 percent, and no more than 30 percent may be invested in any one of the following broad categories: basic industry, consumer, technology, government regulated, and financial.[13]

The investment director reports that these constraints cause no particular problems and that the stock portfolio includes ownership in 120 companies.[14] A major criterion of the investment director is that an $8 to $10 million equity position will be possible in any company whose stock they might purchase. Because these stock investments usually do not go directly to companies, there is no pressure to buy the stocks of Wisconsin companies.

Investment Division—Private Placements

Presently, $400 million (all from the retirement funds) is invested in private placements. According to the director of the division, "the major reason for inclusion of private placements in the portfolio is to realize an above average return on investments, through assumption of somewhat above average risk plus a premium for lack of marketability."[15]

The division currently has outstanding loans to 300 companies across a variety of industries: railroad, oil, savings and loan, foundry, retail chain, utility, and various manufacturing companies.[16] Loans are not restricted to Wisconsin; the majority of private placements are in other States and Canada.

Criteria for a private placement investment are rather strict. The two most important ratios analyzed are that long-term debt will not exceed 40 percent of total capitalization and that the sum of pretax earnings and fixed charges will be three times the fixed charges for the last two years (a 3 x fixed charge coverage ratio). The minimum loan is $2 million and no credit rating of less than Baa will be considered. Placements cannot be used as venture capital—no loans can be made to companies in existence for less than five years.[17]

If the application has met this initial set of criteria, placement division staff request additional financial material and check many standard accounting measures such as rate of return on sales, operating margins, tax rates, and cash flow position. Also, the staff will consult

with outside people and solicit opinions on the company and industry, and may make site visits to the company.

There have been instances of legislators criticizing the private placements division for not loaning more money to Wisconsin firms. Concessions in the quality of the company or in the quality of the loan have not been made for placements in Wisconsin, but there are some allowances made for Wisconsin placements in terms of company size and requested loan figures. For companies outside the State, the minimum loan is $2 million, and only those whose annual sales are at least $40 million are considered. Wisconsin-based companies may request a loan as small as $1 million provided their annual sales are at least $15 million. Recent loan yields have averaged nearly 10 percent and it is estimated that fewer than 10 of the 400 loans outstanding are problems.

Investment Division–Mortgages and Real Estate

At present it is the board's policy that mortgages and real estate investments shall comprise between 5 and 25 percent of the fixed-fund portfolio. On June 30, 1975, nearly $200 million was invested in mortgages and owned real estate. Return on mortgage and real estate investments exceed that of the bond division. The average return on the mortgages division's portfolio was 7.34 percent as of June 30, 1975.

A detailed set of guidelines is used by the three staff members of the division in determining which mortgages and real estate opportunities will be funded.[18] As with the other divisions, all investments of the mortgages division must conform to the broad specifications for investments set forth in the 1969 statutes.[19]

There is a broad diversity of mortgage fundings. In 1975, over $51 million was loaned to 16 income properties–two shopping centers, eight apartments, two warehouses, a medical clinic, a nursing home, a manufacturing facility, and a participation in a loan on an office building. While there is an emphasis on mortgages and real estate investments in Wisconsin, more than 75 percent of the division's portfolio is placed outside the State.

Investment Division–Short-Term Investments

The short-term division has responsibility for investing the state investment fund which consists of 34 separate accounts such as the general fund (including the check float), highway fund, local government pooled investment fund, and cash of the retirement systems prior to its long-term commitment. Assets managed by the two members of the division vary from $600 million to $1 billion. As of May 15, approximately $775 million was invested by the division. Daily purchases and sales average approximately $75 million, and the short-term portfolio turns over every few weeks.

Return on the state investment fund was 9.02 percent in fiscal year 1974, 8.89 percent in fiscal year 1975, and 7.44 percent in the most recent quarter ending March 31.[20] The 7.44 percent rate of return for the recent period, as other state officials will note, is an excellent return since it was 1-1/2 to 3 percent greater than interest rates generally available to large cities. Declining short-term rates in the last 18 months are attributable to national trends.

A variety of short-term investment devices are used: government agency paper, bank certificates of deposit, open day-to-day and term-repurchase agreements, commercial paper, and reverse repurchase agreements.[21] In mid-May, the assets were distributed as follows: government paper – $590 million ($85 million was invested in a single U.S. treasury bill); certificates of deposit – $55 million; open end repur-

chase agreements – $60 million; and commercial paper – $70 million. Usually no investments under $1 million are considered, or agreements under $5 million made.

Operationally, the short-term division receives a computer printout every day before 7:30 a.m. listing all current investments and specifying the present value for each discounted security. By 11 a.m. the division will have been notified of the check float level, will have balanced off the State's cash position, and will have checked over vouchers and amounts for individual transactions. After 11 a.m., the division will make trades for the following day, including making sales to cover the State's disbursement needs for the following day.

Investments are selected by the short-term staff from information supplied by brokerage houses and from staff's own knowledge of the short-term markets. The board's in-house research staff is not utilized regularly because forecasting is less useful for short-term investments than for long-term bonds and stocks.

In the future, the short-term division, in hope of increasing its options and of obtaining an even greater return on the investment fund, will request authority to invest in bankers' acceptances and "Eurodollar" certificates of deposit (the debt securities, in U.S. dollars, of overseas branches of U.S. banks). The ability to sell short in the market also is a possible future investment avenue of the division although the board's trustees have not yet given their consent for this more sophisticated and greater risk investment activity.

Administrative Expenses

An important feature of the investment board's operations is its low administrative expense. Table 2 compares the board's assets to expense ratio with those of private insurance companies and nonprofit investment operations. The Wisconsin Investment Board's expenses are proportionately lower, and in all but two cases (College Retirement Equities Fund and the Illinois Investment Board) the board's expense ratio is one-fifth that of other organizations.

Table 2

Ratios of Assets to Expenses, Selected Comparisons, 1973

ORGANIZATION	*INVESTMENT ASSETS*	*INVESTMENT EXPENSES (EXCL. TAXES)*	*PERCENT*
Acacia Mutual Life	$ 607,881,098	$ 2,774,004	0.456%
Allstate Life Insurance	357,674,020	415,023	0.116%
Aid Assoc. for Lutherans	1,086,948,891	1,479,078	0.136%
Connecticut Mutual Life	3,116,740,666	57,082,944	1.831%
Continental Assurance	1,818,404,188	4,138,855	0.227%
Equitable Life Ins.	14,971,951,691	57,530,742	0.384%
Franklin Life Ins. Co.	1,433,098,891	2,754,778	0.192%
John Hancock Mutual	10,391,836,359	29,414,166	0.283%
Lincoln Nat'l. Life	2,410,340,286	3,649,828	0.151%
Mass. Mutual Life	4,795,468,874	17,907,492	0.373%
Metropolitan Life Ins.	30,286,075,837	99,071,174	0.327%
Mutual Life of N.Y.	4,044,504,230	16,058,497	0.397%
College Retirement Equities Fund	$ 2,600,056,231	$ 1,611,552	0.062%
Teachers Ins. & Annuity Assoc.	3,370,887,045	4,657,944	0.138%
Illinois Investment Board	793,726,994	643,628	0.081%
1974 Investment Board	2,520,303,000	524,468	0.0208%

Source: Wisconsin Investment Board

The investment board's administrative expenses are two cents per $100 of invested assets. As Table 2 shows, in 1974 administrative expenses stood at .0208 percent of assets. This represents a slight decline over the past decade, during which time assets have tripled while staff has doubled. In 1965, the percentage for administrative expenses was .0289.

Several factors may account for the board's low administrative expenses. First, the number of staff and their salaries are less than comparable to private financial institutions. Second, because most funds managed by the board may be pooled, there are significant benefits achieved by a concentration of capital in terms of broker and trader commissions. Third, the board, by being a large institutional investment operation, receives research and related services as a result of its commission fees, that is, no cash outlay. Fourth, the board, like most state agencies, minimizes expenses for amenities and other perquisites.[22]

IV. STATE-LOCAL FISCAL COOPERATION

In February 1976, a bill was enacted in Wisconsin which may produce significant economic benefits for local governments in Wisconsin as well as Wisconsin state government. Senate Bill 788 (reprinted in Appendix A) created two local government investment funds to be managed by the investment board—the pooled investment fund and the trust investment fund. The pooled investment fund is already in operation and will receive the bulk of attention in this section.

The pooled investment fund is a voluntary mechanism by which counties, cities, villages, and towns can deposit with the treasurer any state-shared taxes, local revenues, or idle reserves for investment by the state investment board. The interest earned, equivalent to the rate of return for all short-term investments by the board, is credited to the local government, and funds can be withdrawn on one-day notice with no penalties. The trust investment fund permits local governments to establish their own investment accounts with the state investment board and to have their funds managed for a specific period of time.

Background

Legislation authorizing the pooled investment fund was first introduced by the state treasurer in 1967 but was withdrawn after 11 days because of pressure from the banking community. Because of a temporary (15-day) cash flow problem in Wisconsin state government, the program was revived with modifications in the spring of 1976. The State, which needed cash to disburse real property tax credit payments to local governments, was and is prohibited from borrowing more than $100,000 for current obligations and is prohibited from interfund transfers. Therefore, local municipalities were faced with receiving a prorated amount of their shared taxes. State officials, however, knowing that Wisconsin municipalities collected their main revenues – property taxes – prior to February 28, reasoned that the temporary cash flow crisis could be averted if enough municipalities would defer receiving their state payment for two weeks. As an inducement for such "loans," local governments would receive interest equivalent to that received on short-term investments of the investment board. Nineteen local governments left their funds with the State, and the temporary cash flow crisis was solved.

The pooled investment fund passed the Legislature under propitious circumstances. There was a fiscal crisis situation and the State's bankers were unorganized. While conditions in other States may not be similar, the economic benefits produced by establishment of a pooled investment fund might be sufficiently compelling to overcome opposition.[23] A major hurdle in Wisconsin was obtaining the support of local officials who were concerned about allowing the State to retain their funds in the pool. The local treasurers' association went on record opposing the investment pool. Opposition to the pooled investment trust was softened, however, by also providing for an investment trust fund which would require individual accounts for each locality's funds and for a specified time. If used, the trust fund will not offset the State's cash flow problem since these funds will be tied up for specified periods of time and thus be unavailable to the State.

Provisions of the Two Local Funds

Senate Bill 788 specifies the major similarities and differences between the pooled investment fund and trust investment fund. First, for both funds, local government officials would tell the state treasurer whether they prefer to have their portion of shared taxes paid directly to them or deposited in their account in one of the funds. Secondly, both funds permit local government officials to augment their accounts in the investment board with idle reserves and any other local funds available for investment. Third, for both funds, a maximum of one-fourth of 1 percent of *earned income* will be deducted by the state investment board for administrative costs.

Fourth, local money in the pooled investment fund, while credited to individual local government accounts, would be pooled with state funds for short-term investments. Local money in the pooled investment fund would earn interest based upon the average yield of all short-term investments determined quarterly by the investment board. Local funds in the trust investment fund would not be commingled with other local funds or state funds and unlike the pooled fund, interest on trust investments will be determined by the yield on each separate local government account.

Fifth, local officials depositing funds in the pooled investment fund need not specify on what date they would like their principal and interest returned. Local officials depositing funds in the trust fund must designate the length of investment time for their funds, and incur any financial penalties for early withdrawal of their monies from the trust fund.

How the Pooled Investment Fund Works

The mechanism for direct transfer of local government funds from the state treasury to the investment board serves two functions: (1) it reduces the amount of time which local government funds would sit idle and not receive interest, and (2) it helps the State handle emergency cash flow problems.

Operationally, the deposit and withdrawal system is quite simple. If a local unit of government is depositing money in the pooled investment fund from its state shared taxes, that government gives the state treasurer written instructions as to the amount which the State should retain. If a local unit of government is depositing idle cash from its own treasury, the local treasurer would ask the local government's commercial bank to transfer the funds to the state treasurer for deposit in the investment pool. The investment board will receive its information from the treasurer's office and it will be included in the daily total cash figure which can be invested. The investment board is not notified by the towns directly.

For withdrawals, the same process would be used. If notice of a partial or total withdrawal of the municipality's funds is made by 10 a.m., the state treasurer's office will issue a check that same day and transfer by telegraph the funds to the working bank of the local government. If the check cannot be issued until the next day, the local government also would be credited with an additional day's interest.

The interest earnings are computed on an average yield for a quarter and are based on the average daily balances of each participant's share of the short-term investment fund. Computer programs are used to determine the balance, deposits and withdrawals on a daily basis for each local government.

Advantages of the Pooled Investment Fund

Both the local governments and the State should benefit from this investment pool. For the State of Wisconsin, the new arrangement of localities voluntarily leaving their funds will provide a mechanism to help it deal with the periodic, temporary cash flow problems. In turn, the State's credit rating will not suffer because of frequent cash flow difficulties. Local government funds provide additional capital to the state investment fund; therefore, the state agency may experience a better rate of return on investments and realize economies of scale on the cost side. Moreover, any constant flow of new short-term capital from local governments will enable placements in those investments that are providing the best current rate of return—thus possibly raising the overall rate of return on the State's short-term investments.

Increased cooperation between state and local fiscal officials, it is hoped, will reduce the distrust of state government by local government officials. Finally, to the extent localities experience an improved financial status, the State benefits indirectly.

For local units of government, the pooled investment fund will operate as a checking or demand account which pays a higher rate of return than local governments could obtain on their invested funds.

Officials in the Wisconsin Department of Administration conducted a comprehensive analysis of local government investment practices and discovered that 81 cities and 67 percent of all towns and villages in Wisconsin received no interest income in the 1974 calendar year. Many local officials simply placed idle cash reserves in noninterest bearing demand accounts in local banks.

Local governments should get higher returns on their funds because the investment board can invest in high-yielding, short-term investments such as repurchase agreements and commercial paper, because of lower dealer fees and because of the greater expertise of the board's professional staff. For example, because local governments will receive the same rate of return regardless of whether they invest $2,000 or $200,000 (that is, there is dollar averaging across investors), smaller towns and villages most likely will receive higher interest than if their accounts were invested separately.

In addition, the pooled investment fund, by providing local officials an alternative investment option, may force banks to provide more services to local governments in order to maintain the locality' operating funds.

For some municipalities the flexibility of the pooled investment fund will permit an integration of local governments' investment policies with their cash flow system. As noted previously, local governments may invest funds for any amount of time—one or two days or much longer periods. This "variable date" provision ensures that municipalities will not be penalized for early withdrawal or caught in a cash flow problem because of illiquid investments. In fact, the liquidity of the short-term investments and the mechanism for rapid transfer of funds from the state treasurer to local treasurer will enable local governments to receive their funds on the same day or one day after their notice of withdrawal.

Costs involved to state and local governments from the local government pooled investment fund are nominal. Local governments, in fact, incur only the costs of a phone call or postage for a letter to the state treasurer. The state investment board, as stated in the legislation, will deduct a maximum of one-fourth of 1 percent of all earned interest for administrative expenses. It is anticipated the actual administrative costs will be significantly less than this amount.

One possible difficulty that could arise for the State involves money left by local governments in the general fund at the request of state officials, for use in temporary cash flow difficulties, which is not invested but distributed to local governments who need their share. Lender local governments will receive interest on these funds just as if they were being invested by the investment board. Since these funds were not invested, there is an interest expense for the State that must later be appropriated from the general fund. It is not clear how much of a problem this will be and state officials do not agree. While there is a cost to the State of Wisconsin associated with operating the pooled investment fund during cash flow difficulties, this cost will be less than through borrowing on the short-term markets which is not legal under present law. Of course, any final solution to the cash flow problem must await statutory changes that spread payments throughout the year rather than require very large payments once or twice a year.

The Investment Trust Fund

As established, the local government trust-investment fund will be a vehicle for longer-term fixed investments by local governments. The trust fund, then, is conceived as a different type of investment option than the pooled investment fund.

Unlike the pooled investment fund, capital in the trust fund cannot be used by the State for cash flow purposes because it is in fixed investments. In terms of administrative/bookkeeping costs, the trust fund also is less advantageous--the Department of Administration must set up an individual account for each municipality (potentially 1,400) and maintain records on the type of investment interest earned, compute penalty charges for early withdrawals, and set up procedures for notifying local governments when their investments have become mature. In contrast, for the pooled investment fund, the Department of Administration, in cooperation with the state treasurer's office, needs only to maintain records on the average daily balance of a municipality's account during each calendar quarter as all accounts will receive the same rate of return.

If most local governments use the trust fund for long-term investments (over six months), the administrative task would be manageable, although still an additional burden to the investment board. If local governments wish their funds to be managed and rolled over frequently in short-term investments, the board might be overwhelmed, given present staffing.[24]

Initial Results of the Pooled Investment Fund

The pooled investment fund became effective March 1, 1976, with $61.5 million in deposits from local governments that left their state shared taxes with the State to assist with cash flow problems. After the temporary cash emergency, local governments withdrew over $45 million. Five cities kept their shared taxes in the investment pool during the month of March and received a 7.44 percent rate of return, the overall short-term investment yield for the first three months of 1976. Madison, Wisconsin, earned approximately $62,000 on its one-month investment of $9.7 million.

Overall, the pooled investment fund has been well received, and now, after the initial period of communicating the details of the program to local officials, participation is increasing. In one two-week period in mid-May, 26 additional local units of government invested cash in the pooled fund. As of July 12, 1976, local governments had nearly $28 million in the fund.[25]

Start-up costs of the pooled fund were minimal as coordination for the program involved no budget and limited staff time. It appears no additional state employee must be hired for investment purposes. One person may be hired to serve as the principal information and resource contact for local governments although a final decision has not been reached.

Few complaints have surfaced to date. One city treasurer who has left shared taxes in the pool and also has transferred an additional $2.1 million of the city's cash to the pool sees only two needed modifications. First, according to this official, the investment board should disseminate brief biweekly or monthly reports on what types of short-term investments are being made. This information, he suggests, would be useful for his own investment operation and could also be used to inform the elected city officials that the pooled fund will provide a superior economic return.[26]

Secondly, the city treasurer hopes that when local governments withdraw their funds from the pool, the interest will be returned immediately with the original funds. Currently, earned interest will be returned at the end of the next calendar quarter when the investment board computes the rate of return on short-term investments. Local treasurers can, of course, make estimates of their cities' interest income.

Implementing the Pooled Investment Fund in Other States

In Wisconsin, the pooled investment fund benefits state and local treasuries. In States without a centralized investment unit, establishing an investment mechanism for local governments would be considerably more difficult. States without financial expertise in short-term investments probably should not initiate a pooled fund until an investment board is operational for several years or until appropriate staff can be hired. States with an existing investment agency will need to consider how a sudden influx of local funds will alter current operations. For instance, computer programs must be developed by the investment agency or treasurer's office for proper crediting of municipal accounts. And, until other States duplicate Wisconsin's rapid deposit and withdrawal system, some mechanism must be established so that local governments do not lose substantial interest income from slow transfer of funds.

Not all States may wish to assume additional functions and not all States would receive as many economic benefits as Wisconsin. If a State is not investing in the short-term area, local government funds would not permit a concentration of capital and higher yields. If a State is not experiencing cash flow problems or distributing large sums of cash to local governments, the pooled fund would be less attractive. If there are many cities with their own investment programs, participation in the pooled fund would be less beneficial.

The pooled investment fund would appear to offer many economic benefits to state and local governments, given an appropriate investment framework. This fund will not solve any major existing problem but it may generate state and local revenues without extracting these resources from reluctant taxpayers. Few programs can be assessed so favorably.

V. THE STATE WORKING BANK

Another aspect of the overall cash management system in Wisconsin is the "state working bank." The state working bank is selected by the State of Wisconsin Investment Board. Authority for selecting the bank is found in Section 25.17 of the Wisconsin Statutes:

> (61) [The Board Shall]. . .designate public depositories for the deposit of public moneys. . .coming into the hands of the state treasurer; allocate the deposits of all public moneys coming into the hands of the state treasurer, and limit the amount of such public moneys, as determined from the state treasurer's records, which may be deposited in any public depository so designated. . . .only such banks as have been named by the investment board as working banks shall carry state deposits on which checks are drawn to conduct the daily business of the state, all of which deposits shall be payable on demand.

The Legislature wisely avoided enumerating the selection criteria leaving that task to the board. Although the law would permit more than one working bank, the State of Wisconsin Investment Board has concluded that the operational advantages of using only one bank outweigh any operational or political disadvantages. Thus, there is only one Wisconsin bank serving as a depository for the State's funds. There are both operational and fiscal advantages from having one state bank instead of two. Coordination among a single working bank, the investment board, and the treasurer's office is an easier task because of a single disbursement account. Fewer man-hours are required to resolve any problems or issues when there is only one bank and better service usually results from having a super account with one bank instead of medium-sized accounts with two banks. The use of one bank instead of two has a fiscal benefit as well in that no interest will be lost due to transfer time between banks.[27]

The state working bank in Wisconsin is selected on the basis of proposals submitted by the interested banks.[28] Under the most recently used procedures, there is no ending date—a six-year working arrangement has been normal. It is anticipated that a thorough review of costs and services will occur at two-year intervals. Either the State or bank can terminate the arrangement with 12 months notice.

Activities of the State Working Bank

As banker for the State, the First Wisconsin National Bank will provide many of the services it provides for its largest corporate customers. In its relations with its banker, the State's objectives are the same as a corporation's: (1) accurate reflection of its cash situation at any point in time, (2) efficiency in the provision of services at a reasonable cost, and (3) rapid and accurate transfer of funds in order that the State can make maximum earnings on its funds.

The state account ranges from $2 million to $100 million on any particular day. Thus, the volume of work is considerable. During the year, there will be eight million deposit items to the state account that must be processed. There will be 4.6 million checks and 4.5 million

reconciliation items directly related to the state account.[29] Deposits are made by mail, lock box, wire transfer, and over the counter. All disbursements are made by check with several series currently being used.[30]

Although there may be numerous modifications and refinements in the procedures followed by the State and the working bank, the essential services required by the State are reasonably well defined by the investment board, state treasurer, and Department of Administration. Based on these services and the anticipated volume, the banks bid for the State's account. Among the services needed are:[31]

(1) The minimum time of credit shall be at least that provided by the Milwaukee Office of the Federal Reserve Bank of Chicago

(2) The state working bank, if located outside Madison, shall designate a Madison bank to serve as its agent and accept all deposits made on behalf of the state treasurer,

(3) Special courier runs from the state treasurer's office to the Federal Reserve Bank and to Chicago Loop banks to collect large dollar items,

(4) Lock box services used by employers for withheld state income taxes and also for motor and special fuel taxes,

(5) Same-day transfer of funds for settlements resulting from short-term investments,

(6) Normal checking services plus separate reconciliation for each of several series of checks, microfilms of all cancelled checks and microfiche indices of the microfilms,

(7) Telegraph transfer services, and

(8) Foreign exchange services.

In order to facilitate the State's investment program, each working day at 8:15 a.m. the bank must notify the state treasurer of the collected balance in the State's account in order that short-term investments can be made that day. A monthly account analysis will be provided showing the average daily balance and the resulting excess or deficit position in compensating balances.

Banks and the Selection Process

As noted above, the state working bank is selected by the investment board from among those Wisconsin commercial banks which prepare and submit a proposal for the State's account. Not all banks are anxious to have the State's account. The volume is great and it will have a significant impact on the bank's operations. Obviously only a large bank with a highly computerized transit department could handle the very large volume of work generated by the state account. If the bank doesn't have accurate information about its internal costs, income from this account may not cover the costs associated with servicing it. Another important consideration is what happens when the account is shifted again in 6 to 12 years as seems entirely likely. Since the addition in demand deposits resulting from the State's account are substantial, it may be necessary to increase the bank's capital structure. Finally, potential bidders must consider what, if any, effect serving as the state working bank will have on other large bank customers (e.g., will these customers want banks to bid for their accounts?).

On the other hand, both state officials and bankers believe there is some prestige in being the State's banker. Banks might also see this as an opportunity to make new contacts and possibly as an opportunity to further develop certain banking functions that previously had received too little attention. Undoubtedly, however, the chief reason Wisconsin's banks would consider bidding for the State's account is to increase profits.

Competing banks' proposals are submitted in terms of compensating balances that the State must keep in demand deposits at the working bank. The State provides information on the type and volume of services needed. Each bank details the costs of handling the State's banking business and indicates what compensating balance is required to cover these costs including whatever profit the bank considers appropriate. Appendix B is the proposal form devised by the Wisconsin Investment Board.

Table 3 illustrates the computation of costs and their relationship to compensating balances. In this hypothetical one-month period, the State's balance exceeded the minimum required balance so the resulting excess is credited to the following month. In instances where the State's balance was below that needed to cover the costs of administering the account, the deficit would be made up in the following month.

Again, in the Table 3 illustration, a deficit would occur if the monthly direct charges had exceeded $52,016 or if the compensating balance had been at a level such that the interest credit (102 percent of the treasury bill rate) was less than $48,705, or some combination of both.

Table 3

Example of Compensating Balance Credit Calculations

Total Monthly Direct Charges	$ 48,705
Average Collected Balance in the State's Account During the Month	10,618,300
Less 12 percent Federal Reserve Requirement	1,274,196
Net Collected Balance	$ 9,344,104
Interest Credit Computed at 102 percent of the Average Treasury Bill Rate (6.55 percent) for the month[a] (102 percent x 6.55 percent = 6.68 percent x $9,344,104 ÷ 12) =	$ 52,016
Excess Credit ($52,016 - $48,705) available to apply to subsequent month's charges	$ 3,311

[a] *102 percent of the average treasury rate is the credit rate determined by the State and the bank through the "bid" process.*

Source: *State of Wisconsin, "Specifications for Proposals to be the State Working Bank," Appendix B, October 15, 1975.*

In addition to providing the services listed previously, it is the view of investment board staff that the state working bank should have deposits of at least $120 million and that its capital, capital notes, surplus, undivided profits, and reserves equal at least $11 million.[32]

Questions that might be asked are, "Is the investment board the most appropriate agency to select the state working bank?" and "Does the selection procedure insure that the State gets the best possible deal?"

Regarding the first question, it is true that on a day-to-day basis both the treasurer and the Department of Administration have more extensive dealings with the state working bank than the board. The procedures developed will affect these agencies most directly, and the board has no particular expertise in developing the needed cash management, auditing, or accounting systems.

No compelling case can be made for an independent investment board's selecting the state working bank. Nevertheless, in Wisconsin the board's independent status, its arms-length review of proposals, and its generally good reputation lend considerable credibility to the selection process. Moreover, the trustees have financial and investment expertise, solicit the ideas of the treasurer's office and the Department of Administration in developing the specifications, and seek the advice of their custodian bank in New York City in evaluating the proposals.

Whether or not the State is getting the lowest possible costs as reflected in the required compensating balance is not known. However, the bidding procedure would seem to assure a reasonable charge for services. State officials appear satisfied. The response by the Wisconsin state treasurer is believed representative:

> ". . .under the State of Wisconsin philosophy of securing bids to serve as the state depository, we feel that the bidding banks through competition will arrive at a proper cost factor for their services. As a matter of truth we would be very reluctant to impinge our limited knowledge of bank costs upon banks who should bid on the basis of their own particular costs plus a reasonable profit.[33]

Again, this is not to suggest that the investment board is precluded from reviewing the bank's range of services, professional staff, equipment and facilities to ascertain if the bank can provide a proper level of services.

Utilizing the State Working Bank in Other States

In most States, the greatest obstacle to implementing the single state working bank concept is political. In Wisconsin the state working bank has been in operation for over 20 years and is generally accepted by Wisconsin's bankers. As taxpayers and businessmen it is difficult for banks and bankers to argue with the substantial efficiency savings and investment earnings.

Needless to say, the State's bankers have not always been so sanguine where the single depository for state money is concerned and as noted in the previous section, they opposed the creation of the local government investment funds. Perhaps the rationale most frequently advanced for maintaining numerous state accounts is the economic development one: these state dollars are used by local banks to generate additional business in the region. The viewpoint expressed by Wisconsin's elected treasurer seems appropriate:

> "Up to this time (although I admit there is considerable pressure to the contrary) the State of Wisconsin, the Investment Board specifically. . .subscribes to the philosophy that money is a free-flowing object of trade that ignores political boundaries, and that attempts to promote local or regional business through bank de-

posits is to little avail. We tend to feel that generally such deposits are merely invested by the receiving bank in that form of investment which will realize to that bank the greatest income.[34]

In other words, many investment officials do not accept the economic development argument since local government funds will be used wherever the bank can obtain the highest rate of return—usually not in the local economy unless it is expanding rapidly. Furthermore, a number of States require that banks must put up collateral as security for state deposits. For instance, in Kentucky; banks must post government securities worth 110 percent of the uninsured portion of the deposit. Consequently, the result of these "linked deposits" in Kentucky is that state deposits of public funds in commercial banks may reduce the amount available to promote economic expansion. Recently, South Dakota dropped the collateral requirements on state deposits from 100 percent to 5 percent potentially "freeing up" an estimated $180 million in South Dakota banks for other investments and loans.

The local economy and town residents, in fact, may benefit precisely because local funds are temporarily withdrawn from local banks in order to obtain a better interest rate elsewhere, such as through investments in the State's local government pooled investment fund.

From the standpoint of being able to engage banks that can provide the necessary services, a State's largest banks probably will bid to become the state working bank. Since the size of state government and the size of banks are both somewhat related to population, it seems likely that within each State there are banks that could handle the State's business. The banks in Wisconsin that bid on the state account have total deposits of $1,859,678,000 (First Wisconsin) and $581,525,000 (Marshall & Ilsley). This makes them the 48th and 161st largest banks in the country, suggesting that banks of varying size can handle the state account.[35]

While Wisconsin uses only one bank, it would be possible, if slightly more difficult, to use more than one working bank. For example, South Dakota uses two banks and alternates each month. A thorough analysis of the services required and volume of transactions within various state accounts would reveal the complexity involved.

In branch banking States, it might even be easier to implement the state working bank concept since transactions could be made throughout the State with immediate accounting. Collections and cash disbursements would occur more rapidly.

VI. TRANSFERRING THE WISCONSIN PROGRAM

Some innovative state government programs are not applicable to many other States. This one is. It is not associated with size or composition of population, rural/urban considerations, size of State, geography, or the State's fiscal condition. All States collect large amounts of money and expend large amounts of money; therefore they have an enormous cash flow. All States have significant amounts of cash that are not needed for payments on any particular day and which, therefore, could be earning interest.

The review of the Wisconsin investment program suggests that the administrative factors are probably less important than the political ones in precluding the transfer of this comprehensive investment program from one State to another. The two groups most adversely affected appear to be bankers and existing boards, agencies, or councils which are responsible for investing various public funds. The latter group simply will not want to have this important investment responsibility transferred from it to a centralized investment board. The reasons are easily deduced and don't require expansion here. Bankers naturally will not like losing the earnings from the deposits of the State. The combination of establishing a state working bank, investing the check float, creating a local government investment pool, and investing idle cash balances are all programs that result in greater earnings for government at the expense of banks. In the case of both centralized banking and centralized investing the benefits to government can easily be measured.

Opposition may also come from the state treasurer since a comprehensive investment program probably will mean the treasurer's loss of some control of these funds. In Wisconsin, for example, the Department of Administration, not the treasurer, operates the computer system and performs the data processing and accounting. The investment board and staff make all the investment decisions.

Legal Issues

State investment policies are influenced by the institutional setting in which investment policy is developed and by the philosophy and investment goals of various policymakers, but all of these factors are circumscribed by the constitutional, statutory, and administrative guidelines of the individual States.

In numerous States, the laws are silent on many matters affecting the development of a comprehensive investment program. Such was the case in Wisconsin and interpretations of the statutes generally have been strict in findings that necessitate specific statutory provisions authorizing board activities—the municipal investment pool, the investment of float, expanding the types of instruments that can be used for investment purposes, and the use of a custodian bank in New York City to physically hold and transfer securities.

There are other instances where the statutes limit the number and types of securities which may be held in the portfolio, the time periods an investment may be held, or the amount of treasury balances that may be invested. The use of banks as holding institutions for treasury balances when the money is not invested may also be subject to statutory limitation.

Equally as important as the statutes or administrative guidelines are the administrative procedures and policies (sometimes spelled out in law) that greatly affect the potential for cash management. Wisconsin has a system of centralized cash disbursement; rapid and centralized collections through lock boxes; one bank account; regulations requiring agencies to transfer funds immediately to the treasury; a centralized uniform accounting system, and a sophisticated, centralized, computer system. This centralized management capacity is lodged in a Department of Administration which has considerable authority over management systems and reports as well as budgeting and personnel. These factors certainly facilitate the development of a comprehensive state investment program. As the Wisconsin case shows, developing an extensive investment program can occur in stages with an investment board, followed by a working bank(s), and sophisticated accounting and computer systems, flexibility in investment instruments, and a custodian bank.

Another major component in the present program is competent staff to manage over $2 billion in assets. However, the market for investment professionals is a national one, so it should not be difficult to attract personnel if reasonably competitive salaries are offered. It has been suggested that many state capitals offer pleasant living environments that many prospective employees would find desirable.

An equally important issue is whether outside consultants should manage state investments or whether this important activity should be conducted by state employees. While States may wish to divide investment operations between government and nongovernment employees for a period of time to determine which group achieves greater success, several items suggest that in-house investment may be the preferable course. First, responsibility for state investment operations should be assumed by a state official who can be rewarded or disciplined based on performance. With delegation of this responsibility to an outside firm, there is less control of personnel, and little redress for poor investment performance except dismissal of the firm. Secondly, if state officials invest state funds, they are investing some of their own retirement and tax funds, a procedure which is different than investing someone else's funds. Thirdly, and perhaps most importantly, in-house investment salary costs (for an equivalent level of service) will nearly always be significantly less than private firms' salaries. If this differential in salaries could be offset by higher investment returns from private consulting firms, there would be no problem. Private consulting services, however, have not consistently produced better investment yields than state investment officials. Finally, in-house investing has no administrative marketing or advertising expense.

In sum, if the political obstacles can be overcome and translated into satisfactory legislation, then any State can begin developing the computer and accounting programs and banking relationship needed to pursue an efficient investment program. The State of Wisconsin appears to be managing its cash flow in such a way as to permit maximum investment opportunity. There are no idle cash balances in Wisconsin, only a compensating balance to pay for bank services. There are very few unutilized or unauthorized investment channels.

In conclusion, the modifications described in this report, almost always mandated by specific statute, have resulted in an investment process in Wisconsin that can serve as a model for other state officials in evaluating their investment practices.

FOOTNOTES

1. Derived from data presented in State of Wisconsin Investment Board

1. Derived from data presented in State of Wisconsin Investment Board *Annual Report* for fiscal year ending June 30, 1975, p. 6.

2. *Annual Report*, p. 8.

3. The Legislative Audit Bureau reports that some state departments have a few small working or contingent checking accounts which are restricted for specific payments.

4. Interdepartmental memo to Pat Hays, Bureau of Budget and Planning, from Peter J. Nelson, Assistant State Treasurer, November 28, 1975.

5. Interdepartmental memo to Pat Hays from Ken Engle, dated December 11, 1973.

6. Investment Board, "Manual of Functions, Goals, Policies, and Procedures," October 15, 1974.

7. Both amounts represent increases provided in 1975 Assembly Bill 222, Sections 256 and 257, respectively.

8. The investment board addresses the social responsibility issue in its *Annual Report* for fiscal year ending June 30, 1975, pp. 19-20.

9. See State of Wisconsin Investment Board, "Manual of Functions, Goals, Policies, and Procedures," October 15, 1974.

10. A number of restrictions have been placed on the private financial transactions of board employees to prevent unethical behavior. No employee, including support personnel, may purchase a new stock or bond offering until it has traded on one of the financial markets. In addition, a board employee cannot buy issues of a company at the same time as the board is adding the issue to its portfolio unless the employee can demonstrate a long-term continuous pattern of purchasing the specific issue. Furthermore, each investment director must file with the executive director a quarterly report listing all equity transactions. Finally, all board employees' federal tax returns must be submitted with the Wisconsin state tax return, and state returns are audited annually.

11. *Annual Report*, p. 13.

12. *Annual Report*, p. 18.

13. "Manual of Functions, Goals, Policies, and Procedures," page 11. It is also policy of the board that "no investment shall be made in stocks of companies which sell as a substantial product line tobacco, liquor, or gambling."

14. Interview with James Severance, May 14, 1976.

15. See "Background and Operations of the Private Placement Division," a paper prepared by Robert Zobel, Investment Director for Private Placements.

16. By policy of the board, no private placements are made in tobacco and alcohol firms or in real estate investment trusts. Few placements have been made in the insurance, finance, and medical fields because of limited staff experience with those areas. Normally preference will be given to loans which generate new jobs through capital expansion if the return is nearly equivalent to other loan applications. No distinctions are made according to characteristics of either the owner or company product line except those noted above.

17. Nor may the placements division entirely own a firm, a policy adopted by the board's trustees. Trustees, however, will permit the division director to sit on boards of directors of various companies. As the largest lender to many smaller firms, it would be appropriate for the investment board to be given a board seat. The current division director has decided not to become a member of any boards because of time constraints.

18. See the 1975 *Annual Report*, pages 9, 10.

19. It is understood that much of this section of Wisconsin law was derived from New York Statutes (Chapter 260, Section 34).

20. The 9.02 percent return on an average daily balance in fiscal 1974 of $662 million earned $5.9 million for the State. In fiscal 1975, $54 million was generated.

21. According to investment agency officials, Wisconsin is one of a few States that uses the reverse repurchase agreement. The South Dakota Investment Council, also a sophisticated state investment agency, has arranged double-reverse repurchase agreements. In contrast to other state governments, the investment board normally does not invest heavily in bank certificates of deposit. Certificates of deposit (CD's) limit investment flexibility because their rates are established for a given time period, thereby preventing investment officials from taking advantage of fluctuating interest rates on other investments. Also, because CD's are not collateralized, CD's are not easily transferred in the national market.

22. Readers should note that the board's tax-exempt status is not the primary reason for its lower administrative expenses. In Table 2 the asset/expense comparison was computed with taxes excluded.

23. The Wisconsin legislation was modeled after a 1973 local government investment program enacted in Oregon. In Oregon the program was available at first only to county governments and larger cities. Presently, the majority of local governments in Oregon are participating in the program, and the level of local funds has expanded from $100 million to over $400 million.

24. The investment board has not yet established criteria (such as minimum times for investments, types of investments, and restrictions on number of purchases) for the trust fund.

25. Memo from Peter Nelson, Office of the Wisconsin State Treasurer, July 1976.

26. The Department of Administration anticipates that a monthly letter will be distributed to local officials whose cities have funds in the pooled fund. However, it is unlikely that specific investments will be identified.

27. In South Dakota, for example, state funds are rotated each month between two banks, and a South Dakota official estimated that this costs the State one day's interest on $5 million each month—or over $8,000 per year (assuming a 5 percent interest rate and a 360-day year).

28. From 1958 to 1964 the state working bank was First Wisconsin National Bank of Milwaukee; 1964 to 1976 the Marshall & Ilsley Bank (Milwaukee); and in 1976 First Wisconsin is the state working bank. Only these two banks bid on the state account although it has been suggested five or six Wisconsin banks are large enough to handle the State's account.

29. These volume figures are reported in an investment board staff memo to the trustees dated June 17, 1975. The number of deposit items was provided by Peter Nelson, Office of the Treasurer.

30. Washington State adopted a lock box procedure for all state tax remittances in mid-1975. At that time, the Department of Revenue anticipated a reduction in collection costs of $60,000 annually and increased earnings of over $340,000 a year based on additional investment through quicker tax collection. The bank involved handles the deposits without charging the State a fee.

31. Taken from a 10-page memorandum (plus appendices) prepared by the State of Wisconsin Investment Board entitled "Specifications for Proposals to be the State Working Bank," dated October 15, 1975.

32. Memo to trustees from the staff's State Working Bank Committee, dated June 17, 1975.

33. Letter from Charles P. Smith, Wisconsin State Treasurer, to Jack Kiley, Administrative Assistant to the State Treasurer of Washington, dated July 19, 1972.

34. Wisconsin State Treasurer Charles P. Smith, letter to Jack Kiley.

35. Based on information compiled by the *American Banker*, 525 West 42nd Street, New York City. Data are for June 30, 1975.

APPENDICES

	Subject	*Page*
A.	Legislation Creating Local Government Investment Funds	27-28
B.	Proposal Form to be State Working Bank	29-31

STATE OF WISCONSIN

1975 Senate Bill 788 — Date published*: February 20, 1976

CHAPTER 164 , LAWS OF 1975

AN ACT to amend 20.906 (1) and (3), 34.01 (intro.), (1) and (8) (a), 59.75 (1) and 66.04 (2); and to create 16.53 (10) and (11), 20.002 (11), 20.855 (8), 20.906 (6), 25.17 (1) (jg) and (jr), 25.50, 25.55 and 59.74 (2) of the statutes, relating to state treasury cash flow management, establishing a local government pooled-investment fund and a local government trust-investment fund and granting rule-making authority.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

SECTION 1. 16.53 (10) and (11) of the statutes are created to read:

16.53 (10) PRIORITY OF CLAIMS. If, between the effective date of this act (1975) and 30 days after the publication of the budget adopted for the 1977-79 fiscal biennium, an emergency arises which requires the department to draw vouchers for payments which will be in excess of available funds in any state fund, the secretary, in consultation with the state treasurer and the joint committee on finance, may prorate and establish priority schedules for all payments, including those payments for which a specific payment date is provided by statute. The secretary shall draw all vouchers according to the following preference. All direct or indirect payments of principal or interest on state bonds and notes have first priority and may not be prorated or reduced under this subsection. All state employe payrolls shall have 2nd priority. All payments to local units of government which are required by statute to be made on a specific date and all aid payments to individuals have 3rd priority. All remaining payments have 4th priority. The secretary shall maintain records of all claims prorated under this subsection and shall provide written notice to the state treasurer when a potential cash flow emergency is anticipated.

(11) INTEREST ON PRORATED PAYMENTS. Payments prorated under sub. (10) which are payable to local units of government shall earn interest on the daily unpaid balance at the rates of interest earned by the state investment fund during the calendar quarter in which the proration occurred. The interest payments under this subsection shall be credited to the respective local units of government at the end of the quarter in which the proration occurred.

SECTION 2. 20.002 (11) of the statutes is created to read:

20.002 (11) TEMPORARY REALLOCATION OF SURPLUS GENERAL FUND APPROPRIATIONS. All appropriations and special accounts within the general fund may be made temporarily available for the purpose of allowing encumbrances or financing expenditures of other general fund activities which do not have sufficient funds in their account but have accounts receivable balances. The secretary of administration shall determine the composition and allowability of the accounts receivable balances for this purpose and shall specifically approve the use of surplus general funds for use by specified activities or programs. The secretary may assess a special interest charge against the programs or activities utilizing surplus funds under this subsection in amounts not to exceed the daily interest earnings rate of the state investment fund during the period of transfer of surplus funds to other accounts or programs.

SECTION 3. 20.855 (8) of the statutes is created to read:

20.855 (8) PAYMENTS TO LOCAL UNITS OF GOVERNMENT. (a) *Interest on prorated payments.* A sum sufficient to pay interest on payments to local units of government under s. 16.53 (11).

SECTION 4. 20.906 (1) and (3) of the statutes are amended to read:

.....

*Section 991.06, Wisconsin Statutes: Laws and acts; time of going into force. "Every law or act which does not expressly prescribe the time it takes effect shall take effect on the day after its publication."

20.906 (1) FREQUENCY OF DEPOSITS. Unless otherwise provided by law, all moneys collected or received by any state agency for or in behalf of the state, or which is required by law to be turned into the state treasury, shall be deposited in or transmitted to the state treasury at least once a week and also ~~whenever~~ at other times as required by the governor or the state treasurer and shall be accompanied by a statement in such form as the treasurer may prescribe showing the amount of such collection, and from whom and for what purpose or on what account the same was received. All moneys paid into the treasury shall be credited to the general purpose revenues of the general fund unless otherwise specifically provided by law.

(3) CONDITIONS PRECEDENT TO RELEASE OF APPROPRIATIONS. All appropriations ~~made by law~~ from state revenues for any state agency, are made on the express conditions that such state agency pays all moneys received by it into the state treasury within one week of receipt or as often as otherwise directed by the governor or state treasurer, and conforms with ss. 16.53 (1) and 20.002, both as to program revenue and general purpose revenue appropriations from all funds. Upon failure to comply with the above conditions, the department of administration shall refuse to draw its warrant, and the state treasurer shall refuse to pay any moneys appropriated to the state agency from state revenues, until compliance is made with said conditions ~~and upon~~. Upon failure or refusal to so comply, after due notice received from the department of administration, any appropriations ~~made by law~~ from state revenues to the state agency shall permanently revert to the fund from which appropriated.

SECTION 5. 20.906 (6) of the statutes is created to read:

20.906 (6) DIRECT DEPOSITS. The governor or the state treasurer may require state agencies making deposits under this section to make direct deposits to a bank designated as a depository by the state investment board, if such a requirement is advantageous or beneficial to this state.

SECTION 6. 25.17 (1) (jg) and (jr) of the statutes are created to read:

25.17 (1) (jg) Local government pooled-investment fund (s. 25.50);

(jr) Local government trust-investment fund (s. 25.55);

SECTION 7. 25.50 and 25.55 of the statutes are created to read:

25.50 Local government ~~pooled-investment~~ fund. (1) DEFINITIONS. In this section:

(a) "Board" means the state investment board.

(b) "Fund" means the local government pooled-investment fund.

(c) "Local funds" means funds under the control or in the custody of any local government or local official that are not required to meet current expenditures or demands.

(d) "Local government" means any county, town, village or city in this state.

(e) "Local official" means each officer or employe of a local government who by law or vote of the governing body of the local government is made the custodian of funds.

(2) CREATION. There is established within the state investment fund a local government pooled-investment fund with a separate and identifiable account within the fund for each local government.

(3) LOCAL GOVERNMENTS AUTHORIZED TO PLACE FUNDS IN POOL. (a) With the consent of the governing body, a local official may transfer local funds to the state treasurer for deposit in the fund.

(b) On the dates specified and to the extent to which they are available, subject to s. 16.53 (10), funds payable to local governments under ss. 70.996 (1) (a), 79.02 (2) (a), 79.03 (1), 79.04 (1), (2) (a) and (3), 79.05 (2), 79.055, 79.06, 79.08, 79.10 (1) and (3) and 79.17 (1) and (3) shall be considered local funds and, pursuant to the instructions of local officials, may be paid into the separate accounts of all local governments established in the local government pooled-investment fund and, pursuant to the instructions of local officials, to the extent to which they are available, be disbursed or invested.

(4) PERIOD OF INVESTMENTS, WITHDRAWAL OF FUNDS. Subject to the right of the local government to specify the period in which its funds may be held in the fund, the state treasurer shall prescribe the mechanisms and procedures for deposits and withdrawals.

(5) INVESTMENT POLICIES. The investment board shall formulate policies for the investment and reinvestment of moneys in the fund and the acquisition, retention, management and disposition of such investments.

(6) INVESTMENT BOARD TO INVEST, REINVEST POOLED FUNDS. In the amounts available for investment purposes and subject to the policies formulated by the investment board, the investment

board shall invest and reinvest moneys in the fund and acquire, retain, manage, including the exercise of any voting rights, and dispose of investments of the fund.

(7) REIMBURSEMENT OF EXPENSES. The state treasurer shall deduct quarterly a maximum of 0.25% of the amount of income received from the earnings of the fund during the preceding calendar quarter for all actual and necessary expenses incurred by the state in administering the fund.

(8) SEPARATE ACCOUNTS. (a) The department of administration shall keep a separate account for each local government and shall record the individual amounts and the totals of all investments of each local government's moneys in the fund.

(b) The state treasurer shall report monthly to each local official the deposits and withdrawals of the preceding month and any other activity within the account.

25.55 Local ~~government trust-investment fund.~~ (1) There is created a local government trust-investment fund under the jurisdiction and management of the investment board.

(2) Local governments as defined in s. 25.50 (1) (d), may transfer to the state treasurer for deposit in the local government trust-investment fund excess cash for investment by the investment board. Local governments shall specify the term of investment of moneys transferred. The department of administration shall set up a separate account for each local government. The investment board shall invest each account separately in investments authorized under s. 25.17 (3) (b), (be) and (dg). All interest accruing as a result of such investment shall be allocated to the account for which it was invested. The investment board shall prescribe rules determining the amounts which may be transferred to this fund for investment and the procedures to be followed for making deposits and withdrawals.

(3) Administrative expenses allocated to the operation of this fund shall be deducted from interest earned by the fund in an amount not to exceed 0.25% per quarter of the interest earned by the separate accounts in the fund.

SECTION 8. 34.01 (intro.), (1) and (8) (a) of the statutes are amended to read:

34.01 Definitions. (intro.) ~~As used in~~ In this chapter:

(1) "Public deposit" ~~shall mean~~ means moneys deposited by the state or any county, city, village, town, drainage district, power district, school district, sewer district, or any commission, committee, board or officer of any governmental subdivision of the state, or any court of this state, in any state bank, savings and trust company, mutual savings bank, or national bank in this state or in the local government pooled-investment fund or the local government trust-investment fund, including private funds held in trust by a public officer ~~for persons, corporations or associations of individuals~~.

(8) (a) "Inactive deposits ~~shall mean~~ means public deposits which have been deposited subject to the bank's rules and regulations relative to time accounts and the investment board's rules relative to amounts invested in the local government trust-investment fund.

SECTION 9. 59.74 (2) of the statutes is created to read:

59.74 (2) In addition to the depositories specified in sub. (1), the local government pooled-investment fund and the local government trust-investment fund may be designated as depositories for investment purposes.

SECTION 10. 59.75 (1) of the statutes is amended to read:

59.75 (1) Whenever any county board ~~shall have~~ has designated a county depository or ~~depositories in accordance with the provisions of section~~ under s. 59.74 the county treasurer shall deposit therein as soon as received all funds that come to ~~his~~ the treasurer's hands in that capacity in excess of the sum ~~he~~ the treasurer is authorized by ~~such~~ the board to retain ~~and any~~. Any sum so on deposit shall be deemed to be in the county treasury, and ~~such~~ the treasurer shall not be liable for any loss thereon resulting from the failure or default of such depository~~, provided, that the~~. The county board or a committee thereof designated by it may invest any funds that come into ~~his~~ the county treasurer's hands in excess of the sum ~~he~~ the treasurer is authorized by the county board to retain for immediate use, in the name of the county in the local government pooled-investment fund, in the local government trust-investment fund or in ~~interest bearing~~ interest-bearing bonds of the United States, or of any county or municipality in the state~~, and such~~. The board or committee may sell such securities when deemed advisable.

SECTION 11. 86.04 (2) of the statutes is amended to read:

86.04 (2) INVESTMENTS. Any county, city, village, town, school district, drainage district, vocational, technical and adult education district, or other governing board as defined by s. 34.01 (4) may invest any of its funds, not immediately needed, in time deposits in any bank, savings bank or trust company which is authorized to transact business in this state, such time deposits maturing in not more than one year, or in bonds or securities issued or guaranteed as to principal and interest of the U.S. government, or of a commission, board or other instrumentality of the U.S. government, or bonds or securities of any county, city, drainage district, vocational, technical and adult education district, village, town or school district of this state, or, in the case of a town, city or village, in any bonds or securities issued under the authority of such municipality, whether the same create a general municipality liability or a liability of the property owners of such municipality for special improvements ~~made thereon~~, and may sell or hypothecate the same. Any county, city, village or town may also invest surplus funds in the local government pooled-investment fund or the local government trust-investment fund. Cemetery perpetual care funds, pension funds under s. 62.13 (9) or (10), or endowment funds including gifts where the principal is to be kept intact may also be invested under ch. 881.

SECTION 12. **Program responsibilities.** (1) In the list of program responsibilities enumerated for the office of the state treasurer in section 14.561 of the statutes, insert references to sections "25.50" and "25.55".

(2) In the list of program responsibilities enumerated for the department of administration in section 15.101 (intro.) of the statutes, insert reference to sections "25.50" and "25.55".

(3) In the list of program responsibilities enumerated for the investment board in section 15.761 of the statutes, insert reference to sections "25.50" and "25.55".

SECTION 13. **Cash flow study.** The department of administration is directed to prepare a report on the present statutory and administrative structure and procedure for the payment of local assistance funds to counties, towns, villages, cities and school districts. The report, after review by a 7-member committee consisting of the state treasurer, representatives of the departments of administration and public instruction, and designees appointed by the league of Wisconsin municipalities, county boards association, Wisconsin towns association and the Wisconsin school boards association, shall be submitted to the governor and the legislature no later than February 1, 1977, and shall include but not be limited to:

(1) The identification of major local assistance payments.

(2) The identification of payment schedules either required by statute or established by administrative action.

(3) An assessment of the impact of such payments and schedules on fund balances and the operation and management of the state budget.

(4) The criteria on the basis of which the current payment schedules were established.

(5) The impact of current payment schedules on the operation of local and state government.

(6) Recommendations, if deemed appropriate, for changes in the statutes or in administrative procedures concerning such payments and schedules.

PROPOSAL FORM TO BE
THE STATE OF WISCONSIN WORKING BANK

To: State of Wisconsin Investment Board

The following constitutes our proposal to provide the State of Wisconsin's banking business requirements for the period commencing July 1, 1976, and terminable on our part by giving one year's notice.

It is understood that, should our proposal be accepted, we will be designated as (1) State Working Bank, and (2) a State depository bank pursuant to the provisions of s. 25.17 (61), Wisconsin Statutes.

It is further understood that the State of Wisconsin Investment Board, in its sole discretion, may reject this or any other proposal.

In addition, this bank agrees that the Investment Board may exclude any specific service or element thereof in any contract which may result from this proposal.

OFFER

This bank offers to provide all of the services outlined in that certain set of specifications dated October 15, 1975 and labeled "Specifications for Proposals to be the State Working Bank."

This bank agrees that it will maintain dormant balances, as directed, in designated banks for the benefit of the state. In consideration, an identical amount shall be subtracted from the net collected balance before applying the compensating balance formula outlined on page 6 of this proposal.

This bank agrees that it will establish and maintain a $10 million open line of credit and allow draws against such line by the Wisconsin Building Commission on the condition that any draw against the line of credit shall bear interest at the rate of

_____%

of the bank's prime rate as posted from time to time.

TIME SCHEDULE UNDER WHICH
THIS BANK WILL CREDIT THE STATE TREASURER'S
ACCOUNT WITH COLLECTED FUNDS

This bank agrees that all deposits delivered during any working day to it or its Madison Agent, if any, will be credited to the State Treasurer's account as though they had been delivered to the Milwaukee Branch of the Federal Reserve Bank on that same day.

In addition this bank agrees that it will credit the State Treasurer's account with collected funds earlier than the Milwaukee office schedule on the following:

Ite	When Credited (Same day, 1 day deferred)

This bank will provide the following system for check retrieval and copying for the Treasurer's Office and our time table for making it available is as follows:

1. System Description

2. Time Table

COMPENSATION

This bank agrees to provide the services as specified for the following direct (hard dollar) charge per item:

Item	Dollars per item
1. Deposit Items	
(a) Per local deposit item	$ _____
(b) Per transit deposit item	$ _____
(c) Per N.S.F. item	$ _____
(d) Blank Deposit tickets - per 1000	$ _____
(e) Coupon Interest Collection Service per coupon	$ _____
(f) Wisconsin G.O. Bond Coupons per presentation	$ _____
2. Ledger Items	
(a) Deposit ticket or credit memo - each	$ _____
(b) Per check drawn on us	$ _____
3. Other Checking Services	
(a) Blank Checks	
(1) Series A,C,D,E,F,H, and R per 1000 checks	$ _____
(2) Series B - per 1000 checks	$ _____
(3) Series G,I, and X - per 1000 checks	$ _____
(b) Reconciliation - per item	$ _____
(c) Storage boxes - each	$ _____
(d) Microfilming checks for Treasurer's use - per check	$ _____
(e) Microfiche index for Treasurer's use per microfiche	$ _____
(f) Microfiche images of computer printouts - per microfiche	$ _____

4. Lockbox Services

(a) Withholding

(1) Employers deposit report form - each $ _____

(2) Microfilming report form - each $ _____

(b) Motor and Special fuel

(1) Motor fuel report form - each $ _____

(2) Special fuel report form - each $ _____

(3) Microfilming report form - each $ _____

5. Wire Transfer Services

(a) Federal Wire - each $ _____

(b) Bank Wire - each $ _____

(c) Telephone advice - each $ _____

6. Securities Clearance Services

(a) Transaction - each $ _____

7. Government Bond Services

(a) per Bond $ _____

8. Transportation Services

(a) Cash pick-up from State Treasurer's Office, Madison - per trip $ _____

(b) Deposit pick-up from Department of Revenue, Milwaukee - per trip $ _____

(c) Pick-up and delivery of various items (checks, deposits, cancelled check, microfilm, etc., no cash) round trip from Working Bank to Madison offices of State Treasurer, Department of Revenue, and Department of Transportation per round trip $ _____

(d) Special Courier runs

(1) Federal Reserve Bank, Chicago - per trip $ _____

(2) Chicago Loop Banks - per trip $ _____

COMPENSATING BALANCES
IN LIEU OF DIRECT CHARGE

In lieu of a direct charge for the services referred to above, this bank agrees that it may be compensated by collected balances in the State Treasurer's account.

The bank agrees to credit as payment for such charges an amount equal to one day's interest (computed on a 360-day year) using an interest rate equal to

_____%

of the monthly average of the 90 (91-92) day U.S. Treasury Bill rate* on each dollar of collected balances (less reserve requirements of the Federal Reserve Bank) left on hand each day during the month in the State's account.

*as reported in the Moodys Bond Survey

In the event that the application of this formula produces a credit in excess of monthly charges, the bank agrees to apply such excess as credit towards the following month's charges. Conversely, the State will make up any deficit by increasing balances the following month.

Dated this ____ day of _____, 1975.

Name of Bank: _____

By: _____

Title: _____

Attest: _____

Title: _____

Exhibit II

MEMBERS OF THE STATE BOARD OF INVESTMENT

HON. WENDELL R. ANDERSON, GOVERNOR
HON. ROBERT W. MATTSON, STATE AUDITOR
HON. JIM LORD, STATE TREASURER
HON. JOAN ANDERSON GROWE, SECRETARY OF STATE
HON. WARREN SPANNAUS, ATTORNEY GENERAL

THE ADVISORY COMMITTEE ON STATE TRUST FUNDS

Active Members

Franklin Briese, *Chairman of the Board (retired), Minnesota Mutual Life Insurance Company, St. Paul*
Robert S. Davis, *C.F.A., Executive Vice President of Finance, The St. Paul Companies, Inc.*
Gaylord W. Glarner, *Senior Vice President, First Trust Company, St. Paul*
James C. Harris, *Vice Chairman of the Board of Directors, Northwestern National Bank of Minneapolis*
John M. Harris, *Investment Counsel, Northern City National Bank, Duluth*
John H. Herrell, *Vice Chairman of Investment Committee, Mayo Foundation, Rochester*
Donald E. Jondahl, *Executive Vice President, Finance, Northwestern National Life Insurance Company, Minneapolis*
Laurence R. Lunden, *former Vice President, Business Administration, University of Minnesota*
Dale R. Olseth, *President, Medtronic, Inc.*
Norman Terwilliger, *Investment Counsel to the Minneapolis Teachers Retirement Association*

Members Emeriti

Hermon J. Arnott, *retired Chairman of the Board, Farmers and Mechanics Savings Bank of Minneapolis*
Francis Hassing, *former Investment Counsel to the Board of Regents of the University of Minnesota*
Maxwell B. Hight, *Section of Administration, Mayo Foundation, Rochester*

INVESTMENT DEPARTMENT PERSONNEL

Robert E. Blixt, *B.A., M.S., J.D., C.F.A.*
Executive Secretary

A. Arthur Kaese, *B.A., C.F.A.*
Assistant Executive Secretary

Betty J. Eskuri
Portfolio Coordinator

Margaret I. Conley
Administrative Assistant

Judy A. Kaufman
Secretarial Assistant

* * * * * * * * * * * *

Portfolio Managers and Financial Analysts

Money Market Securities
Grant A. Feldman, Jr., *B.S.*
Howard J. Bicker, *B.A.*

Equity Securities
Miles J. Cohen, *B.B.A., J.D.*
C. Robert Parsons, *B.S.*
Michael L. Hudson, *B.S., M.B.A., C.F.A.*
Roger W. Henry, *B.A.*
Peter G. Robb, *B.A.*

Fixed-Income Securities
N. Robert Barman, *B.C.S., M.A.*
Arthur M. Blauzda, *B.S., M.B.A.*

Secretarial & Investment Assistants

Peggy Johnson
Dedra L. Johnson
Rita Rivard
Becky Thoma

* * * * * * * * * * * *

Roger A. Derksen, *B.B.A., C.F.A.*
Investment Operations Director & Financial Analyst

Meg J. Arneberg, *B.A.*
Computer-Investment Assistant

James E. Oss, *B.A.*
Transaction Supervisor

Harold Syverson, *B.A.*
Securities Trader

Accountants & Statistical Assistants

Thomas L. Delmont, *B.A.*
Alice P. Chermak
Audrey I. Moore

MEMBERS OF BOARD:
GOVERNOR WENDELL R. ANDERSON
STATE AUDITOR ROBERT W. MATTSON
STATE TREASURER JIM LORD
SECRETARY OF STATE JOAN ANDERSON GROWE
ATTORNEY GENERAL WARREN SPANNAUS

ROBERT E. BLIXT
EXECUTIVE SECRETARY

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT

Room 105, MEA Building
55 Sherburne Avenue
Saint Paul 55155

August 20, 1976

Members of the Legislature of the State of Minnesota:

The Investment Staff of the State of Minnesota is most appreciative of the policies and procedures approved by the State Board of Investment and Advisory Committee on State Trust Funds during the past few years. The results, as detailed in this report, have been very satisfactory by any standard – particularly those which may be considered appropriate for public funds.

Short-term money-market investments, retirement accounts, trust funds and other investment portfolios are often considered to be staid and unimaginative when handled by committees representing the general public. Yet, the Investment Staff has been most impressed and enthusiastic about the encouragement, support and ideas put forth by the Advisory Committee and Board members. The success of the portfolio in calendar 1975 and early 1976 has been due to the support received in implementing an aggressive purchase program in late 1974 and 1975 – at the time many investment experts were all too apprehensive regarding the future of the nation and its economy.

The period covered by this report includes the fiscal year from July 1, 1975 through June 30, 1976. Previous reports are available since the year 1960.

Although there were no significant changes in Minnesota's investment laws during the 1975 and 1976 legislative sessions, various inter-department procedural changes and the use of new types of securities have resulted in an improved investment program – one which, in our opinion, is more pertinent to the needs of the constituents.

One feature of Minnesota statutes which is sometimes misunderstood by legislators and retirement fund beneficiaries is that "market valuations" which determine retirement fund benefits and values in the Variable Annuity Fund and the Minnesota Adjustable Fixed Benefit Fund are based on bi-monthly security prices averaged over a two-year period. Therefore, the results of these two funds for fiscal 1976 will still be dependent, to some degree, on the low prices prevailing on both stocks and bonds in late calendar 1974. Actually, the State accounts were much benefited by this decline in securities values. We were able to increase our holdings significantly at substantially lower prices. Yet, because these prices are still included in the statistical base from which fiscal 1976 year-end results are computed, the investment progress of these two funds appears comparatively minimal for this past fiscal year. It must be emphasized, however, that the computations and ratios already effective for this fiscal year – that ending on June 30, 1977 – indicate substantial future gains for both the Variable Annuity Fund and the Minnesota Adjustable Fixed Benefit Fund.

The Investment Staff is particularly appreciative of the work of the Advisory Committee on State Trust Funds. This group was formed in 1961, at the time the statutes first authorized equity investments in Minnesota's retirement funds. Most of the members originally appointed still serve on the Committee. Their investment expertise, based on their responsibilities and work as leaders of Minnesota's investment community is enhanced by this long period of service and their knowledge of retirement legislation and investment problems during the past 15 years. It is to be noted that, despite the unquestioned expertise of these members, their service is offered without compensation. Every member of this Committee is, or has been, a portfolio manager or research director of a major Minnesota institution.

The accounts supervised by the State Board of Investment are divided into several groups, each governed by individual statutes and managed under different policies. The fund groupings, together with their approximate book valuations as of June 30, 1976, are as follows:

Invested Treasurer's Cash Fund, $580.9 million. This fund includes all tax receipts. Since 1969, prime quality corporate notes have been eligible for use in this account, in addition to U.S. Treasury and agency obligations maturing within three years.

Highway Funds, $216.9 million. These accounts include U.S. Treasury obligations, debt instruments issued by U.S. government agencies and short-term corporate notes due within 270 days of the time of purchase. The moneys are used for the building and maintenance of highways, roads and streets throughout the state.

Miscellaneous Welfare, Departmental and Temporary Funds, $167.4 million. These funds are invested according to the terms of particular statutes or applicable policies, primarily in U.S. Treasury securities. The major portion of these accounts consists of proceeds from bond sales; the moneys will be used within a comparatively short period of time for state building needs. Also included are endowment funds and trust accounts held for various institutions. During the past two fiscal years, these funds have been increased through the investment of bond proceeds from securities issued by the Minnesota Housing Finance Agency. This investment total varies according to the needs of the agency in providing funds to Minnesota's home buyers.

Minnesota Adjustable Fixed Benefit Fund, $648.8 million. This account, administered by the State Board of Investment, may include a maximum of 50% in stocks with the remainder in debt securities. Retirement benefits are paid to all retired employees from the principal and earnings of this fund. A two-year average "total return" from this fund, in excess of the 5% actuarial assumption, has been used to augment pension benefits. Earnings and market appreciation during the early 1970's resulted in an increase in the pensions paid by the various participating retirement funds of from 2% to 4% at the beginning of the 1972 calendar year; increases of 4½% to 5½% were paid at the beginning of the 1973 calendar year. The Legislature provided for an additional 25% increase which was paid in two installments – in July 1973 and January 1974. This adjustment was made at the time that the statutes applicable to the retirement systems of Minnesota were modified to provide benefits based on salaries paid during the "five-high years" of employment. Because of this complete statutory revision, the reserves accumulated during the early 1970's were used to provide very substantial increases for those previously retired. Despite the lower stock and bond markets experienced in 1973-1975, recent portfolio results indicate additional pension increases beginning in calendar 1978 or 1979.

Basic Retirement Funds, $1,035.7 million. Six state-managed retirement funds, invested separately for employee groups, include U.S. Treasury, municipal and other governmental securities, U.S. government-guaranteed obligations, corporate bonds, short-term corporate notes, and common stocks.

Supplemental Retirement Fund, $62.6 million. This fund was established in 1967 for employees of the State College Board and State Junior College Board. The fund consists of three accounts, one of which may be invested up to 100% in equities, emphasizing potential growth with the accompanying market risks. The second includes long-term bonds and stocks oriented toward current income. The third – the Fixed Return Account – was initiated on July 1, 1974, and includes only bond investments; it provides an interest yield over a period of time commensurate with the average life and call protection inherent in the bonds purchased. Legislatures since 1969 have made one or more of these accounts available for use by police and fire fighter relief associations throughout the state, various county employees, those members of the state service who are "unclassified" and do not have the benefits of tenure, and state employees who wish to participate in a deferred income plan through which a portion of their salaries may be taxed at the rates in effect at the time of their retirement.

Minnesota Variable Annuity Fund, $33.9 million. This fund was established by the 1969 Legislature and was made effective in early summer 1970. The account now includes a diversified list of common stocks, some long-term debt instruments, and reserves in the form of short-term fixed-income securities. The participants are teachers who chose this type of program, which provides retirement benefits based on long-term investment performance. Because of the many advantages inherent in the new "five high year" plan, the Variable Annuity may not now be opted by new teachers but is still available to present members of the State's educational system.

Trust Funds, $267.6 million. The Permanent School Fund, invested for the benefit of the school children of Minnesota, includes U.S. Treasury securities and government guaranteed obligations, corporate bonds of long and short maturities, and common stocks. The Internal Improvement Land Fund includes only U.S. Treasury obligations.

Because of the differing investment policies applicable to these funds, a short review of the history and needs of the various accounts is provided along with a listing of securities.

INVESTED TREASURER'S CASH FUND

This pooled fund reached new highs in size and activity during the past three fiscal years. It represents most tax receipts and other State revenues. In late summer 1974, it was evident that tax accumulations were somewhat greater than the amounts allocated for expenditures during fiscal 1975. After this "surplus" was identified, the State's administration, the Legislature and the Investment Board took action appropriate to increase the earnings from the fund and, yet, maintained the required liquidity due to the economic uncertainties and the anticipated needs of the State during the next biennium.

Because it was evident that a portion of this "surplus" would remain in the account until fiscal 1976 and 1977, securities in an amount exceeding $100 million were extended in maturity from a few days to a range of from nine months to three years during early autumn 1974. This extension, at a time when interest rates were higher than prevalent for many years, produced significant added income to the account. The 1976 fiscal year-end total investment of $580.9 million is the second highest in Minnesota's history, it was exceeded only by the $607.8 million invested at 1975 fiscal year-end.

The Investment Department personnel have been helped by the cooperation and interest of the State Treasurer's office in providing current information – several times per day – regarding the investment needs and possibilities in this fund. The Finance Department, over the past few years, has also led in determining new investment potentials in order to maximize interest earnings for Minnesota State funds.

Interest earnings from this account have fluctuated considerably due to the varying size of the funds invested as well as the wide swings in interest rates applicable to short-term obligations of high quality. Record high earnings of $14.8 million were reached in 1969 – up from only $6.0 million in 1966. The small amounts available for investment in 1972 combined with low rates resulted in earnings of only $4.2 million during that fiscal year. This figure increased to $7.2 million for fiscal 1973, $22.0 million for 1974, and a new high of $37.5 million for fiscal 1975. These earnings declined to $35.0 million for fiscal 1976 because of somewhat lesser fund totals throughout the year and lower short-term interest rates in effect.

Under the terms of 1973 legislation, the Investment Department buys and sells according to oral certification of cash available by the staff of the State Treasurer and the Department of Finance. In recent years, there has been an increase in the use of repurchase agreements and of short-term instruments so that funds may earn money over the shortest of periods – sometimes one day or over a week-end. Statutes require that securities in the Invested Treasurer's Cash account extend no longer than three years in maturity.

THE HIGHWAY FUNDS

The funds held for street, road and highway construction in Minnesota may be invested in bonds eligible for purchase by the Permanent School Fund and commercial paper used in the retirement accounts. At present, these funds own short-term U.S. Treasury and agency securities, repurchase agreements backed by U.S. Treasury or agency obligations, short-term corporate notes, and securities guaranteed by the U.S. government through the Government National Mortgage Association. The Commissioner of Highways certifies the amounts not needed in the immediate future; these sums are invested in maturities approximating the expected disbursement schedule of the highway department. The program includes considerable reinvestment and adjustment of maturity schedules because of the time necessary for planning, purchase of right-of-way, and construction of highways. The amount of highway funds invested fluctuates throughout each fiscal year, they totaled from $151.0 million to $208.5 million during fiscal 1974, from $134.0 million to $168.0 million during fiscal 1975, and from $153.1 million to $216.9 million during fiscal 1976. These accounts show temporary increases after the sale of state highway bonds, until the proceeds are used for construction purposes. The increase in investable moneys during the past fiscal year was due to an increase in the gasoline tax from 7¢ to 9¢ on July 1, 1975, and a revised program of automobile license tax collections so that payments are made at dates throughout the year. Due to these changes in income potential, the Highway Department and the State Board of Investment are reviewing the needs of these funds so as to maximize the income potential from the investment securities.

The earnings from these accounts increased from $1.7 million in fiscal year 1959 to $7.7 million in fiscal 1970, $9.5 million in fiscal 1971, $9.6 million in each of the two fiscal years 1972 and 1973, and $13.8 million in fiscal 1974. Earnings were reduced to $12.5 million in fiscal 1975 and to $11.0 million in fiscal 1976.

The income earned from these highway fund investments benefits the counties and municipalities in Minnesota directly through the County State Aid Highway Fund and the Municipal State Aid Street Fund. Earnings from the Trunk Highway Fund are used for the overall state highway program.

STATE COLLEGES, WELFARE, AND DEPARTMENT OF CORRECTIONS

The State Board of Investment is responsible for the investment of individual and pooled endowment accounts applicable to scholarships and the support of state institutions, certain funds designated for welfare purposes, and patient and inmate accounts in both welfare and correctional institutions. Purchases are limited to U.S. Treasury obligations, except in instances where individual gifts or bequests provide for the use of other investments.

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Schedule I reviews the short-term corporate notes and the U.S. government and agency obligations held by the Invested Treasurer's Cash Fund, the highway funds, and the miscellaneous departmental funds on June 30, 1976. As has been indicated in previous paragraphs, the Investment Department has substantially increased its activity in the use of these short-term debt obligations in order to maximize yields and, thereby, increase the income to the accounts. The Money Market Securities Division of the Investment Department supervised short-term securities totaling over $1.1 billion on June 30, 1976. In addition to those listed on Schedule I, there were substantial short-term investments held by the retirement funds and the Permanent School Fund.

THE MINNESOTA ADJUSTABLE FIXED BENEFIT FUND

The Minnesota Adjustable Fixed Benefit Fund includes the assets representing the reserves from which pensions are paid to individuals who have retired; these recipients are members of various public funds including the six basic retirement funds managed by the State Board of Investment and the fund administered by the Municipal Employees Retirement Board of Minneapolis. There has been a substantial revision in this portfolio during the past five years because of the many different holdings transferred into the account during the 1969-70 fiscal year. Although substantial reserves were accumulated to make possible the continuation of a high level of pensions during years of stock price downturn, these reserves were distributed to retirees during 1974 to compensate partially for the higher pensions now being paid under the "five high year" plan. Because the 1973 and 1974 downturn in the stock market coincided with a higher rate of inflation, there is some impetus to use the increased yield generated through the price appreciation of both bonds and stocks to provide a basis for adjusting pensions as a compensation for inflationary pressures. In this way, the employer group – the state, municipality, county or school board – would face the risks of long term market fluctuations, whereas the individual would receive benefits more dependent upon actual changes in the cost of living. Concern has been expressed, however, that this account would lose its "complete funding" and become less sound from an actuarial standpoint if long-term benefit improvements were based on the cost of living rather than on actual investment performance.

Under the provisions of 1971 legislation, the net return to the Minnesota Adjustable Fixed Benefit Fund was determined on the basis of income and an average of the market-to-cost relationships taken bi-monthly over a two year period. This interpretation of investment results meant that a substantial contribution toward the cost of the increased pensions in the state managed funds was met from this "total return" during the period through 1973; the portion attributable to the Municipal Employees Retirement Board of Minneapolis was used toward higher pensions and increased reserves. The 1974 Legislature established a "new base" below which pensions may not decline. This figure was established at the level of pensions paid during 1974. The 1975 Legislature granted comparatively modest one-time payments to retirement fund participants in lieu of any increased benefit from this fund. In early calendar 1976, the Legislature appropriated a portion of the high earnings accured from the investments in the Invested Treasurer's Cash Fund as a supplement to those retirees who were receiving benefits computed on the basis of legislation in effect prior to the "five-high years" statute. This supplement to pensions in Minnesota – to be granted to members of various municipal and teachers' funds as well as those managed by the State Board of Investment – will tend to aid those retirees not benefiting from recent legislative programs.

Benefits accruing from the market action and net yield have not increased during the past two years for several reasons – including the "two year averaging" on rate of return which still includes the lower valuations prevalent in 1974 and 1975. Other factors include a change in the actuarial assumption applicable in the fund of from 3% to 5%, an allocation of certain moneys to pre-1973 retirees and slight adjustments in some cases in order to pay the full increase in benefits legislated during 1973 and 1974.

Common stocks may comprise up to 50% of this portfolio, with convertible debentures limited to an additional 10%. On June 30, 1976, the percentage committed to common stock investments, on a net original cost basis, amounted to 45.26% of the portfolio, declining from 48.92% on December 1975. During the past six months, there have been substantial portfolio revisions due to the recent increases in stock prices with the accompanying opportunity to balance the sales of less successful stocks with those which had shown substantial gains in price during the past 18 months. This portfolio revision, combined with a consolidation of bond holdings and elimination of securities held in smaller quantities, will continue during the months ahead.

This fund increased in value by $100.6 million during the fiscal year. This sizeable increase is due to the fact that the pensions being paid to present retirees have been raised substantially through recent legislation. The higher value was due to $94.3 million in net contributions and income. An additional upward adjustment of $6.3 million was due to higher market valuations.

THE BASIC RETIREMENT FUNDS

The State Investment Board manages six accumulation retirement accounts which include both employer and employee contributions during the employee's working period; at the time of retirement, the assets are transferred

to the Adjustable Fixed Benefit Fund. Common stocks may total 50% of these accounts. At the time of this writing, equities comprise approximately 46% of each fund on a cost basis, with the remainder invested in debt securities of the U.S. government, its agencies, Canadian governmental units, and United States and Canadian corporations. Common stock commitments totaled nearly 50% of these accounts on a cost basis on December 31, 1975. Since that date, profits have been taken through the sale of many equities, as the Dow Jones Industrial Average approximated the 1000 level. The Department's research personnel and portfolio managers also have suggested a revision in the composition of the equity portfolios so as to include higher holdings of those stocks showing particular promise – with assured earnings and dividends in the years ahead.

The 1969 Legislature made it possible for each fund to include a small portion of unrealized gains in the income portion of the account through a procedure which applies after the market valuations of equities exceed the original cost price by 15% for six consecutive two month periods – or one year. At such a time, an amount equal to 3% of the cost of the equities could be added to the retirement fund for actuarial and accounting purposes. The first such increase occurred on October 31, 1972; this was followed by a second increase on December 31, 1972. Because of the probability that such market increases would not continue, it was decided that each of these increases would be added to the income accounts in three equal installments during three successive fiscal years. The first increase applied during fiscal 1972, 1973 and 1974, while the second increase was applicable in fiscal 1973, 1974 and 1975.

The 1973 Legislature modified the law to provide for such an increase or decrease whenever the market valuation of equities varied from the revised cost figure by 10% for six consecutive two month periods. The market downturn during 1973 and 1974 resulted in the first 3% downward revision on February 28, 1975. A second decrease applied to several of the retirement funds on April 30, 1975. Because the 1973 statute authorized the computation of such yield declines over a five-year period, it is anticipated that the net effect of such calculations will be minimal when computing fund yield performance on a long-term basis.

By early calendar 1975, because of rising stock prices, it was evident that there would be no further downward adjustment in the statutory valuation of equities for an extended period. Schedule III indicates the net yield accruing to the three largest basic retirement funds during the period from 1957 through 1976. During these 19 years, the yield has increased from less than 3% to nearly 6%. Footnote 14, following Schedule III, explains the effect of the statute tying equity valuations to the stock market.

Schedule IV lists the securities held in the three largest basic retirement funds on June 30, 1976. Because of the identical purpose for which these accounts are established, it has been Investment Department policy to use the same securities in each account, whenever funds have been available. A differing flow of new moneys, however, has resulted in varying cost and a somewhat different overall composition of these three accounts. Because of the recent sales of equities, the net original cost of stocks in the three major accounts increased from $392.3 million on June 30, 1975, to $422.6 million on June 30, 1976. The market valuation of these equities showed a greater increase, from $397.2 million to $460.9 million.

The Public Employees Police & Fire Fund was established during the early 1960's in order to provide an investment vehicle for the smaller police and fire fighter organizations throughout the state as well as for larger organizations which chose to participate in this retirement plan. Schedule V includes the fixed-income securities in this account on June 30, 1976 and Schedule VII lists the equity portfolio. This account showed a sizeable increase in value – from $45.3 million to $56.3 million during the past fiscal year. Although nearly $2 million of this change was due to higher stock market valuations, most of the increase was derived from the significantly higher contributions.

The Highway Patrolmen's Retirement Fund resulted from a merger, in 1969, of the State Police Officer's Retirement Association and the Highway Patrolmen's Retirement Association. Because the two previous accounts were quite small and had limited and unpredictable flows of new money, the new merged account appears to be more manageable; this has benefited both groups. Schedule VI includes the fixed-income securities in this account on June 30, 1976 and Schedule VII lists the equity portfolio.

State, municipal and school district bonds comprised over 71.0% of total investments in these retirement funds as recently as the late 1950's; such holdings declined to 0.4% by June 30, 1976. This decline was due to the sale and maturity of bonds as well as the placement of all new money in other types of securities. Because most of the remaining "municipals" consist of odd lots that carry either no rating or a low rating by the services, it is presumed that a large portion of these bonds must be held to maturity. In recent years, the municipal bond dealers and fiscal agents of the Upper Midwest area have been most helpful in aiding the State's sales of these securities.

The Judges Retirement Fund was established in 1974; no permanent investments were purchased until the 1975 fiscal year. Because of statutory limitations, the percentage of funds invested in equities may be increased by only 5% of total investments each year. During the 1976 fiscal period, the fund was subject to a 10% equity limitation. Schedule VIII lists the investments as of June 30, 1976.

THE MINNESOTA SUPPLEMENTAL RETIREMENT FUND

The three accounts of the Minnesota Supplemental Retirement Fund are invested in accordance with three different philosophies in order to meet the individual needs and desires of the participants. The income share account, limited to 50% in common stock, consists primarily of high quality corporate bonds and emphasizes comparatively higher yielding equities of well-known companies. The growth share account, on the other hand, may participate in the equity market up to 100% of total assets and includes stocks of companies offering a low current yield and representing firms which may have significant long-term potential from the standpoint of earnings growth. These stocks tend to fluctuate in price to a far greater extent than those in the income share account. The fixed return account, invested entirely in bonds, is not subject to changes in market fluctuations. The amounts contributed each year into this account, however, will earn varying interest rates depending upon the existing yield structure.

The growth share and income share accounts were established on a unit basis on October 1, 1967, with each unit worth $10.00 on that date; due to a two-for-one split on June 30, 1973, the current units had a net worth of $5.00 on inception date. A summary of the market valuations experienced by the two accounts since the beginning of the program in 1967 is as follows (as adjusted for the two-for-one split):

	Income Share Account		Growth Share Account	
	High	Low	High	Low
Oct. '67 – Dec. '68	$5.52 (Nov. '68)	$4.98 (Oct. '67)	$5.44 (Nov. '68)	$4.52 (Feb. '68)
1969	5.40 (Jan.)	4.99 (Dec.)	5.32 (Oct.)	4.71 (July)
1970	5.69 (Dec.)	4.81 (Jan.)	4.94 (Feb.)	3.73 (June)
1971	6.30 (Dec.)	5.86 (Jan.)	6.21 (Dec.)	5.09 (Jan.)
1972	7.11 (Dec.)	6.36 (Jan.)	7.92 (Dec.)	6.47 (Jan.)
1973	7.15 (Sept.)	6.69 (Nov.)	7.53 (Jan.)	5.29 (Dec.)
1974	6.80 (Feb.)	5.31 (Sept.)	5.35 (Jan.)	3.21 (Sept.)
1975	7.12 (Dec.)	6.26 (Jan.)	5.17 (June)	3.95 (Jan.)
Jan. – June '76	8.00 (June)	6.94 (Jan.)	5.52 (June)	5.28 (May)

Schedule IX lists the assets in the income share account on June 30, 1976. Because of the increase in both equity and bond valuations during the past 18 months, this account has shown particularly favorable market results. The comparative "safety" of this portfolio, due to the type of stock used and the diversification between fixed-income and equity securities, has resulted in its use by most retirement organizations eligible to participate in the Supplemental Retirement Fund. It is anticipated that the results, over a period of years, will never be spectacular, but will tend to be satisfactory from the standpoints of safety, yield and long-term growth.

Schedule X consists of a listing of the securities in the growth share account on June 30, 1976. Under the terms of the Prospectus for the growth share account, it is a policy of the Department to maintain a steady investment in stocks of companies which evidence growth potential. It has also been an established policy to avoid extreme "buy" or "sell" programs which could result in a high cash position for a brief period of time. Such a program can be disastrous if the market makes unanticipated moves. This means that the account is in a reasonably fully invested position at all times and will continue to be subject to significant changes in market values, particularly during periods of stock market increases, as in 1972, and during times of market uncertainty and decline, such as during 1973 and 1974. The upward movement of stock prices in 1975 and 1976 resulted in sizeable increases in market valuations of the growth share account. It is apparent, however, that those stocks which led the market increases during the 1971-73 period may not provide such leadership in future market recoveries. We are now revising the investment policies applicable to this fund to achieve a greater degree of diversification by industry and to include equities representing broad segments of our economy.

The assets in the fixed return account, established on July 1, 1974, are listed in Schedule XI. Unit valuations do not change; they are arbitrarily set at $5.00 per unit. The return from this fund is based entirely upon the rate of interest received from the bonds purchased in the account.

Under the provisions of the applicable statutes, the Investment Department establishes an "indicated rate" of return for the coming fiscal year on July 1. On July 1, 1974, this rate was set at 8.50%. The bonds purchased during the fiscal period provided a yield somewhat higher than that anticipated. The participants – then consisting only of individual retirement funds – received 9.10% on all contributions made during the 1975 fiscal year. During fiscal 1976, the plan was broadened in scope to include iindividuals who wish to participate in a fixed-return investment under various retirement or deferred income plans. In early July 1976, the return for individual participants was set at 8.9% for those contributions received during the 1976 fiscal year. This rate will be subject to change annually.

The contributions received from the various retirement organizations will provide earnings of 8.8% during the past fiscal year, with an indication that the rate set on these contributions will continue for another nine years, or

through June 30, 1985. The slightly lower rate attributed to the institutional participants is due to the fact that a portion of the income will be set aside in the form of reserves to provide for any possible future diminution of income. Most bonds purchased during the year may not be refunded at a lower interest rate for a ten-year period.

Because of the uncertainties in the economy, an assumed rate for the 1977 fiscal year has been established at 7.50%. Participants will be paid a higher rate of return if the securities purchased during the coming year warrant such payments.

There is a substantial amount of interest in the fixed-return account because of the investment uncertainties made evident by the 1973-74 decline in both the stock and bond markets. The idea of a definite interest earnings – with no dependence upon stock or bond market fluctuations – apparently has great appeal to many fund participants. Because of the response to this new account, the assets increased from $1.0 to $4.2 million during the 1976 fiscal year. The significant influx of incoming contributions to this account has resulted in considerable reserves being held in short-term investments. These moneys will be placed in securities of longer maturity for which commitments are being made. It is the intent of the Investment Department that approximately 30 to 40 issues of fixed-income securities be selected within a comparatively short time so that the fund may be assured of adequate industry diversification. It is emphasized that the bonds purchased are concentrated in the AAA and AA quality levels. This will add to the safety applicable to the fund contributions and should minimize the chance of losses.

MINNESOTA VARIABLE ANNUITY FUND

The Minnesota Variable Annuity Fund was advocated prior to the adoption of the "five high year" plan by the Teachers Retirement Association. The participants received a net return of 5.4500% in fiscal 1971, 9.1670% for fiscal 1972, and 6.2393% for fiscal 1973. During fiscal 1974, the participants suffered a decline of 4.1478%, followed by another decrease of 17.9638% during fiscal 1975, and a decline of 0.0101% for the fiscal year ended June 30, 1976. The laws applicable to valuations and computation of net return dictate that a two-year period be used in calculating increases or decreases to the fund. As has previously been indicated in this report the stock and bond market "lows" of 1974 will be used in these calculations until mid-1977. Therefore, the Minnesota Variable Annuity Fund will not show a positive net return until the end of the 1977 fiscal year. Market-value-to-cost ratios already applicable to the June, 1977 computations indicate a significant positive net return for the next fiscal year.

Although most variable plans are based entirely on participation in equity investments, the widespread use of this fund and the fluctuations in the stock market since the account's inception have caused the investment department to adopt a policy which includes approximately 25% to 35% in fixed-income investments.

The option for the Variable Annuity was terminated during fiscal 1974. Therefore, the fund will continue only as an investment medium for those teachers who have already chosen to have a portion of their retirement moneys invested in accordance with the Variable Annuity concept. The securities in this fund on June 30, 1976, are listed on Schedule XII.

THE PERMANENT TRUST FUNDS

The State's permanent trust funds showed their greatest rate of growth during the 1940's and 1950's. Until a constitutional amendment was passed in 1956, half of the receipts from the iron ore occupation tax accrued to the principal of the permanent trust funds, which were invested for the benefit of the schools, the University of Minnesota and other state institutions. In recent years, the entire receipts from this tax have been applied directly toward meeting the State's current educational needs.

During the years immediately following the adoption of the constitutional amendment, long-term low-coupon U.S. Treasury bonds were sold from the Permanent School Fund, with the proceeds being invested in higher yielding corporate securities. In accordance with this amendment, corporate bonds were purchased to the approximate maximum of 40% of the fund. During the past several years, however, mortgage backed securities guaranteed by the U.S. government and issued through private organizations in cooperation with the Government National Mortgage Association have offered a yield comparable to or greater than that received from corporate bonds of similar quality. These Government National Mortgage Association mortgage backed securities were purchased during the summer months of 1974 at yields as high as 10.14%. Because of the lack of inflow of new cash into this fund, the gradual return of principal offered by this type of investment has been very attractive; we have thus been able to maintain a cash flow for current investment needs. During fiscal 1976, additional types of United States Government guaranteed securities were used; they have added both quality and yield to the fund. Arrangements between the State Board of Investment and the Minnesota Banker's Association have resulted in a program through which the Permanent School Fund has purchased those portions of Small Business Administration loans which are guaranteed by the United States Government. These loans are arranged through various banks in Minnesota and are "pooled" through the facilities of the Summit National Bank of Richfield. This program, initiated through the cooperation of

the Governor, the State Treasurer and the Minnesota Banker's Association, appears to offer a unique opportunity to achieve a comparatively high yield and an adequate cash flow to this permanent trust fund. It also marks a unique opportunity for following prudent investment principles in achieving an appropriate yield, while aiding the development of businesses in Minnesota.

Within the past few months, we have negotiated for other United States Government guaranteed securities based on hospital mortgages throughout the United States. These securities also offer a comparatively high yield, a continued repayment of principal and the highest possible quality.

Because of the comparative attractiveness of United States Government backed securities, the corporate bond portfolio has been reduced to 29.8% of the book value of the Permanent School Fund; it is anticipated that the holdings of high quality debt securities will be increased as more appropriate yield spreads become prevalent. United States Government and government guaranteed obligations constitute 47.7% of the book value of this account; common stock investments are maintained very near to the 20% limit.

Schedule XIII indicates that the investment changes have resulted in an increase in net yield from 2.68% during the late 1950's to 5.54% during the 1976 fiscal year. A very marked increase in return during the past five years was possible because of the use of United States Government guaranteed obligations. A portion of the income will be transferred on an annual basis to the principal of the account to replenish the book losses taken through the sale of long-term United States Treasury and corporate fixed-income obligations during the past 15 years.

Schedule XIV lists the securities in the Permanent School Fund on June 30, 1976.

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A review of policies concerning the placement of business, together with a summary of transactions completed during the fiscal year from July 1, 1975, through June 30, 1976, follows the schedules described above.

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The investment results achieved in fiscal 1975 and 1976 have been particularly pleasing to the Departmental staff. The cooperation and advice received from the members of the State Board of Investment and the Advisory Committee on State Trust Funds played a most important part in achieving these results. It is now evident that the funds benefited considerably through the significant purchase program completed during late 1974 and 1975. Likewise, the income from the Invested Treasurer's Cash Fund has been increased both through the accumulated surplus during the period of high interest rates and the degree of attention accorded this account by the various State finance offices.

The Investment Department is also appreciative of the cooperation by the staff of the Legislative Commission on Pensions and Retirement and by the interest shown in the State funds by the securities dealers, brokers and research personnel throughout the securities industry. Although the many Minnesota investment accounts must be managed under widely different investment policies and procedures – in order to achieve individual objectives – it is hoped that all of these funds can be invested so as to be of lasting benefit to the beneficiaries and to all citizens of Minnesota.

Respectfully submitted,

Robert E. Blixt

Robert E. Blixt, C.F.A.
Executive Secretary

REB:be

SCHEDULE XIII

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT

PERMANENT SCHOOL FUND

RATE OF RETURN ON AVERAGE AMOUNT INVESTED DURING FISCAL PERIODS
June 30, 1976

	Book Value (1)	Average Book Value for Year Ending (2)	Total Investment Income for Year Ending (3,4)	Yield (5)	Less Transfer to Principal (6)	Net Investment Income for Year Ending (7)	Net Yield (7)
June 30, 1957	$244,700,475.47	$242,386,448.84	$ 6,486,999.20	2.68%			
December 31, 1957	$248,558,062.99	–	–	–			
June 30, 1958	$249,513,238.84	$247,590,592.43	$ 6,512,261.41	2.63%			
December 31, 1958	$252,324,357.47	–	–	–			
June 30, 1959	$253,243,896.53	$251,693,830.95	$ 7,005,142.92	2.78%			
December 31, 1959	$225,520,490.05	–	–	–			
June 30, 1960	$256,276,151.72	$255,013,512.77	$ 7,116,641.31	2.79%			
December 31, 1960	$259,321,537.57	–	–	–			
June 30, 1961	$260,019,901.33	$258,540,196.87	$ 7,978,635.92	3.09%			
December 31, 1961	$261,981,702.84	–	–	–			
June 30, 1962	$262,388,564.04	$261,463,389.40	$ 8,610,672.52*	3.29%*			
December 31, 1962	$264,203,940.11	–	–	–			
June 30, 1963	$264,631,949.36	$263,741,484.50	$ 8,048,170.78*	3.05%*			
December 31, 1963	$263,710,744.23	–	–	–			
June 30, 1964	$263,552,120.96	$263,964,938.18	$ 8,579,156.81	3.25%			
December 31, 1964	$264,704,185.42	–	–	–			
June 30, 1965	$262,170,084.20	$263,475,463.53	$ 9,186,790.66	3.49%	$ 76,936.86	$ 9,109,853.80	3.46%
December 31, 1965	$262,324,844.32	–	–	–	–	–	–
June 30, 1966	$261,686,981.05	$262,060,609.86	$ 9,647,417.30	3.68%	$ 329,472.90	$ 9,317,944.40	3.56%
December 31, 1966	$263,433,844.16	–	–	–	–	–	–
June 30, 1967	$263,816,276.40	$262,979,007.20	$10,215,172.70	3.88%	$ 856,275.93	$ 9,358,896.77	3.56%
December 31, 1967	$264,303,404.43	–	–	–	–	–	–
June 30, 1968	$264,578,182.47	$264,232,621.10	$10,511,771.10	3.98%	$1,016,014.48	$ 9,495,756.62	3.59%
December 31, 1968	$266,225,867.42	–	–	–	–	–	–
June 30, 1969	$264,122,329.06	$264,975,459.65	$10,512,970.80	3.97%	$1,100,277.41	$ 9,412,693.39	3.55%
December 31, 1969	$264,797,800.95	–	–	–	–	–	–
June 30, 1970	$259,550,484.67	$262,823,538.23	$11,324,161.11	4.31%	$1,034,987.16	$10,289,173.95	3.91%
December 31, 1970	$248,210,564.03	–	–	–	–	–	–
June 30, 1971	$248,077,642.59	$251,946,230.43	$12,330,084.17	4.91%	$1,385,834.16	$10,944,250.01	4.34%
December 31, 1971	$250,918,742.94	–	–	–	–	–	–
June 30, 1972	$251,249,760.37	$250,082,048.63	$13,691,318.87	5.47%	$1,937,452.41	$11,753,866.46	4.70%
December 31, 1972	$251,129,595.01	–	–	–	–	–	–
June 30, 1973	$249,010,960.05	$250,463,438.48	$14,348,257.97	5.72%	$2,361,011.68	$11,987,241.29	4.79%
December 31, 1973	$252,105,340.61	–	–	–	–	–	–
June 30, 1974	$256,282,207.38	$252,466,169.35	$14,947,257.78	5.92%	$2,445,336.93	$12,501,920.85	4.95%
December 31, 1974	$254,000,064.12	–	–	–	–	–	–
June 30, 1975	$254,252,908.35	$254,845,059.95	$15,993,865.27	6.28%	$2,784,257.93	$13,209,587.34	5.18%
December 31, 1975	$258,709,583.62	–	–	–	–	–	–
June 30, 1976	$259,305,894.51	$257,422,797.49	$17,048,127.54	6.62%	$2,793,175.78	$14,254,951.76	5.54%

(1) Book value figures based on those shown on Treasurer's General Report on State Finances on date listed, with adjustments for calls, maturities and investments committed for but not yet received. Beginning December 31, 1974, book value was taken from State Board of Investment ledgers.

(2) Computed by averaging book value of fund on last three report dates, ending with date listed.

(3) Income figures obtained from the State Department of Finance. Beginning June 30, 1975, income figures are from State Board of Investment ledgers.

(4) Includes investment income from the Swamp Land Fund which was combined into the Permanent School Fund after passage of a Constitutional Amendment in 1962.

(5) Computed by dividing total investment income of fund for fiscal period by average book value of fund. Yield figures beginning on June 30, 1975, reflect the fact that income was taken from the State Board of Investment ledgers, which are computed on an accrual basis, whereas the figures formally obtained from the State Department of Finance were on a cash basis.

(6) The transfer of a portion of the income to the principal of the account is called for under the Minnesota Constitution, Article VIII, Section 4, as amended in 1962, and implemented by Minnesota Statutes 1974, Section 11.015, Subdivision 7, in order that the difference between the sales price and original cost of securities be returned to the principal of the account. Sales of low coupon U.S. Treasury securities at less than cost resulted in the transfers during recent years.

(7) Computed by dividing net investment income of fund for fiscal period by average book value of fund.

*The income received during fiscal 1962 and 1963 was subjected to accounting adjustments which tended to overstate the 1962 figures, due to the accumulation of discounts on bonds purchased (Minnesota Statutes 1974, Section 11.05, Subdivision 2) and understate the 1963 results, due to the combining of the Swamp Land Fund into the Permanent School Fund during that fiscal year.

SCHEDULE XIV

PERMANENT SCHOOL FUND
June 30, 1976

RESUME OF ASSETS IN ACCOUNT

CASH CERTIFIED FOR INVESTMENT*	$ 256,058.23
MONEY MARKET SECURITIES	
Repurchase Agreements Maturities up to 6 days	$ 8,106,000.00
STATE AND LOCAL OBLIGATIONS	$ 398,600.00
UNITED STATES GOVERNMENT-GUARANTEED OBLIGATIONS (See Listing Below)	$126,744,833.23
CORPORATE BOND OBLIGATIONS (See Listing Below)	$ 76,519,662.85
COMMON STOCKS (See Listing Below)	$ 53,116,507.88
TOTAL ASSETS IN ACCOUNT (for accounting purposes; not indicative of true market value)	$257,141,663.19

*Cash balance signifies amount due from sales of securities several days before fiscal year end.

Note: Bond investments are listed at face value; common stocks are listed at market value.

COMMON STOCK HOLDINGS

Common Stock	Shares	Market Price 6-30-76	Market Value	Total % Market
UTILITIES				
ELECTRIC				
Central and South West Corporation	23,000	$ 14.50	$ 333,500.00	
Cincinnati Gas & Electric Company (The)	24,000	17.88	429,000.00	
Commonwealth Edison Company	21,499	28.00	601,972.00	
Florida Power & Light Company	25,400	23.88	606,425.00	
Houston Lighting & Power Company	16,500	23.50	387,750.00	
Middle South Utilities, Incorporated	34,000	14.63	497,250.00	
Minnesota Power & Light Company	15,500	19.63	304,187.50	
Northern States Power Company (Minn.)	21,500	24.38	524,062.50	
Pacific Gas & Electric Company	21,500	20.38	438,062.50	
Public Service Company of Indiana, Inc.	18,150	25.50	462,825.00	
Southern California Edison Company	[illegible]	19.63	392,500.00	
Southern Company (The)	24,000	14.38	345,000.00	
Texas Utilities Company	28,000	19.00	532,000.00	
Virginia Electric and Power Company	18,000	13.75	247,500.00	
Total Electric			$ 6,102,034.50	11.00%
NATURAL GAS				
Panhandle Eastern Pipe Line Company	20,000	$ 35.13	$ 702,500.00	1.27%
COMMUNICATIONS				
American Telephone & Telegraph Company	27,000	$ 56.50	$ 1,525,500.00	
General Telephone & Electronics Corp.	40,800	25.88	1,055,700.00	
Total Communications			$ 2,581,200.00	4.65%
TOTAL UTILITIES			$ 9,385,734.50	16.92%
FINANCIAL SERVICES				
BANKS				
Bank America Corporation	18,000	$ 56.25	$ 1,012,500.00	
Citicorp	29,112	36.13	1,051,671.00	
First Bank System, Incorporated	21,500	45.88	986,312.50	
J. P. Morgan & Co., Incorporated	10,920	62.75	1,061,730.00	
Northwest Bancorporation	27,000	53.25	1,437,750.00	
Total Banks			$ 5,549,963.50	10.00%
FINANCE				
Beneficial Corporation	17,925	$ 24.13	$ 432,440.63	
Household Finance Corporation	26,000	18.50	481,000.00	
Total Finance			$ 913,440.63	1.65%
INSURANCE				
INA Corporation	15,300	$ 37.88	$ 579,487.50	
Northwestern National Life Insurance Co.	25,200	14.00	354,200.00	
SAFECO Corporation	15,800	38.75	612,250.00	
The St. Paul Companies, Inc.	32,000	27.50	880,000.00	
United States Fidelity & Guaranty Company	17,000	38.88	660,875.00	
Total Insurance			$ 3,086,812.50	5.56%
TOTAL FINANCIAL SERVICES			$ 9,550,215.63	17.21%
CONSUMER ORIENTED				
AUTOMOBILES & AUTOMOTIVE PARTS				
Ford Motor Company	18,600	$ 58.50	$ 1,088,100.00	
General Motors Corporation	21,200	68.50	1,452,200.00	
Goodyear Tire & Rubber Company (The)	33,000	23.00	759,000.00	
Total Automobiles & Automotive Parts			$ 3,299,300.00	5.94%
CONSUMER DURABLES				
Sunbeam Corporation	14,000	$ 23.63	$ 330,750.00	
Whirlpool Corporation	22,200	27.13	602,175.00	
Total Consumer Durables			$ 932,925.00	1.68%
CONSUMER-NONDURABLES				
Eastman Kodak Company	7,350	$100.13	$ 735,918.75	
Minnesota Mining and Manufacturing Co.	18,000	55.53	1,001,250.00	
Procter & Gamble Company (The)	7,700	94.98	730,537.50	
Revlon, Incorporated	8,000	84.00	672,000.00	
Total Consumer-Nondurables			$ 3,139,706.25	5.66%
DRUGS				
American Home Products Corporation	22,800	$ 34.25	$ 780,900.00	
Merck & Co., Inc.	10,000	72.00	720,000.00	
Pfizer, Inc.	30,000	29.25	877,500.00	
Total Drugs			$ 2,378,400.00	4.29%
FOOD-BEVERAGE				
CPC International, Inc.	8,000	$ 46.00	$ 368,000.00	
Coca-Cola Company (The)	8,000	84.13	673,000.00	
General Foods Corporation	35,000	29.13	1,019,375.00	
General Mills, Incorporated	30,000	31.50	945,000.00	
Total Food-Beverage			$ 3,005,375.00	5.42%
RETAIL SALES				
Federated Department Stores, Incorporated	18,000	$ 47.63	$ 857,250.0	
Penney (J.C.) Company, Incorporated	10,800	52.25	564,300.00	
Sears, Roebuck and Company	12,000	64.75	777,000.00	
Total Retail Sales			$ 2,198,550.00	3.96%
TOTAL CONSUMER-ORIENTED			$14,954,256.25	26.95%
TECHNOLOGY				
OFFICE EQUIPMENT				
Burroughs Corporation	9,500	$104.00	$ 988,000.00	
Honeywell, Inc.	10,000	49.63	496,250.00	
International Business Machines Corporation	12,525	276.75	3,409,081.25	
Xerox Corporation	6,440	61.63	396,865.00	
Total Office Equipment			$ 5,350,176.25	9.64%
TOTAL TECHNOLOGY			$ 5,350,176.25	9.64%
BASIC INDUSTRY				
BUILDING & FOREST PRODUCTS				
Weyerhaeuser Company	[illegible]00	$ 44.38	$ 789,875.00	1.42%
CHEMICALS				
Dow Chemical Company (The)	12,000	$ 48.25	$ 579,000.00	
du Pont (E.I.) de Nemours and Company	7,000	133.50	976,500.00	
Monsanto Company	4,000	93.25	373,000.00	
Union Carbide Corporation	11,700	67.63	791,212.50	
Total Chemicals			$ 2,719,712.50	4.90%
ELECTRICAL EQUIPMENT				
General Electric Company	16,200	$ 57.13	$ 925,425.00	1.67%
MACHINERY				
Caterpillar Tractor Co.	10,100	$ 97.13	$ 920,362.50	
Trans Union Corporation	10,400	34.25	356,200.00	
Total Machinery			$ 1,276,562.50	2.30%
METALS				
Aluminum Company of America	14,000	$ 56.50	$ 791,000.00	1.43%
PAPER				
International Paper Company	7,000	$ 73.00	$ 511,000.00	0.92%
TOTAL BASIC INDUSTRY			$ 7,013,575.00	12.64%
ENERGY				
OIL-DOMESTIC				
Atlantic Richfield Company	8,000	$104.50	$ 836,000.00	
Continental Oil Company (Del.)	20,000	38.38	767,500.00	
Standard Oil Company (Indiana)	24,000	50.50	1,212,000.00	
Total Oil Domestic			$ 2,815,500.00	5.07%
OIL-INTERNATIONAL				
Exxon Corporation	21,408	$104.63	$ 2,239,812.00	
Mobil Corporation	21,300	59.88	1,275,337.50	
Texaco Inc.	34,000	28.13	956,250.00	
Total Oil International			$ 4,471,399.50	8.05%
TOTAL ENERGY			$ 7,286,899.50	13.13%
TRANSPORTATION				
AIRLINES				
Northwest Airlines, Incorporated	16,884	$ 32.50	$ 548,730.00	0.99%
RAILROADS				
Burlington Northern Incorporated	13,600	$ 46.00	$ 625,600.00	
Union Pacific Corporation	8,400	92.38	775,950.00	
Total Railroads			$ 1,401,550.00	2.52%
TOTAL TRANSPORTATION			$ 1,950,280.00	3.51%
TOTAL COMMON STOCKS			$55,491,138.13*	100.00%

*Original cost of equities on June 30, 1976, was $49,314,237.03.

Schedule XIV continued

UNITED STATES GOVERNMENT-GUARANTEED BONDS AND CORPORATE BOND HOLDINGS
June 30, 1976

Company	Type of Security	Maturity Date (a)	Coupon Rate %	Average Yield %	Total Amount
UNITED STATES GOVERNMENT-GUARANTEED OBLIGATIONS					
FARMERS HOME ADMINISTRATION NOTES					
U.S. Department of Agriculture, Farmers Home Administration	Insured Notes	1-31-80	8.90	8.90	$ 2,997,834.82
U.S. Department of Agriculture, Farmers Home Administration	Insured Notes	7-31-85	8-5/8	8.625	2,995,877.33
Total Farmers Home Administration Notes				8.76%	$ 5,993,712.15
GOVERNMENT NATIONAL MORTGAGE ASSOCIATION GUARANTEED MORTGAGE-BACKED SECURITIES					
California Mortgage Service	Mtg. Backed Cert.	7-15-2004	8 1/4	9.61	$ 936,874.24
Citizens Mortgage Corp.	Mtg. Backed Cert.	12-15-2000	8.00	8.73	1,523,393.50
First National Bank of Minneapolis	Mtg. Backed Cert.	12-15-2000	8.00	8.65	1,171,367.24
First National Bank of Minneapolis	Mtg. Backed Cert.	2-15-2001	8.00	8.50	1,241,769.13
Guild Mortgage Company	Mtg. Backed Cert.	2-15-2004	8.00	8.52	1,753,438.75
Heritage Mortgage	Mtg. Backed Cert.	7-15-2004	8 1/4	9.48	1,889,654.81
International Mortgage	Mtg. Backed Cert.	4-15-2004	8.00	8.52	1,831,598.19
IDS Mortgage Corp.	Mtg. Backed Cert.	12-15-2001	6 1/2	7.13	2,503,606.28
IDS Mortgage Corp.	Mtg. Backed Cert.	11-15-2001	6 1/2	7.13	2,502,409.75
IDS Mortgage Corp.	Mtg. Backed Cert.	2-15-2000	7.00	8.92	2,020,673.47
IDS Mortgage Corp.	Mtg. Backed Cert.	6-15-2000	8.00	9.94	1,446,089.65
IDS Mortgage Corp.	Mtg. Backed Cert.	7-15-2000	8.00	8.73	1,565,703.11
IDS Mortgage Corp.	Mtg. Backed Cert.	10-15-2000	8.00	8.73	1,511,034.63
IDS Mortgage Corp.	Mtg. Backed Cert.	11-15-2000	8.00	8.65	1,514,143.08
IDS Mortgage Corp.	Mtg. Backed Cert.	1-15-2001	8.00	8.57	1,536,118.29
IDS Mortgage Corp.	Mtg. Backed Cert.	2-15-2001	8.00	8.50	680,712.37
IDS Mortgage Corp.	Mtg. Backed Cert.	3-15-2001	7 1/2	7.40	810,081.56
IDS Mortgage Corp.	Mtg. Backed Cert.	3-15-2003	6 1/2	7.34	3,004,651.12
IDS Mortgage Corp.	Mtg. Backed Cert.	4-15-2003	6 1/2	7.34	3,007,627.01
IDS Mortgage Corp.	Mtg. Backed Cert.	4-15-2003	6 1/2	7.54	3,003,586.84
IDS Mortgage Corp.	Mtg. Backed Cert.	6-15-2003	6 1/2	7.60	2,860,949.14
IDS Mortgage Corp.	Mtg. Backed Cert.	7-15-2003	6 1/2	7.89	4,602,016.59
IDS Mortgage Corp.	Mtg. Backed Cert.	11-15-2003	8.00	8.55	1,835,022.70
IDS Mortgage Corp.	Mtg. Backed Cert.	11-15-2003	8.00	8.55	2,790,085.08
IDS Mortgage Corp.	Mtg. Backed Cert.	4-15-2004	8.00	8.47	2,698,865.97
Iowa Securities Co.	Mtg. Backed Cert.	12-15-2000	8.00	8.94	1,302,318.43
Iowa Securities Co.	Mtg. Backed Cert.	2-15-2001	8.00	8.10	1,291,314.48
Lumbermans Investment	Mtg. Backed Cert.	7-15-2004	8 1/4	9.61	1,735,169.90
Melton, Allen & Wms.	Mtg. Backed Cert.	2-15-2004	8.00	8.52	942,326.64
National Homes Acceptance Corp.	Mtg. Backed Cert.	5-15-2000	7.00	8.92	1,412,597.00
National Homes Acceptance Corp.	Mtg. Backed Cert.	9-15-2000	8.00	8.80	1,520,963.50
National Homes Acceptance Corp.	Mtg. Backed Cert.	7-15-2000	8.00	8.80	1,573,280.78
Peoples Mortgage Co.	Mtg. Backed Cert.	11-15-2004	9.00	9.92	1,858,779.13
Steed (W.S.)	Mtg. Backed Cert.	7-15-2004	8.00	8.86	1,904,051.33
Virginia Mtg. & Investment Co.	Mtg. Backed Cert.	9-15-2004	9.00	9.83	994,859.86
Percy Wilson Mortgage & Finance Corp.	Mtg. Backed Cert.	8-1-2000	8.00	8.94	1,531,811.78
Total Government National Mortgage Association, Guaranteed Mortgage Backed Securities				8.38%	$ 65,459,044.75
MERCHANT MARINE BONDS					
American Mail Line	Govt. Guar. Bond	3-1-93	6.00	6.00	$ 1,470,000.00
American President Lines, Ltd.	Govt. Guar. Bond	11-1-91	4.80	4.80	1,470,000.00
American President Lines, Ltd.	Govt. Guar. Bond	11-1-92	5.60	5.60	1,000,000.00
Construction Aggregates Corp.	Govt. Guar. Bond	6-1-91	7 1/2	7.50	1,875,000.00
Delta Steamship Lines, Inc.	Govt. Guar. Bond	3-1-93	5 1/2	5.50	906,000.00
Eagle Terminal Tankers, Inc.	Govt. Guar. Bond	6-1-89	6.00	6.00	3,206,000.00
El Paso Columbia Tankers	Govt. Guar. Bond	12-15-01	9 1/4	9.25	3,000,000.00
Farrell Lines, Inc.	Govt. Guar. Bond	4-1-88	8.05	8.05	1,678,000.00
Farrell Lines, Inc.	Govt. Guar. Bond	6-29-97 through 9-2-98	9.00	9.00	878,000.00
Grace Line, Inc.	Govt. Guar. Bond	2-1-92	5.10	5.10	1,476,000.00
Ingram Ocean Systems, Inc.	Govt. Guar. Bond	2-1-89	8 3/4	8.75	1,263,000.00
Intercontinental Bulktank Corp.	Govt. Guar. Bond	9-1-90	7.80	7.80	1,168,000.00
Martin Drilling Co.	Govt. Guar. Bond	1-1-91	8.90	8.90	3,000,000.00
Matson Navigation Co.	Govt. Guar. Bond	11-10-94	7 1/2	7.50	984,000.00
Moore-McCormick Leasing	Govt. Guar. Bond	7-15-2001	8 7/8	8.875	3,000,000.00
Moore-McCormick Lines, Inc.	Govt. Guar. Bond	4-1-87	5 3/4	5.86	1,308,000.00
Overseas Bulktank Corp.	Govt. Guar. Bond	12-1-90	7.80	7.80	1,192,000.00
Pacific Far East Line, Inc.	Govt. Guar. Bond	12-1-97	8 3/4	8.75	2,101,000.00
Penn Tanker	Govt. Guar. Bond	10-1-89	6.00	6.00	1,309,000.00
Prudential Lines, Inc.	Govt. Guar. Bond	11-1-95	6.00	6.00	2,158,000.00
Puget Sound Tug & Barge	Govt. Guar. Bond	2-15-2001	9 1/8	9.125	2,984,000.00
States Steamship Co.	Govt. Guar. Bond	3-31-93	5.10	5.10	1,500,000.00
United States Lines, Inc.	Govt. Guar. Bond	10-1-87	5.00	5.00	1,293,000.00
United States Lines, Inc.	Govt. Guar. Bond	3-1-91	8 5/8	8.625	1,950,000.00
Western Co. of North America	Govt. Guar. Bond	6-11-90	9 1/4	9.25	3,000,000.00
Zapata Off-Shore Co.	Govt. Guar. Bond	6-15-96	8 5/8	8.625	3,000,000.00
Total Merchant Marine Bonds				7.56%	$ 48,275,000.00
NEW COMMUNITIES ACT DEBENTURES					
Cedar-Riverside Land Company	Govt. Guar. Deb.	12-15-31	7.20	7.20	$ 2,500,000.00
Jonathan Development Corp.	Govt. Guar. Deb.	10-1-90	8 1/2	8.50	2,500,000.00
Total New Communities Act Debentures				7.85%	$ 5,000,000.00
SMALL BUSINESS ADMINISTRATION LOANS					
SBA Loans	Govt. Guar. Bond	8-22-85	9 1/4	9.32	$ 503,983.67
SBA Loans	Govt. Guar. Bond	4-27-84	9 1/4	9.31	513,092.66
Total Small Business Administration Loans				9.31%	$ 1,017,076.33
TOTAL UNITED STATES GOVERNMENT-GUARANTEED OBLIGATIONS				8.08%	$126,744,833.23

Company	Type of Security	Maturity Date (a)	Coupon Rate %	Average Yield %	Total Amount
CORPORATE BOND OBLIGATIONS					
PUBLIC UTILITY OBLIGATIONS					
ELECTRIC					
Duke Power Co.	First & Refunding Mortgage	2-1-95	4 1/2	4.47	$ 1,500,000.00
Florida Power & Light Co.	First Mortgage	4-1-94	4 5/8	4.50	1,200,000.00
Hawaiian Electric Co., Ltd.	First Mortgage	7-1-93	4.45	4.45	1,000,000.00
Interstate Power Co.	First Mortgage	5-1-93	4 3/8	5.45	2,000,000.00
Iowa Power & Light Co.	S/F Debenture	4-1-89	4 5/8	4.57	1,200,000.00
Jersey Central Power & Light Co.	Debenture	10-1-88	4 5/8	4.56	960,000.00
Long Island Lighting Co.	First Mortgage	6-1-95	4.55	5.20	1,700,000.00
Massachusetts Electric Co.	First Mortgage	12-1-93	4 5/8	4.55	1,100,000.00
Northern States Power Co.	First Mortgage	9-1-93	4 3/8	4.38	1,000,000.00
Otter Tail Power Co.	First Mortgage	11-1-93	4 5/8	4.65	1,017,000.00
Potomac Edison Co.	First Mortgage & Coll. Trust	3-1-94	4 5/8	4.55	1,200,000.00
Southwestern Public Service Co.	First Mortgage	2-1-94	4 1/2	4.50	1,200,000.00
Total Electric				4.72%	$ 15,077,000.00
GAS					
Columbia Gas System, Inc.	Debenture	5-1-89	4 5/8	4.64	$ 1,200,000.00
The Gas Service Co.	First Mortgage	6-1-85	4.65	4.65	936,000.00
Michigan Consolidated Gas Co.	First Mortgage	6-1-89	4 3/4	5.52	2,375,000.00
Peoples Gas Light & Coke Co.	First & Refunding Mortgage	7-15-91	5 3/8	5.38	1,312,000.00
Total Gas				5.17%	$ 5,823,000.00
TELEPHONE					
American Telephone & Telegraph Co.	Debenture	5-1-95	4 3/8	4.365	$ 1,500,000.00
The Bell Telephone Co. of Canada	First Mortgage	9-1-95	4.85	5.53	2,500,000.00
The Bell Telephone Co. of Canada	First Mortgage	6-1-2000	9 1/2	9.50	3,000,000.00
General Telephone Co. of Florida	First Mortgage	6-1-95	4 5/8	4.687	1,000,000.00
General Telephone Co. of Illinois	First Mortgage	9-1-95	4 7/8	4.875	1,200,000.00
General Telephone Co. of Indiana	First Mortgage	8-1-95	4.70	4.70	1,200,000.00
New York Telephone Co.	Refunding Mortgage	1-1-2004	4 5/8	4.53	1,500,000.00
Pacific Northwest Bell Telephone Co.	Debenture	12-1-2000	4 1/2	4.49	1,500,000.00
Southern Bell Telephone & Telegraph Co.	Debenture	3-15-2013	7 5/8	8.42	4,000,000.00
Total Telephone				8.43%	$ 17,400,000.00
TOTAL PUBLIC UTILITY OBLIGATIONS				5.56%	$ 38,300,000.00
FINANCE OBLIGATIONS					
Gulf Life Insurance Co.	Capital Note	6-1-89	4 3/4	4.75	$ 780,000.00
Northwest Bancorporation	Debenture	10-15-90	4 3/4	4.78	1,500,000.00
Northwest Bancorporation	S/F Debenture	3-15-2003	7 3/4	7.75	1,500,000.00
TOTAL FINANCE OBLIGATIONS				5.35%	$ 3,780,000.00
INDUSTRIAL OBLIGATIONS					
Aluminum Co. of America	Promissory Note	3-31-88	4 3/8	4.50	$ 995,000.00
Aluminum Co. of Canada, Ltd.	S/F Debenture	3-1-95	9 1/2	9.37	1,000,000.00
Armour Dial, Inc. (Ardison Properties, Inc.)	Note	1-15-2003	7.90	7.90	3,817,650.00
Atlantic Richfield Co.	Guaranteed Note	7-15-96	9 1/4	9.25	3,000,000.00
Cummins Engine Co., Inc.	Note	7-15-90	4.60	4.60	900,000.00
Diamond Shamrock Corp.	Note	5-1-89	4.65	5.26	975,000.00
Dow Chemical Co.	Debenture	9-15-84	4.35	4.35	1,000,000.00
FMC Corporation	S/F Debenture	1-15-2000	9 1/2	9.50	3,000,000.00
General Cable Corp.	Note	1-1-89	4 7/8	4.875	720,000.00
Honeywell, Inc.	Note	4-1-90	4.55	5.22	1,899,062.50
Ingersoll Rand Co.	Note	1-1-91	4 3/4	4.75	966,000.00
Sun Oil Co.	Note	4-15-90	4 1/2	4.50	1,150,000.00
Sprague Electric Co.	S/F Debenture	9-1-88	4 3/8	4.40	1,000,000.00
Standard Oil of California (Union Bank)	First Preferred Ship Mtg. Bond	9-7-97 through 11-6-97	7.70	7.70	3,000,000.00
Standard Oil Co. (Indiana) (Mid-continent Properties, Inc.)	Note	10-1-2000	7.30	7.30	4,000,000.00
Standard Oil Co. (Ohio)	Note	7-15-90	4.55	4.55	1,064,000.00
Swift & Co.	S/F Debenture	8-1-92	6.30	6.30	1,275,000.00
Texaco, Inc.	Note	12-15-89	4 1/2	4.50	1,238,000.00
Union Carbide Corp.	Note	12-31-96	4 1/2	4.47	983,835.57
Youngstown Sheet & Tube Co.	First Mortgage S/F Bond	7-1-95	4.60	4.60	1,260,000.00
TOTAL INDUSTRIAL OBLIGATIONS				8.69%	$ 33,243,548.07
TRANSPORTATION DEBT OBLIGATIONS					
Atchison, Topeka & Santa Fe Railway Co.	Gen. Gold	10-1-95	4.00	4.40	$ 1,500,000.00
RAILROAD EQUIPMENT OBLIGATIONS					
Flying Tiger Corp. (Formerly North American Car Corp.)	Equipment Trust	9-1-78/79	4.65	4.65	$ 800,000.00
Illinois Central Railroad Co.	Conditional Sale	2-15-77/81	6 7/8	6.875	849,999.99
Kansas City Southern Railway Co.	Conditional Sale	1-15-77/ 7-15-78	4.45	4.45	246,114.73
TOTAL RAILROAD EQUIPMENT OBLIGATIONS				5.14%	$ 1,696,114.72
TOTAL CORPORATE BOND OBLIGATIONS				8.05%	$ 78,519,842.85
TOTAL UNITED STATES GOVERNMENT-GUARANTEED AND CORPORATE OBLIGATIONS				7.30%	$205,264,486.08

(a) Most corporate issues have substantial sinking funds and an average life far shorter than the stated maturity date.

Exhibit III

Institution:	(Montana) Resource Indemnity Fund created in 1974
Location:	Helena, Montana
Size:	
Capital Funds:	$4.5 million
Purpose:	The Resource Indemnity Fund was created to accumulate income from a Severance Tax on Coal and other minerals for the purpose of providing moneys to enhance the State ecological environment and rectify damage thereto. Accumulations in the Fund shall continue until the Fund reaches $100 million.
Source of Funds:	Moneys are deposited in the Fund from a severance tax on various minerals and 2½% of the Severance Tax on Coal.
Management Structure:	Moneys are collected and deposited in the Fund by the Department of Revenue. Investments in the Fund are made in accordance with guidelines established by the State Board of Investments which is composed of five private citizens appointed by the Governor for 5 year terms.
Management of Funds:	Moneys are invested in debt instruments authorized by State Statutes.
Portfolio:	Moneys are currently invested in corporate bonds that have been rated A or better by Moody's Investors Service and Standard & Poor's Corporation.
Income:	Income from investments remain in the Fund until $10 million has been accumulated. After the accumulation of $10 million, income may be used for enhancement or repair of the environment.

Institution:	(New Mexico) State Permanent Fund created in 1898
Location:	Santa Fe, New Mexico
Size:	
Assets:	10 million acres
Capital Funds:	$675 million
Purpose:	The State Permanent Fund was established to collect royalties and other income from the lease of State-owned land. Income from the Fund is applied to the New Mexico public school systems and educational and eleemosynary institutions.
Source of Funds:	Moneys in the Fund were initially provided from the sale of State land. Currently, revenues to the Fund are provided from royalties and income from State-owned lands under lease. Such revenues include oil and gas royalties and grazing and timber leases. In addition, any capital gains on investments remain in the Fund.
Management Structure:	The State Permanent Fund is managed by the State Investment Council. Members of the Council include the Governor, the State Treasurer, the Commissioner of Public Lands, the Finance Officer and four public members who are appointed by the Governor for terms of five years.
Management of Funds:	The State Investment Officer is responsible for investing moneys in the State Permanent Fund. Fifty per cent of the Fund must be invested in Federal Securities. The remainder may be invested according to State Statutes.
Portfolio:	The Fund is currently invested as follows: 18% equity, 32% corporate obligations and 50% U.S. Government and Federal Agency Obligations.
Income:	Income from the Fund is distributed to the public school system (80%) and the remainder to educational and eleemosynary institutions.

Institution:	(New Mexico) Severance Tax Bonding Fund, created in 1941
Location:	Santa Fe, New Mexico
Size:	
Capital Funds:	$9,040,756.02
Purpose:	The Severance Tax Bonding Fund was created to secure tax-exempt bonds issued for public capital projects.
Source of Funds:	Moneys derived from the levy of the New Mexico Severance Tax on severed natural resources are paid in their entirety to this Fund. Additional sources of income include revenues from projects financed with Severance Tax Bonds and receipts from ground rentals of Public Buildings. Moneys in excess of the next two semi-annual payments on all outstanding Severance Tax Bonds are transferred to the Severance Tax Permanent Fund.
Management Structure:	The Fund is managed by the State Treasurer under the supervision of the State Board of Finance. The State Board of Finance consists of the Governor, Lieutenant Governor and three private citizens appointed by the Governor for two year terms. The State Treasurer is responsible for repayment of principal and interest on Severance Tax Bonds.
Management of Funds:	Moneys in the Fund are invested in debt instruments authorized by State Statutes.
Portfolio:	N.A.
Income:	All moneys in the Severance Tax Bonding Fund except an amount sufficient to repay principal and interest on the Severance Tax Bonds on the next ensuing semi-annual payment date is transferred to the Severance Tax Permanent Fund.
Indebtedness Limitation:	The State Board of Finance may issue additional Severance Tax Bonds payable from the Severance Tax Bonding Fund provided that aggregate annual debt service on Bonds outstanding including the proposed issue be equal to no more than 50% of previous fiscal year's deposits into the Severance Tax Bonding Fund.

Institution:	(New Mexico) Severance Tax Permanent Fund created in 1971
Location:	Santa Fe, New Mexico
Size:	
Capital Funds:	$103 million, currently accruing at rate of $4 million per month.
Purpose:	The Severance Tax Permanent Fund was created to encourage economic development in the State of New Mexico.
Source of Funds:	Moneys in the Severance Tax Permanent Fund are provided from the New Mexico Severance Tax levied for the privilege of severing natural resources including oil and gas, potash, copper, uranium, timber, coal and certain other minerals. Proceeds from the Severance Tax are deposited in the Severance Tax Permanent Fund after the required payments to the Severance Tax Bonding Fund.
Management Structure:	The Fund is managed by the State Treasurer under the supervision of the State Board of Finance. The State Board of Finance consists of the Governor, Lieutenant Governor and three private citizens appointed by the Governor for terms of two years.
Management of Funds:	Moneys in the Fund may be invested at the discretion of the State Board of Finance. Moneys currently are invested by the State Treasurer in Certificates of Deposit of State banks who in turn make loans for capital projects to the private sector. Loan feasibility and appropriateness of the capital project is left entirely up to the bank. Participation by the Fund in sizeable loans by State banks requires the approval of the State Board of Finance. The principal of the Fund may be used for economic development purposes upon the approval of the State Board of Finance. An amendment to require 3/4's approval of the legislature prior to invasion of the principal of the Severance Tax Permanent Fund is on the November ballot.
Portfolio:	Approximately $94 million of the Fund is invested in Certificates of Deposits of State banks maturing one to five years at a floating rate of short term treasury obligations plus 50 basis points. The remainder is invested under Repurchase Agreements.
Income:	Income from the Severance Tax Permanent Fund is transferred to the Severance Tax Income Fund.

Institution:	(New Mexico) Severance Tax Income Fund created in 1971
Location:	Santa Fe, New Mexico
Size:	
Capital Funds:	$2.2 million as of 9/27/76
Purpose:	The Severance Tax Income Fund was created to finance public capital improvement projects.
Source of Funds:	Income from the investments of the Severance Tax Permanent Fund is deposited in this Fund.
Management Structure:	Moneys are invested and disbursed by the State Treasurer under the supervision of the State Legislature.
Management of Fund:	Pending appropriation for capital projects, moneys are invested under Repurchase Agreements.
Portfolio:	N.A.
Income:	Income from the Fund is transferred to the State General Fund.

Institution:	Texas Permanent University Fund created in 1881
Location:	Austin, Texas
Size:	
Assets:	2,100,000 acres of land in nineteen West Texas counties Book value 8/31/75 $781,771,634.49
Purpose:	Fund created by provisions of the Texas Constituion in order to enable the State Legislature to carry out the purpose, as declared by the Republic of Texas and later in early State Constitutions, of creating a State University. The Constitutional provisions set aside all lands previously appropriated for the creation of a State University, together with the proceeds of any sale thereof, to create a Permanent University Fund. All moneys available in the Fund are to be invested in securities, the income from which will be appropriated by the Legislature, in order to accomplish the purpose of creating, maintaining, supporting and directing a university for the promotion of literature, and the arts and sciences, including an agricultural and mechanical department.
Source of Funds:	Funds are accumulated annually in the Fund from oil, gas and water royalties, gains on investments, mineral lease rentals, lease bonuses, and any proceeds of land sold. The Permanent Fund shall be forever kept intact and all annual income shall become part of the Fund.
Management Structure:	The Fund is held by the Treasurer of the State of Texas and invested by direction of the Board of Regents of the University of Texas. The Board of Regents consists of nine members who serve without compensation. They are appointed by the Governor for six year terms subject to approval by the Senate.
Management of Funds:	The Fund is invested in permitted securities which are bonds of the United States, the State of Texas, or counties of the State, or in school bonds of municipalities in the State, or bonds of any city in the State, or in bonds issued under the Federal Farm Loan Act. In addition, the Fund may be invested in securities, bonds or other obligations issued, insured or guaranteed in any manner by the U.S. Government, or any of its agencies, and in bonds, debentures, or obligations, and preferred and common stocks issued by corporations, associations, or other institutions as the Board of Regents deem to be proper, provided that not more than 1% of the Fund will

Management of Funds: continued

be invested in the securities of any one corporation nor more than 5% of the voting stock of any one corporation be owned. In addition, stocks purchased will be only in companies incorporated in the U.S. and who have paid dividends for at least five consecutive years and, except for bank or insurance company stocks, are listed on a registered stock exchange.

Portfolio:

Capital Funds (August 31, 1975)

Securities, cash and equivalent at cost	$781,771,634.49
U.S. Governments	
Direct Obligations	106,828,987.45
Guaranteed	103,089,999.03
Corporate Bonds	279,571,990.53
Convertible Debentures & Preferreds	16,440,190.64
Common Stocks	254,425,102.52
Short Term Securities & Cash	21,415,364.32
Total	$781,771,634.49

Income:

The income from Fund investments is appropriated annually by the State Legislature; two-thirds to the University of Texas and one-third to Texas A & M. The income of the Fund may be used only for permanent improvement and not for current expenses. Prior to the distribution of the income of the Fund, provision is made for the expenses of administering the Fund.

Institution:	(Wyoming) University Permanent Land Fund created in 1881
Location:	Cheyenne, Wyoming
Size:	
Assets:	34,492 acres
Capital Funds:	$8,565,000
Purpose:	The University Permanent Land Fund was created to receive income from lands granted to Wyoming to be used for the financial benefit of the University of Wyoming. Income from the Fund is used to support capital projects of the University.
Source of Funds:	Moneys in the Fund are provided from income received on specific State-owned lands.
Management Structure:	The State Treasurer is responsible for investing the Fund. Income from the Fund is transferred to the Treasurer of the University of Wyoming.
Management of Funds:	The State Treasurer invests the Fund in debt instruments authorized by State Statutes.
Portfolio:	N.A.
Income:	Income from the Fund is transferred to the University of Wyoming.

Institution:	(Wyoming) Permanent Mineral Trust Fund created in 1974
Location:	Cheyenne, Wyoming
Size:	
Capital Funds:	$51,250,000
Purpose:	The Permanent Mineral Trust Fund was created to retain moneys collected from a Severance Tax on all minerals. Moneys in the Fund may be used for loans to political subdivisions upon legislative approval.
Source of Funds:	Collections of a Severance Tax on all minerals are placed in the Fund.
Management Structure:	The State Treasurer is responsible for managing and investing this Fund.
Management of Funds:	Moneys are invested in debt instruments authorized by State Statutes.
Portfolio:	N.A.
Income:	Income from the Permanent Mineral Trust Fund is transferred to the State's General Fund.

Institution:	(Wyoming) Government Royalties Fund created in 1973
Location:	Cheyenne, Wyoming
Size:	
Assets:	3.1 million acres
Capital Funds:	N.A.
Purposes:	Moneys collected in the Fund are applied as follows: 50% to Public School System 35% to State General Fund 9% to University of Wyoming for capital projects 6% to counties
Source of Funds:	Mineral royalties and lease payments from operators on U.S. Government-owned lands in Wyoming are divided between the U.S. Government and Wyoming. Prior to 1976 the State of Wyoming received 37 1/2% and the U.S. Government 62 1/2%. As of 1976 the U.S. Government and Wyoming divide the mineral royalties and lease payments equally.
Management Structure:	Mineral royalties and lease payments are collected by the U.S. Government and disbursed to the State semi-annually.
Management of Funds:	Moneys remitted to the State are deposited with the State Treasurer. The Wyoming legislature intends to address the management and application of additional income received pursuant to the State's increased share of mineral royalties and lease payments.
Portfolio:	N.A.
Income:	N.A.

The following is a summary of States that have not created permanent trust funds to receive income derived from taxation on or royalties from finite natural resources.

STATE	APPLICATION OF SEVERANCE TAX AND ROYALTY INCOME
Alabama	Proceeds of the Timber Severance Tax support State Conservation Department timber restoration activities. The Coal Severance Tax is used to pay debt service on Alabama State Docks Department, Seaport Facility Revenue and Special Tax Bonds. $15,000,000 originally issued. $13,075,000 presently outstanding. No additional bonds may be issued with the Coal Severance Tax as security.
Arkansas	Revenue from severance taxes are returned to the county level after the State deducts all claims against the county, plus a 1 1/2% charge. The 1 1/2% charge is deposited in State General Fund.
California	Fifty-six percent for capital outlay programs in California's Higher Education System. Twenty-two percent for special projects including irrigation aqueducts and improvement in navigable waterways. Eight percent to State Conservation Department to support various activities. Fourteen percent deposited in State General Fund.
Colorado	Severance tax deposited in State General Fund
Idaho	Severance tax deposited in State General Fund.
Kansas	All revenue from Oil, Gas and Minerals Severance Tax is deposited in State General Fund. All revenue from Sand and Gravel Royalty Tax is returned to counties.
Kentucky	Proceeds from severance tax are placed in short term investments. Semi-annually counties receive money for special projects. All remaining money is deposited in State General Fund.

STATE	APPLICATION OF SEVERANCE TAX REVENUE
Louisiana	Ninety percent of severance tax revenue is retained by the State for general purposes. The remaining 10% is allocated to parishes (counties).
Minnesota	Minnesota deposits 10% of the Taconite Production Tax in their general fund. Ninety percent is returned to districts where taconite is produced. All proceeds from the Ore Royalty Tax are deposited in State General Fund.
Mississippi	Of the Timber Severance Tax, 50% is allocated to the Forest Redevelopment Fund, 25% is returned to counties and 25% is deposited in State General Fund. The State levies taxes on gas production with 30% going to participating counties and 70% to State General Fund. Mississippi also imposes a tax on oil production. Counties receive 30% of the first $600,000, 10% of the next $600,000 and 5% thereafter. The balance is deposited in State General Fund.
North Dakota	Thirty-five percent of the taxes which North Dakota levies on coal extraction goes to the Coal Impact Office. The Office then allocates money on the basis of application for public projects in the areas where coal is mined. Thirty percent is allocated to the Land Board Trust Fund. Two-thirds of this is used to finance environmental studies. One-third is invested with interest proceeds deposited in State General Fund. Thirty percent is deposited in State General Fund. Remaining 5% allocated to counties.
Ohio	Seventy-five percent of severance taxes are used for the restoration of orphaned strip mining land. Twenty-five percent is allocated to replug abandoned oil and gas wells which are deemed as hazards.
Oklahoma	State General Fund receives 85% of severance tax revenue. Fifteen percent is allocated to counties.
Utah	All revenue from severance taxes is deposited in State General Fund. Expenditures are then allocated by State legislature.

Exhibit IV

ORGANIZATION AND MANAGEMENT

Tentative Organizational Structure

Governor

. Appoints Public Members of Policy Board of Directors

Legislative

Confirms Public Policy Board of Directors Appointments
Determines Use of Fund Income
. Determines Percentage Allocation of Natural Resource Revenues to Fund if over 25%

Policy Board of Directors

. 12 Members
. 4 Permanent/Government Members
  - 2 Legislators
  - 2 Commissioners
. 7 Public (Appointed Members) - Staggered Terms
. Fund President (Non-voting)

Duties and Responsibilities

. Determines Fund Policies
. Reports to the Legislature and to the Public on Fund Operations
. Selects Fund President
. Approves Fund Budgets
. Performs Audit, Operational and Performance Analysis of Fund
. Responsible for Sectoral Analysis of Alaskan Economy
. Approves Loans and Investments in Excess of Specified Amounts
. Appoints Public Members of Investment Committee

Investment Committee

. 5 Members
  - Fund President (Chairman)
  - 4 Public/Appointed Members

Duties and Responsibilities

. Approval of Loans and Investments
. Determination and Review of Funds' Organization and Operating Policies

Fund Personnel/Advisors

- Fund President
  - Chief Operating Officer
- Fund Staff
  - Invest or Re-invest Moneys not subject to Investment Committee or Policy Board Approval
  - Evaluate Loan and Investment Proposals; Prepare and Package Loan and Investment Proposals for Presentation to Investment Committee for Approval
  - Supervision and Monitoring of Investments
- Employ External/Internal Advisor (s) to assist in above functions
- Operating Management
  - Accounting and Control

Exhibit V

Exhibit IV

INVESTMENTS

Corporate Securities

The purpose of the following discussion is to summarize briefly the principal characteristics of the various types of debt and equity securities most frequently issued by publicly owned corporations in the U. S. Although the discussion confines itself to the characteristics of publicly issued securities, these characteristics also apply generally to privately sold securities. The last section discusses the primary difference between publicly issued and privately sold corporate securities.

Debt Securities

Debt obligations are incurred by corporate entities for various reasons, the most important of which are to provide funds for the acquisition of fixed assets or to add additional cash resources to the borrower's supply of general working funds on a semi-permanent basis. The issuance of debt generally permits the borrower to accelerate its rate of growth beyond that which it would be capable of achieving were it solely dependent upon its own internally generated capital funds. Although debt securities can be of various types, all rely on the borrower's future revenues as the principal means of repayment.

Corporate Debt Holders

The holders of corporate debt instruments are creditors of the borrower; they generally cannot exercise control over its affairs and do not have a voice in its management unless it has violated certain of the provisions of the contract governing the borrowing. In addition, debt holders are not entitled to participate in the residual earnings of the borrower; instead, their return is limited to the fixed coupon rate of the security. Further, a debt security has a specified maturity date whereas a share of common or preferred stock has no fixed maturity. Importantly, the claims of creditors rank prior to those of common and preferred stockholders, although there may be differences in priority of claim among the various creditors themselves.

Principal Features of Debt Securities

The five principal aspects of a debt instrument are its fixed return (or "coupon"), its maturity, its repayment provisions, its redemption provisions and its restrictive covenants.

The coupon of debt instrument is determined by many factors, principally the credit standing of the issuer, the term of the borrowing and the market rates for similar issues of comparable companies at the time of the borrowing. Generally, the lower the credit standing of the issuer and the longer the term of the borrowing, the higher will be the interest coupon. An additional important influence

on the level of the interest coupon is the form of the security, and senior or secured obligations commonly carry lower interest coupons than unsecured or subordinated obligations. Certain subordinated obligations convertible into the common stock of an issuer may, however, carry a lower coupon than the same borrower's senior obligations in recognition of the conversion feature. Other factors also impact the level of the interest coupon on certain types of debt securities, with the repayment schedule over the term of the borrowing and the length of the period during which the issue cannot be optionally prepaid by the issuer bearing importantly on the interest coupons of long term borrowings. A more rapid repayment schedule and a longer prohibition on prepayment will usually contribute to a lower interest coupon. Finally, borrowings with extremely liberal contractural provisions commonly require higher rates of interest.

The maturity of a debt security denotes the date on or by which the entire principal amount of the borrowing must be repaid. In the U. S., the most common maturities for publicly issued debt securities are 5, 10, 20, 25 and 30 years. Intermediate term securities (securities with maturities up to ten years) frequently are repayable only at maturity via a single lump sum payment. Longer term issues (securities with maturities of 20 to 30 years) generally require periodic repayment, beginning after a certain number of years, through the means of a sinking fund. If a debt security has a sinking fund, the issuer must make periodic payments to a trustee, who uses these funds to purchase the securities in the market and retire them. A sinking fund is valuable to securities holders as it provides support for the market price of the issue and provides for the orderly repayment of the borrowing. The amount of a required sinking fund payment may be fixed or variable, depending on the terms of the borrowing. Most issues either require fixed payments during the repayment period (referred to as a level sinking fund), increasing payments over the repayment period, or fixed payments in each year except the last when a larger (or "balloon") payment is required. In certain cases borrowers are permitted to anticipate future sinking fund payments by "doubling up" or to surrender securities purchased in the open market in lieu of making a cash payment. Types of sinking fund schedules other than the above, including schedules which only require repayments to be made when earned, are used infrequently.

Some debt issues are serial issues. Instead of being a single issue subject to a sinking fund, a serial issue consists of separate securities which mature periodically until the final redemption date. Because of the differences in the maturities of the securities comprising a serial issue, it is common for a serial issue to be split into two or more tranches each bearing a different interest coupon.

In most debt issues, the borrower is given the right to buy back (or "call") all or a portion of its issue prior to maturity at a specified price. Commonly, the borrower is only allowed to exercise this right after a certain number of years. In some circumstances, the borrower is allowed to call its issue immediately. A call provision favors the borrower over the investor as, if an issue is called to permit the borrower to refinance at a lower interest cost, an investor may not be able to reinvest at an equally high yield. As a result, a borrower usually has to pay a premium over par value when it calls its securities, which normally amounts to one year's interest and declines to zero one year prior to maturity. Many intermediate term issues are callable only one or two years prior to maturity, however, at no premium.

For most debt issues, the contract between the borrower and the lender contains restrictive provisions designed to provide a measure of protection for the lenders' investment over the term of the borrowing. Usually these covenants limit such items as the amount of the borrower's additional debt, dividend payments, leases and mergers. Two of the most important restrictive provisions are the negative pledge provision - which prohibits a borrower from pledging its assets to secure future debts - and the cross default provision - which accelerates the repayment of the issue if the borrower defaults on certain of its other debts. Frequently, these covenants are contained in an indenture between a corporate trustee (generally a bank) and the issuer. If no indenture is used, these covenants are usually contained in the terms of the security itself. The extent of the restrictions placed on a borrower depends on his credit standing and the term of the issue.

Types of Debt Instruments

The two principal types of corporate debt securities are generally referred to as "notes" and "bonds" or "debentures". Notes are typically short to intermediate term obligations which are either payable in full at maturity or subject to a limited sinking fund, are callable at par one to two years prior to maturity and are not governed by a formal indenture. The restrictive covenants of a note issue are generally contained in the security itself and the provisions governing the operational aspects of repayment are found in an accompanying fiscal agency agreement between the borrower and a bank. Notes of the form described above are generally unsecured obligations. Notes, however, may be secured obligations and subject to a formal borrowing agreement with a corporate trustee.

The terms "bonds" and "debentures" are used interchangably to refer to unsecured long term obligations governed by a formal indenture between a corporate issuer and a trustee. Bonds and debentures usually require a sinking fund and permit a call by the borrower only after a certain number of years.

A mortgage bond is a bond issue secured by a lien on specific assets (usually fixed assets) of the borrower. The mortgage providing the lien to the bondholders may be closed-end or open end. Under a closed-end mortgage, no further bonds can be issued against the specific property. Under an open-end mortgage, the borrower can issue additional bonds under the same lien. To prevent an unlimited amount of indebtedness from being issued against specific property, most open-end mortgage bonds contain restrictions limiting the total debt under the mortgage to a certain percentage of the value of the pledged assets. Many mortgage bonds also contain an after-acquired clause which extends the lien to properties acquired after the date of the initial issue. Although mortgage bonds are secured by specific assets, a bondholder is nevertheless required to look to the earning power of the issuer as his primary source of repayment.

The most common type of mortage bond is a first mortgage bond and is so called because its security is a first lien on the pledged assets. A second mortgage bond is exactly the same as a first mortgage bond except that it is secured by a second lien on the pledged property. Second mortgage bonds are used less frequently than first mortgage bonds.

Collateral trust bonds are bonds secured by stocks or bonds or other securities pledged by the issuer to a trustee. In the event of default, the trustee sells the collateral and repays the bondholders. This type of bond, popular in the 1920's and 1930's, is now used infrequently.

Income bonds are securities whose interest is required to be paid only when earned by the issuer. This type of issue offers an investor little hope of a fixed return and its use has generally been restricted to corporate reorganizations.

A subordinated debenture is a security which is subordinated in right of payment to other indebtedness of the issuer. Such securities, however, are senior to both common and preferred stock in liquidation. Because of their status, subordinated debentures are commonly regarded by senior lenders as near-equity and consequently can support further senior borrowings. It is possible for an issuer to have several issues of subordinated debt outstanding and for one issue to be subordinate to another; such issues are called junior subordinated debentures.

Convertible debentures are debentures which may be converted into the common stock of the issuer at a specified price. Such debentures are usually subordinated and from the standpoint of a senior creditor are viewed as equity when the market price of the related stock is reasonably close to or above the specified conversion price. When the market price of the related stock is well below the conversion price, convertible debentures are viewed as non-convertible subordinated issues.

INVESTMENTS

Equity Securities

Common Stock

The most important type of equity security is common stock. Collectively, holders of a company's common stock are its owners and are entitled to share in its residual earnings if dividends are paid. They are also required to bear the risks of ownership, but their liability is generally limited to the amount of their original investment. In liquidation, common stockholders have a claim on the assets of the company only after the claims of all creditors and preferred stockholders have been settled in full. Unlike a debt security, common stock has no fixed maturity date; the only way in which a shareholder can realize his investment is to sell his shares in the secondary market.

Authorized common stock is the number of shares which a company can issue without amending its charter. Issued shares are shares which have been sold to the public. Outstanding shares are shares which are in the hands of the public. Treasury shares are shares which have been repurchased but not cancelled by the company.

The par value of a common stock is a stated figure in the corporate charter. Although it is used in the preparation of accounting material, the par value of common stock has little economic significance. Stocks may be authorized without par value and there is no difference in value between a par value and a no par value stock.

The book value of a common stock is derived by dividing the net worth of the issuing company, less the par value of any preferred shares outstanding, by the number of common shares. In theory, the book value of a common stock is its liquidating value, but in reality the actual liquidating value may be higher or lower than the book value. Like par value, the book value of a common stock is of little economic significance.

The market price of a common stock is the price at which the shares are being traded in one of the stock exchanges or in the over-the-counter market. The market value of a common stock usually will differ considerably from its par value, book value or liquidating value as it is a function of the company's current and anticipated future earnings and dividends and the perceived risk of the stock on the part of investors. The market capitalization of a company is equal to the number of outstanding shares times the market price per share.

As owners, common shareholders are entitled to elect the company's board of directors which, in turn, selects management and runs the business. The only recourse a shareholder has against management is via the board of directors. If a director acts in a manner which results in personal gain, he is liable to suit. In electing directors, a shareholder is entitled either to vote all of his shares for each director (majority voting) or to vote all of his shares, multiplied by the number of directors to be elected, for less than the total number of directors being elected (cumulative voting).

Certain companies may have one or more classes of common stock differing in their claims on income and as to voting power. One class of stock may have no voting privilege but be entitled to a prior claim on dividends while another may have voting power but a junior claim on dividends. The use of various classes of common stock is generally adopted when it is desired to concentrate the voting control of the company in a single group.

Occasionally, a common stock has preemptive rights. A preemptive right entitles a shareholder to maintain his proportional ownership interest in the company by giving him the first opportunity to purchase, on a pro-rata basis, any new common stock or convertible securities being sold to the public.

Preferred Stock

Preferred stock is a hybrid type of security, combining certain features of both debt and common stock. Like debt holders, holders of preferred stock do not participate in the residual earnings of the issuer and their rate of return is limited to the specified dividend of the preferred stock. Unlike interest payments on debt issues, however, preferred dividends can be omitted without resulting in the insolvency of the company. When preferred dividends are omitted, holders of preferred shares are usually entitled to elect a certain number of directors; otherwise, preferred shareholders do not participate in the management of the issuing company. Most preferred dividends are cumulative and if they are omitted, all arrearages must be made up before common dividends can be resumed. Preferred dividends are a contractural obligation, and are senior in right of payment to common dividends.

Preferred stock, like common stock, has no specified maturity. However, preferred stock is rarely viewed as a permanent means of financing and provisions are usually made for an issue's orderly retirement via a sinking or purchase fund. A preferred stock sinking fund operates in the same manner as a bond sinking fund. A purchase fund requires the issuer to expend a certain sum each year to acquire and retire the outstanding shares, but this requirement is usually limited by restricting the price which can be paid for the shares to par value. If the market price is above par, no purchases will be made for the purchase fund.

Practically all preferred stocks have call provisions similar to those of corporate bonds. Certain preferred stocks are convertible into the common shares of the issuer. Other preferred stock issues are participating and share in the residual earnings of the issuer according to certain formulae, usually based on common dividends.

Differences Between a Public and a Private Securities Issues

A securities issue which has been registered with the Securities and Exchange Commission and sold in an underwritten offering by a syndicate of investment banking firms is referred to as a public issue. Such issues, whether listed on a major stock exchange or traded between dealers, are freely transferable between holders and consequently offer an investor a high degree of liquidity.

A securities issue which has been sold directly by an issuer to an institutional investor (such as an insurance company) without registration with the Securities and Exchange Commission is referred to as a private issue. Because they are not registered, private issues are not freely transferable and their marketability is consequently very limited. To compensate an investor for this lack of liquidity, private debt issues usually carry higher interest coupons and more restrictive covenants than similar public debt issues. Similarly, private equity issues generally cannot be sold at as advantageous prices as public equity issues.

INVESTMENTS

Long Term Government Securities

The direct obligations of the U. S. government and its agencies, together with securities bearing the full faith and credit guarantee of the government, constitute the highest quality debt securities in the U. S. Although certain of such securities, principally Treasury bills, are issued for very short maturities, a substantial amount is issued for maturities ranging from three to thirty years. Short term government securities are considered in the following section on Money Market Instruments.

The principal long term direct obligations of the U. S. government are Treasury notes and bonds which are usually issued for maturities of up to ten and thirty years, respectively. Such bonds and notes are sold periodically directly by the Treasury and a substantial amount is outstanding at all times; secondary market trading is very active.

Along with the direct obligations of the Treasury, the government also raises funds through its agencies which issue both short and long term securities either guaranteed by the government directly or backed by the agencies, which are themselves instrumentalities of the government. Many government agencies issue such securities, but principal among these are the Federal Home Loan Banks, the Federal National Mortgage Association, the Federal Land Bank and the Bank for Cooperatives. Issues of these borrowers are generally sold through public offerings underwritten by banks and investment firms.

Through Acts of Congress, the government has also authorized certain quasi-government entities to issue securities bearing its full faith and credit guarantee including the Export Import Bank of the U. S. and Private Export Funding Corporation. Congress has also authorized the application of its guarantee to securities of private corporate issuers for specific purposes, including bonds issued to finance the construction of U. S. flag ships under the provisions of Title XI of the Maritime Act. Such bonds have recently begun to be issued in significant amounts and are generally referred to as Title XI bonds.

Exhibit VI

Exhibit V

INVESTMENTS

Money Market Instruments

Money market instruments are short-term, high grade debt instruments that carry a minimum amount of risk and which can readily be turned into cash without material loss. Because of their relatively short maturity, generally no more than twelve to twenty-four months, money market instruments have a readily stable market value at all times. The principal types of money market securities are Treasury bills, notes and bonds, securities guaranteed by the government or issued by its agencies, municipal securities, bank certificates of deposit, bankers acceptances and corporate commercial paper. These securities are frequently purchased by investors seeking a temporary investment for surplus cash resources.

Treasury Securities

The Treasury securities which are most often referred to as money market instruments are Treasury bills and Treasury notes and bonds maturing within two years. Treasury bills, issued at auction each week and maturing in periods from three months to one year, are the backbone of the money market. Because of the large volume of Treasury bills outstanding and their continual issuance, a short term investor can normally find an issue with a maturity on or close to the date when his surplus funds will be required for their intended purpose.

Treasury bills are issued in bearer form and on a discount basis. The holder receives the full face value of the security at maturity in lieu of interim interest payments.

Treasury notes and bonds are government secuirities which have original maturities of over one year. Both are issued in bearer form and interest is payable upon presentation of a coupon. Treasury notes by law may not have a maturity in excess of ten years while Treasury bonds generally mature in more than ten years. As either Treasury bonds or notes move into the under two-year money market maturity range, they become attractive investments for investors who wish to invest for longer maturities than offered by Treasury bills.

Other Government Securities

A large number of government agencies also issue securities which are either guaranteed directly by the government or fully backed by the agencies themselves which are conservatively run entities chartered by Congress and supervised and/or owned by the government. Among such issuers are the Federal National Mortgage Association, the Federal Home Loan Banks, the Federal Land Banks, the Government National Mortgage Association, the Federal Intermediate Credit Banks and the Banks for Cooperatives. Securities of these issuers are sold on both a coupon and a discount basis and for various maturities from three months to twenty years. Most issues are relatively short-term, however, and fall either directly into the money market or are drawn in as their maturity date approaches.

The attraction of these securities to money market investors is that their yields are somewhat higher than those of Treasury securities in light of the fact that they are indirect rather than direct obligations of the government.

Municipal Securities

Municipal securities possess two characteristics that are important prerequisites for a money market instrument: a large outstanding supply of obligations of various types and maturities and an active secondary market. The principal types of municipal securities traded in the money market are short term notes and long term bonds, drawn into the money market as their maturity approaches. Municipal securities are attractive to investors because of their tax-exempt yields.

Certificates of Deposit

A Certificate of Deposit is a negotiable instrument representing an interest bearing time deposit in a commercial bank. Certificates of deposit (CD's) began to be issued by commercial banks in 1961 and are ideal instruments for the investment of short term idle cash because a purchaser (lender) can negotiate with the bank seller (borrower) to tailor a CD to his exact maturity needs. Moreover, there is a very substantial amount of CD's outstanding and the secondary market is extremely active; if unforeseen circumstances arise an investor can sell his CD's in the marketplace. The interest rate on CD's is higher than that for either Treasury or agency securities of the same maturity.

Banker's Acceptances

A banker's acceptance is created when a commercial bank "accepts" (endorses) a draft drawn on it for the account of one of its customers for payment on a specified future date. Time drafts are usually associated with the payment for goods shipped in international trade. By accepting a time draft, a bank substitutes its credit for that of its customer and an accepted draft thus becomes similar to a security of the bank itself. Because of the very short maturity of most banker's acceptances, usually not more than ninety days, they are readily sold in the money market.

Commercial Paper

Commercial Paper is an unsecured promissory note of relatively short maturity issued by a well known corporation with good credit ratings to finance short term borrowing needs. Commercial Paper, because of Securities and Exchange Commission requirements, may not be issued for maturities longer than 270 days. All commercial paper is sold in bearer form at a discount with rates running slightly higher than Treasury bills. Because of their short maturity and high liquidity, commercial paper is an ideal money market instrument.

Exhibit VII

INVESTMENT COUNSEL ASSOCIATION OF AMERICA

STANDARDS OF MEASUREMENT AND USE FOR INVESTMENT PERFORMANCE DATA

INTRODUCTION

In recent years, the measurement of investment performance has become a topic of widespread interest. The techniques employed and the uses of the results have been varied and remain in a considerable state of change. Consequently, it is often impossible to gain perspective through comparisons of different investment records measured with different calculation methods. The principal problem is that there are no minimum, uniform standards for measurement and use guiding all organizations providing investment management services.

This report will formulate standards to provide the Investment Counsel Association of America membership with some guidelines and background information for compiling and using portfolio performance data. The problems associated with measuring investment results are complex and make it extremely difficult to arrive at a satisfactory and still simple solution to them. The central problem is that rarely, if ever, do two distinct portfolios have identical characteristics and investment objectives. erefore, an attempt to compare the success of different investment programs solely on the basis of quantitative, statistical results without regard to the qualitative, individual, subjective circumstances must have limited value. However, despite the imperfect character of purely numerical measurements, the Investment Counsel Association of America does endorse certain standards of measurement and use. The recommendations are not intended to deal with

every facet of performance measurement. Some areas are intentionally treated in a general way in order to provide scope for adapting the subject to varying circumstances and also because being too specific on some subjects would result in having to establish more "rules" to deal with exceptions than seems practical. Therefore, this report is confined primarily to recommendations of minimum standards on how to calculate performance data and how best to use this information. Moreover, while performance measurement of specific portfolios for manager or client use has unquestioned individual value, this report is written with the objective of facilitating performance comparisons between portfolios and the recommendations are stated accordingly.

No firm is required to adopt these recommendations unless it wishes to make the statement regarding the presentation of investment performance figures that: "All Representations are in Accordance with Standards Approved by the Investment Counsel Association of America."

There are many purposes served through comparisons of different portfolio performance records. Perhaps the purpose which is the most controversial is the presentation of a performance record in an effort to demonstrate to prospective clients the abilities of an investment manager. It is very difficult to construct a sample of data which is an accurate picture or is representative of a manager's work. The difficulties of data construction and interpretation exist whether the data sample is one account, ten accounts, or all of a manager's accounts, either of a certain class (by account type, size, performance rank, etc.) or in total. A major goal of the recommendations in this report is to provide a systematic approach to this problem. The solution, and the concept of this report, is that the following recommendations are not

isolated from each other but stand together as flexible parts of a unified filtering process. In most instances, the recommendations act as guides and are not narrowly restrictive. They encompass many filtering alternatives and the only general restrictions are disclosure and willingness to substantiate representations if requested.

Performance figures might be selected for presentation including (1) total portfolios of (2) all (3) corporate pension funds (4) managed continuously (5) during a five-year period and (6) with assets at the end of the period in excess of $1 million. The rates of return would be (a) calculated and displayed along the lines of the techniques described in this report, (b) captioned and/or footnoted to disclose that they include accounts filtered or selected with the six above criteria and (c) substantiated, upon request, as being representative, for example, if a median statistic, one account or ten accounts were used to represent all accounts. Within these same conditions, one account with a very favorable rate of return could be held out as an example of a firm's work so long as (a) the return calculations are appropriate, (b) it is disclosed that the account was selected and has one of the best rates of return of all accounts managed and (c) it is substantiated that it is only representative of itself and no other account managed by the firm.

RECOMMENDATIONS:

I Standards of Measurement

1. Total Return: Investment results should be computed on a total return basis.

2. Rates of Return: Investment results should be computed as "time weighted" rates of return for use in making comparisons with market indices and results of other portfolios.

3. Total Portfolio and Various Portfolio Segments: Investment resul. should be computed on the total portfolio and, where useful to demonstrate the ingredients of the total results or specific areas of investing, on the portfolio's various segments.

4. Definitions within Portfolio Segments: Investment results for portfolio segments should be based on comparable characteristics such as types, marketability and size of holdings.

5. Total Time Period Shown: Investment results quoted to third parties should include at least five years' experience where possible.

6. Time Intervals Used: Investment results should indicate the total rate of return on an annual basis and on a compound annual basis for multiple time periods.

7. Variability of Return: Investment results should be characterized not only by the magnitude attained but also by the degree of variability experienced in reaching the return.

II Standards of Use

1. Management Discretion: Investment results should be used to reflect the manager's performance only if he operated with effective discretion.

2. Number of Results Shown: Investment results should be shown for all portfolios within the designated category. Adequate disclosure should be made regarding the description of the sample shown. If requested, substantiation should be provided of representations made.

3. Tax-Exempt Portfolios: Because of the differences in impact on investment results of various tax brackets, some common base should be used when comparing rates of return. Tax-exempt portfolios automatically solve this problem and are preferred for use.

4. Similarity of Investment Objectives: Comparisons of investment results should be made only for portfolios with similar objectives.

5. Size: Comparisons of investment results should be made only for portfolios within reasonable categories of size.

6. Relevance to Third Parties: The selection of investment results shown should relate in some logical way to the circumstances of those receiving the information.

7. Comparative Format: Investment results should be shown in a way to facilitate comparisons.

8. Distribution of Information: The distribution of investment results is regulated under the Investment Advisers Act of 1940 and care should be taken to comply with these regulations.

DISCUSSION

I Standards of Measurement

Total Return

The investment results of a portfolio should be measured in terms of all the results produced. This includes the income generated as well as capital gains and losses both realized and unrealized. These are the three ingredients of performance and, even though a portfolio might not be managed on a "total return" concept, the only proper approach is to measure all of the portfolio's output. There is a considerable body of disagreement on this, particularly regarding the accounting for unrealized capital gains. We recommend that investment results be measured on an accrual accounting basis from period to period and not on a cash accounting basis that might require that the capital gains be realized or income (e.g., bond interest income paid out semi-annually) be received before being credited to portfolio performance. An acceptable procedure to account for income accruals is to estimate income by using the indicated annual rate of income at the beginning of the period. In each quarterly performance computation, this amount would be dividend by four.

Rates of Return

Rates of return are of two general types: dollar weighted (or internal) and time weighted. The dollar weighted rate of return has specific value in measuring a given portfolio's results and this is the most appropriate figure for comparison with actuarial assumptions for corporate pension funds. However, when comparing investment results between portfolios, the differences

in size and timing of cash flows can create considerable distortions. It can be argued that a dollar weighted rate of return is appropriate for use when measuring only the common stock portion of a portfolio because the investment manager has control over the timing and amounts of cash flows into and out of equities within the portfolio. However, whereas this is true to some extent, these judgments are often influenced by cash flows into and out of the total portfolio. We have concluded that the time weighted rate of return is appropriate for use in making comparisons between total portfolios as well as various segments of portfolios and, also, with market indices which are by default time weighted because there are no cash flows.

It is difficult for many organizations to provide an exact time weighted rate of return measurement because of the necessity to revalue the entire portfolio whenever significant cash contributions or distributions are made. Therefore, we believe that an approximate time weighted rate of return is satisfactory in most cases and recommend the following principles be observed:

1. The portfolio be valued at least quarterly.

2. A formula should be used to minimize the impact of cash flows on performance results within a measurement period. One such formula is:

$$R = \frac{V^2 - V^1 - C + I}{V^1 + 1/2C}$$

Where V_2^1 = beginning market value = $1,000,000.
V^2 = ending market value = $1,200,000.
(including reinvested income)
C = net cash flow = $ 100,000.
(from any source including reinvested income)
I = total measurement period income = $ 10,000.
R = rate of return

$$R = \frac{\$1,200,000. - \$1,000,000. - \$100,000. + \$10,000.}{\$1,000,000. + 1/2(\$100,000.)}$$

$$R = \frac{\$ \ 110,000.}{\$1,050,000.} = 10.5\%$$

The formula states that the total rate of return for the time period is equal to what was earned in both price change and income (the numerator) as a percentage of the capital at work (the denominator). The amount earned is the difference between the beginning and the ending market values, adjusted for the net of all capital additions and withdrawals because they are not part of the return, and adjusted again for income because it is part of the total return. The capital at work is the beginning market value plus one-half of the net of all capital additions and withdrawals. The one-half is used because no effort is being made to identify the dates of cash flows. They are being netted together and the assumption is being made that they all took place at the mid-point of the time period. So, rather than saying the entire cash flow was at work for half the time, the formula says one-half the cash flow was at work the entire time. When the contribution C is very large relative to the beginning market value V^1 (e.g., over 10%) it may be necessary to modify the use of the above formula or value the portfolio as of the date of the cash flow to remove possible distortions by eliminating any sub-period containing an overly large cash flow.

3. A linked index should be used in keeping a record of this performance data over time and provides a means of developing annual figures from separate quarterly calculations. Such an index would be as follows:

	% Change	Index
Beginning Value	-------	100.0
Period 1	+5.0	105.0
Period 2	-3.6	101.2
Period 3	+1.8	103.0
Period 4	+6.2	109.4

Overall Return +9.4%

Total Portfolio and Various Portfolio Segments

The most appropriate comparison between portfolios is to show the results of the total portfolio investments. An extra dimension is given when the total portfolio returns are supplemented by percentage figures showing the proportions held in various portfolio segments. It is often useful to demonstrate bond management or stock management using the bond and stock segments of a total portfolio balanced between bonds and stocks. Therefore, it is also recommended that segments of different portfolios be used for comparisons to measure selection and also the impacts of timing of shifts between portfolio segments. The procedure described above for calculating rates of return on total portfolios is the same used for portfolio segments such as common stocks. When computing the performance of an equities only segment, however, it is necessary to compute the net cash flow as equal to the difference between the total of all common stock purchases and the total of all common stock sales during the period.

Definitions within Portfolio Segments

When comparing segments of portfolios such as the common stock segment of one portfolio with the common stock segment of another portfolio, it is important that the segments have comparable characteristics. It would not, for example, be appropriate to compare the common stock portfolio of a corporate pension fund which was 25% invested in the company's own stock with the common stock portfolio of another pension fund which had no such distortion. Managers inherit portfolios from a variety of sources which might hold concentrations in poorly marketable securities which would take time to

work out of successfully. The manager should not be charged with the distortions produced, good or bad, during a prolonged period of liquidation. There are also differences in treatment of types of holdings. In the case of convertible securities some treat them as part of the portfolio's bond holdings, some treat them as common stocks and some divide them between those convertible issues selling near their base investment value as a straight bond and those convertible issues selling more on a common stock equivalent basis. Finally, it is not appropriate to compare results for diversified and undiversified portfolios. For example, "bond performance" should not be compared on the basis of one portfolio which has 30% invested in bonds including a diversified list of issues and another portfolio which might be of equal total dollar size but have a much smaller percentage of the total portfolio devoted to bonds and, perhaps, use only one or two issues.

Total Time Period Shown

The five-year time period for investment results is designed to be long enough to cover most business and market cycles. The minimum objective should be a length of time encompassing at least one market cycle containing rising market and declining market periods in order to permit an assessment of investment performance during both types of markets. Depending on the timing of market cycles and the fact that they do not usually open and close in consonance with the calendar, there will inevitably be occasions when a total time period of less than five years will be more appropriate.

Time Intervals Used

Within the total time period shown, the time interval recommended is one year with some indication of results for multiple time periods on a compound annual basis. An example of this type of presentation is illustrated below:

	Annual Rates of Return					Compound Annual Rates of Return			
	1969	1970	1971	1972	1973	2 years '72-'73	3 years '71-'73	4 years '70-'73	5 years '69-'73
Fund 1	-5.2	8.3	12.8	19.0	-15.5	0.3	4.3	5.3	3.1

(All figures are hypothetical)

Variability of Return

It is not sufficient to know that a certain magnitude of return was attained. It is also valuable to know the degree of variability experienced in reaching the return. An appropriate way to express this variability is through the use of some statistical measure of dispersion of the sub-period rates of return around their average rate of return. The standard deviation is recommended as a means of quantifying dispersion. It is a widely used measure and, although there are a number of other techniques to measure dispersion, it is appropriate as a minimum supplement to rate of return figures.

The standard deviation indicates the limits within which the sub-period returns vary in producing an average return for a total time period. In normal distributions of a series of returns, plus or minus one standard deviation from the average would encompass approximately 68% of the returns. Plus or minus two standard deviations from the average would encompass 95% and plus or minus three standard deviations would encompass 99%. The task, then, is to calculate one standard deviation as the basic unit.

It is suggested that the sub-period returns be quarterly figures. The standard deviation of the quarterly rates is found by:

(1) obtaining the arithmetic average
(2) calculating the deviations of each rate from the average
(3) squaring each individual deviation
(4) taking the average of these squares
(5) extracting the square root of this average

Since these calculations produce the standard deviation of the quarterly rates, it is necessary to make a conversion so the standard deviation can be used as a supplement to rate of return figures expressed as compound annual rates. This is accomplished by multiplying the standard deviation of the quarterly rates by 2, the square root of the number of quarters in one year.

NOTE: See calculations at end of report.

II Standards of Use

Management Discretion

A primary purpose for generating performance figures is to provide a quantitative basis for evaluating the job done by the portfolio manager. It is only fair, then, for the results to reflect truly the manager's performance without an undue overlay imposed by others. This overlay may take the form of policy constraints (e.g., a current income requirement, ceilings on percentage to be invested in common stocks, restrictions as to the types of securities to be purchased, etc.) or approval mechanisms involving rejection of proposed investments. The investment results should reflect the portfolio manager's decision process. Although we recognize that the effective discretion of a portfolio manager might not be within the legal

definition of "discretionary," we believe a portfolio should be presumed to be discretionary if the portfolio manager can arrange purchases and sales of securities of his selection (within reasonable limits) and vary the portfolio mix between stocks, bonds, or cash equivalents without undue restrictions on his own best professional judgment.

Number of Results Shown

Selection criteria for a statistical sample of any size must be accurately disclosed to identify what the sample includes. The criteria might be complex (e.g., common stocks only of accounts which are fully discretionary, tax-exempt, managed by a firm's New York office for five years, etc.) or simple (e.g., "our best account" or "our three largest accounts") but they must be disclosed. Whatever the basis for selection of investment results to be shown, all accounts described by the selection criteria must be included. Although the quantity of accounts shown can be controlled by the specifics of categorization filters, the account sample must be complete as described.

A broad sample is desirable because the record of one portfolio or several portfolios is not statistically significant as the record of a portfolio manager or an entire firm of portfolio managers managing many portfolios. One account cannot be presumed to be representative of an individual's or firm's work unless the individual or firm so states and is prepared to substantiate. Therefore, it would not usually be appropriate to compare two firms of portfolio managers by comparing one account

of one firm with one account of another firm. This is true for any type of portfolio, including mutual funds or any other commingled funds. The use of one account may be appropriate in representing itself when it is desirable to show the results of specific types of investing such as with a high risk mutual fund, a mutual fund of international securities or a mutual fund whose policy it is to keep pace with general market averages. Furthe ›re, a single portfolio, pension fund, mutual fund or otherwise, should not be used by any firm as representative of another firm unless that firm has so stated and substantiated. It is not one firm's realm to present another firm's record. A firm's responsibility is to represent itself and not others.

In presenting investment performance results, it is appropriate to use summary statistical techniques such as averages, medians, etc., as long as they are representative of a broad sample of similar portfolios. Statistical and graphic representations should be specifically footnoted to disclose what they represent and a firm using them should be prepared to substantiate the representations by standing ready to describe the details of the underlying calculations. This substantiation should at a minimum contain the data presented in the attached worksheets.

Tax-Exempt Portfolios

The purpose of showing investment results of existing clients to third parties is to provide an illustration of what has been achieved under varying conditions. Due to differences in impact on investment results of various tax brackets, it is difficult to compare the results of different taxable portfolios. In order to demonstrate the investment process, the

common base of tax-exempt portfolios can be used with both tax-exempt and taxable third parties.

Similarity of Investment Objectives

No two portfolios are exactly the same. Inevitably, there is some variation between different portfolios and their objectives. However, comparisons of investment results should be made only for portfolios with generally similar objectives and involving acceptance of the total return approach.

Size

Size is an important consideration and effort should be made to compare portfolios only within reasonable categories of size. It is inappropriate to compare the investment results of very small portfolios with very large portfolios due to the great differences in operational flexibility. The use of a size threshold is suggested such as including only portfolios over $1 million.

Relevance to Third Parties

The selection of investment results to be shown should have some relationship to the circumstances of those receiving the information. For example, it is logical to show investment results which include a number of employee benefit funds in response to an inquiry from an employee benefit fund.

Mutual fund performance data are often used because they are a "public record." We conclude that this general use relates more to the integrity of an audited public statement rather than to the relevance of this record

and recommend that specifically selected investment results be used which have as close as possible a relationship to the third party viewing them.

Comparative Format

There are three general comparisons which might be drawn by those receiving a statement of investment results and the statement format should facilitate such comparisons.

1. The investor should be interested in the absolute level of accomplishment compared to his own goals. This does not speak to the realism of these goals whether they be achieving an actuarial assumption or some other pre-stated quantitative objective. He wants to assess the accomplishment relative to his own special standard.

2. The investor should be interested in the relative level of accomplishment within various market environments.

3. The investor should be interested in the relative level of accomplishment compared to some general representation of how others fared during the same time.

The first comparison uses the investor's own calculations and standards.

The second comparison requires some representation of the market environment. The widely used market averages involve a variety of calculation methods so that the results vary depending on market circumstances. This means a given index is not necessarily consistent in its reflection of the environment. The most appropriate answer (although not entirely satisfactory) is to review records of several market indices on a total return basis and assess the flow of experience over a sufficient period of time.

The third comparison requires the selection of representative universes of other managed money. This type of information has not been available for

many years but there are available universes of pension funds, mutual funds, bank commingled funds, insurance company separate accounts, etc. The integrity of the information has been high to date and provides a valuable means of comparison.

Distribution of Information

Care should be taken that any information provided third parties regarding portfolio investment results is in compliance with the Investment Advisers Act of 1940 and other guideposts, statutes, rules and court cases. In certain states, for example, any registered investment adviser must file new business materials. The judicial definitions of so-called federal "anti-fraud rules" are continually expanding to include prospect and client communications.

Outlined below are guidelines of what is deemed permissible and not permissible within the context of this report in distributing portfolio investment results.

Permissible:

Investment performance data may generally be shown which are:

1. clear disclosures of all relevant facts,
2. accurate,
3. for objectively justifiable time periods, and
4. for generally recognized categories within portfolios (e.g., total portfolio, total bonds, total common stocks) and for overall categories of portfolios (e.g., large pension funds, all tax-exempt institutional accounts).

Not Permissible:

Investment performance data may not be shown which are:

1. unclear, untrue or otherwise false or misleading and/or,
2. in the case of advertisements as defined under the Investment Advisers Act of 1940, in violation of the rules relating to advertisements.

In the Investment Advisers Act of 1940, a specific guideline is found in Rule 206(4)-1. This rule concerns "advertisements" by investment advisers and, in relation to the subject matter of this report, the most important provisions of the rule define the conditions under which distribution of an "advertisement" may constitute fraud or deception. For these purposes, "advertisement" is defined broadly as any written communication sent to more than one person (The term "person" is defined to include any organized group or persons, so that, for example, a corporate pension fund would be one person, even though it may have four people on its Finance Committee.) or any other notice or announcement in any publication or on radio or television which offers any investment advisory service with regard to securities.

One noteworthy example of circumstances under which an "advertisement" may not be distributed involves any situation where reference is made to past specific recommendations of the investment adviser which were or would have been profitable to anyone, unless the advertisement sets out or offers to furnish a list of all recommendations made by the investment adviser for the immediately preceding period of not less than one year -- a list which must contain specified, detailed information. The list must also contain

language in large type stating "IT SHOULD NOT BE ASSUMED THAT RECOMMENDATIONS MADE IN THE FUTURE WILL BE PROFITABLE OR WILL EQUAL THE PERFORMANCE OF THE SECURITIES ON THIS LIST."

Calculation Worksheet

The attached calculation worksheet utilizes quarterly rates of return derived from the formula described on Pages 7 and 8. The quarterly rates are used to develop:

1. Annual Rates - calculated by linking the quarterly rates geometrically through multiplication (not the same as the arithmetic average).

2. Compound Annual Rates - calculated by linking the annual rates for the specified time period and, then, reference to compound interest tables.

3. Standard Deviation of the Five-Year Quarterly Rates - calculated as indicated (also refer to Page 11 of report).

NOTE: The calculations described are basic to the production of investment performance figures. Of course, in large volume applications, appropriately programmed computers perform these tasks and the calculation worksheet is unnecessary.

Sample Report Format

The attached sample report format embodies the recommendations contained in this report. It is an example of how the recommendations can be used. There are a variety of alternatives and display methods which involve the use of the return figures or graphic representations of the rates of return. This example provides a basic standard for presentation or is appropriate substantiation of statistical or graphic representations. The two pages are companion pieces and the recommendations on Pages 4-5 of this report should be used as a checklist for completeness.

CALCULATION WORKSHEET *
FUND 1

Quarterly Periods	Quarterly Rates	Annual Index	Annual Rates	Compound Annual Rates	Deviation** from Average	Deviations Squared
		100.0				
1.	- 3.3	96.7			6.3	39.69
2.	14.0	110.2			11.0	121.00
3.	2.2	112.7			0.8	0.64
4.	1.5	114.4	14.4	11.4 (5 years)	1.5	2.25
		100.0				
5.	- 2.5	97.5			5.5	30.25
6.	- 2.3	95.3			5.3	28.09
7.	- 0.4	94.9			3.4	11.56
8.	4.5	99.1	- 0.9	10.7 (4 years)	1.5	2.25
		100.0				
9.	- 2.1	97.9			5.1	26.01
10.	-18.0	80.3			21.0	441.00
11.	14.6	92.0			11.6	134.56
12.	9.8	101.0	1.0	14.9 (3 years)	6.8	46.24
		100.0				
13.	8.4	108.4			5.4	29.16
14.	- 1.5	106.8			4.5	20.25
15.	0.9	107.7			2.1	4.41
16.	9.2	117.6	17.6	22.5 (2 years)	6.2	38.44
		100.0				
17.	8.4	108.4			5.4	29.16
18.	4.6	113.4			1.6	2.56
19.	5.6	119.7			2.6	6.76
20.	6.6	127.6	27.6	27.6 (1 year)	3.6	12.90
Total	60.2					1,027.18
Average	3.0					51.36
					Standard Deviation	7.2
					(Conversion Factor to annualize)	x 2
					5 Year Variability	14.4

*squares, square roots and compound rates are readily available in standard statistical tables
**squaring deviations makes them all positive so minus signs can be ignored

SAMPLE REPORT FORMAT
(Hypothetical Figures Used Below)

COMPARATIVE PERFORMANCE
(All figures are total return including price change plus income)

	Annual Rates of Return					Compound Annual Rates of Return				
	1969	1970	1971	1972	1973	2 years '72-'73	3 years '71-'73	4 years '70-'73	5 years '69-'73	5 Year Variability
ABC INVESTMENT COUNSEL, INC.										
Equity Performance of Selected Tax-Exempt Portfolios										
Fund 1	- 7.6	7.2	12.4	14.2	- 6.8	4.6	8.2	7.1	4.8	8.5
Fund 2	- 5.2	2.8	12.4	22.2	-11.0	3.3	4.1	3.7	2.2	7.9
Fund 3	1.2	- 1.5	19.0	25.6	-10.0	6.7	6.6	5.1	4.5	9.4
Fund 4	3.5	- 2.6	13.9	19.5	-14.4	2.4	8.7	3.6	4.6	8.1
Fund 5	2.0	2.6	15.0	22.6	-17.4	2.1	8.6	5.0	3.0	8.8
Fund 6										
Fund 7										
Fund 8	- ETC. -									
Fund 9										
Fund 10										
Fund 11										
Fund 12										
Fund 13	- ETC. -									
Fund 14										
Fund 15										
Equity Market Averages										
Dow Jones	-11.8	9.3	9.9	18.5	-13.3	1.4	4.1	5.4	1.7	8.6
S & P 500	- 8.5	3.9	14.3	19.0	-14.9	0.7	5.0	4.7	2.0	7.5
Mutual Fund Averages*										
Growth Funds	-15.6	-16.0	19.8	8.5	-27.8	-11.5	- 2.1	- 5.8	- 7.8	15.2

*Lipper Analytical Services

ALL REPRESENTATIONS IN ACCORDANCE WITH STANDARDS APPROVED BY THE INVESTMENT COUNSEL ASSOCIATION OF AMERICA

SAMPLE REPORT FORMAT

KEY TO EQUITY PERFORMANCE*

	TYPE	SIZE 12/31/73
Fund 1	Corporate Pension Fund	$10.5 million
Fund 2	Corporate Profit Sharing Fund	$ 6.8 million
Fund 3	College Endowment	$12.6 million
Fund 4	Charitable Foundation	$18.4 million
Fund 5	Religious Institution	$ 5.4 million
Fund 6		
Fund 7		
Fund 8	- - - - - - - - - - - - ETC. - - - - - - - - - - - -	
Fund 9		
Fund 10		
Fund 11		
Fund 12		
Fund 13	- - - - - - - - - - - - ETC. - - - - - - - - - - - -	
Fund 14		
Fund 15		

*Discretionary Management

Exhibit VIII

Selection of Discretionary Fund Managers

Studies: We have found no single investment manager or investment method with exceptional performance in all market environments.

It is, therefore, necessary to set forth the philosophy of the investment organizations, their approaches to the investment of discretionary funds and the resources they bring to bear on this part of their business.

The first priority should be to identify those characteristics felt to be most important to the fund. The more information one has about managers, the better the chances are of selecting a manager that has the characteristics the fund feels are important.

The following items are important areas of inquiry by the fund in discussions with prospective investment managers.

Organization: An understanding of the business base of the organization and its parent (if any), its current status and any conflicts with the parent's business, and the nature of ownership and capital give an indication of whether the investment management organization is likely to remain structured as it presently is or whether change is likely. The important points to review with the manager may be the importance of the investment entity's profits to the whole, the nature of its client base, how potential conflicts of interest within the management organization are resolved, and what motivation for the staff the form of ownership may provide.

Staff: Staff must be sufficient to support the investment philosophy, system, research capabilities and assets under management. In conjunction with biographies, interviews may provide the basis to assess the experience, maturity and capability of key staff members and portfolio managers, make certain the fund would receive the level of attention it deserves, and determine whether the investment philosophy is accepted throughout the organization.

Assets Under Management: The relative emphasis is on the types of accounts under management at one point in time. It may be important to know whether this reflects the organization's direction for the future. The fund should compare the mix of stock, bond and cash reserve assets to the philosophy, consider the number of stock and bond accounts, and find out how these may differ from the past.

Philosophy: The fund must discern the investment organization's central philosophy and method of implementation to determine whether such organization suits the fund requirements, especially with respect to asset mix, flexibility in

the use of cash reserves, and diversification of securities and issues within a portfolio. The fund must be certain that there is sufficient staff and a defined system in order to implement the philosophy. The fund should also know whether the philosophy is new or relatively long-standing and how it may be affected by extreme market conditions.

System: For a fund to be able to have confidence in a manager, the system must be understandable. It must fit the manager's organization, philosophy and personnel. From biographies or interviews the fund should discern whether key people are performing the most important functions in the system. Along with an understanding of how the system functions should come a sense of how ideas are generated, the main sources of input and the importance of the individual portfolio manager to the process. The account load per manager should also be considered at this point.

Research: This function may not be equally important for all investment philosophies and systems, but its importance and depth should be understood.

Fees: These are very often negotiabl and flexible; so the fund should inquire specifically as to fees in relation to the size of the fund and special services required.

Performance: Performance reflects the results of the past and is not a prediction for the future. The performance of most investment organizations is dependent in great measure on general market conditions and must be viewed in relation to market conditions during the specific time period covered. It is important to understand the reason for the organization's performance results in the past(staff, philosophy, style, issue selection or industry weightings, among others).

Types of Money Management Organizations -

Banks
Insurance Companies
Investment Management Firms
Internal Staff

The great bulk of monies are still managed by banks. A major portion of this money is managed in individual accounts, and the treatment of those funds is very much like that provided by independent investment management companies. The banks have also established pooled investment trusts for funds. These are vehicles that serve a variety of purposes. For small funds they provide a way of getting intensive management in a way that is not practical if they were to be individually handled. For larger funds they offer a way of providing specialized investment opportunities, either in risky securities or in specialized holdings such as short-term investments where it is desirable to get a spread of holdings rather than concentrating in a limited number of issues.

Over the years, banks have emphasized their fiduciary responsibility for the monies under their supervision, and that has been a major selling point with them.

Insurance companies have become increasingly competitive in recent years in offering investment services. The great bulk of the monies which they handle for such funds are held in their general accounts. These are portfolios largely invested in bonds and mortgages but which also include stocks, real estate and various miscellaneous investments. These are massive pools of capital, and the insurance companies are able to offer guarantees with respect to contracts they offer based on their general accounts. Some of those contracts involve one-shot guarantees on a lump-sum deposit made at a specific time, and others provide a guarantee over some period of years.

In addition, insurance companies offer a broad range of separate account investments which are very similar to the pooled trust vehicles offered by banks. They include equity investment, separate accounts, bond investment, short-term investment accounts and, in the case of a few companies, real estate accounts.

The third major category of organizations offering services to funds are investment management firms. These include independent ones and those that are affiliated with brokerage houses or other financial institutions. These organizations typically offer services in the form of managing an individual account and tying the investment management of those funds to the particular needs and circumstances of their fund clients. Some of these organizations are specialists focusing on particular types of securities.

Finally, there are some funds, generally the vary largest ones, who use internal staff for management of their assets. That is a possibility that is worth consideration if you are confident that you can hire and retain competent professionals who will be able to work with the trustees of the fund in establishing policies and procedures that will meet their particular needs.

Conclusion: It is clear that there is a very broad menu to choose from in the investment advisory field. A systematic procedure for considering the various characteristics of the different organizations in light of your particular fund's requirements, can substantially increase the likelihood that you are going to be able to satisfy your long-term investment needs.

Exhibit IX

EXHIBIT 3
BASIC SERIES

INVESTMENT TOTAL ANNUAL RETURNS
1926 - 1976

Series	Geometric Mean	Arithmetic Mean	Standard Deviation	Distribution
Common Stocks	9.2%	11.6%	22.4%	
Long Term Corporate Bonds	4.1%	4.2%	5.6%	
Long Term Government Bonds	3.4%	3.5%	5.8%	
U.S. Treasury Bills	2.4%	2.4%	2.1%	
Inflation	2.3%	2.4%	4.8%	

EXHIBIT 31

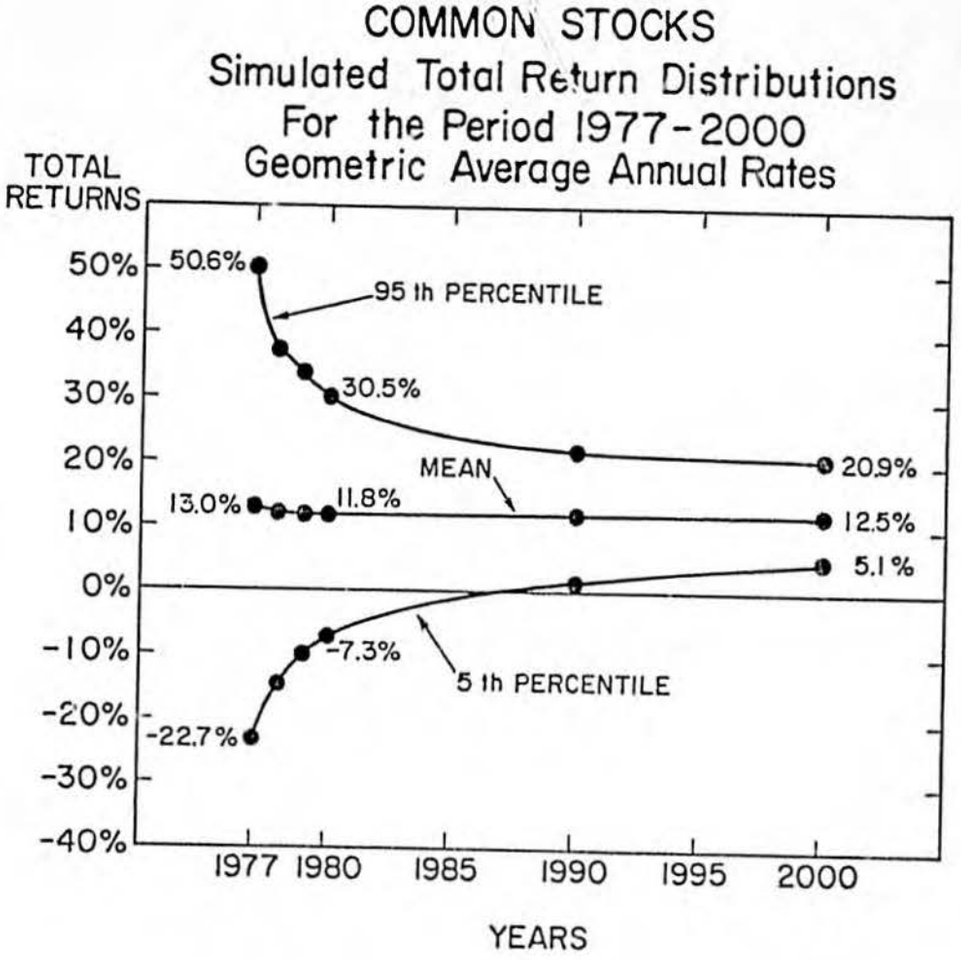

COMMON STOCKS
Simulated Total Return Distributions
For the Period 1977-2000
Geometric Average Annual Rates
TOTAL RETURNS
50%
40%
30%
20%
10%
0%
-10%
-20%
-30%
-40%
50.6%
95 th PERCENTILE
30.5%
20.9%
MEAN
13.0%
11.8%
12.5%
5.1%
-7.3%
5 th PERCENTILE
-22.7%
1977
1980
1985
1990
1995
2000
YEARS

EXHIBIT 33

LONG TERM CORPORATE BONDS
Simulated Total Return Distributions
For the Period 1977-2000
Geometric Average Annual Rates

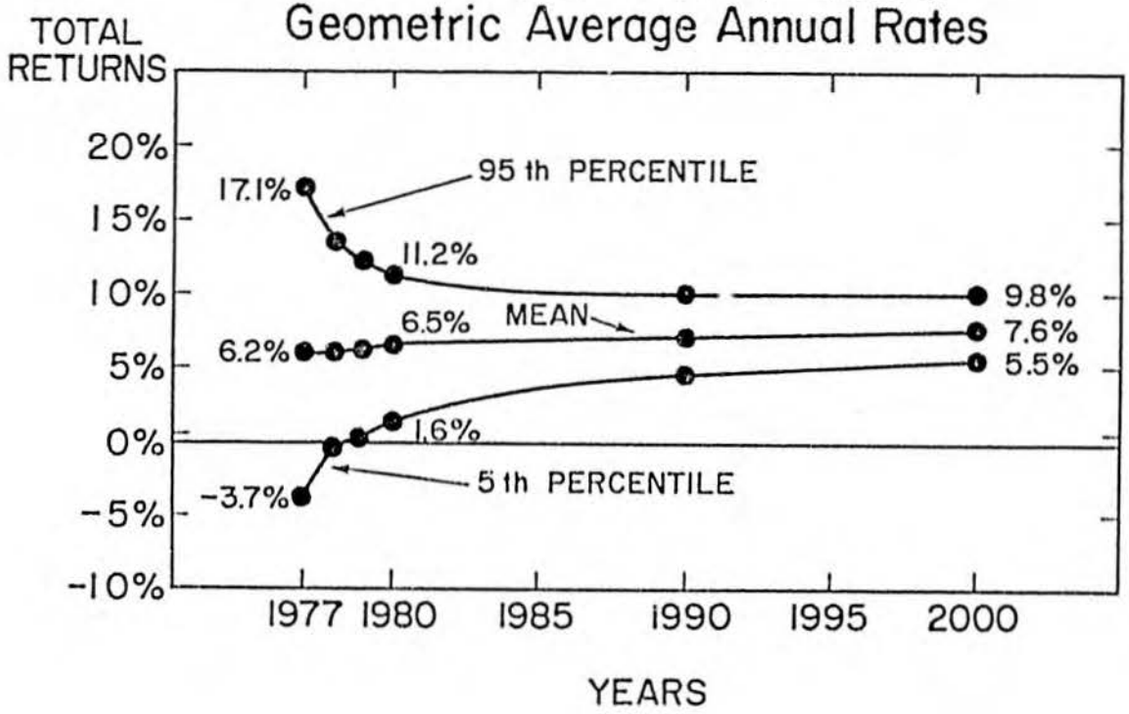


EXHIBIT 35

INFLATION

Simulated Rate Distributions For the Period 1977-2000 Geometric Average Annual Rates

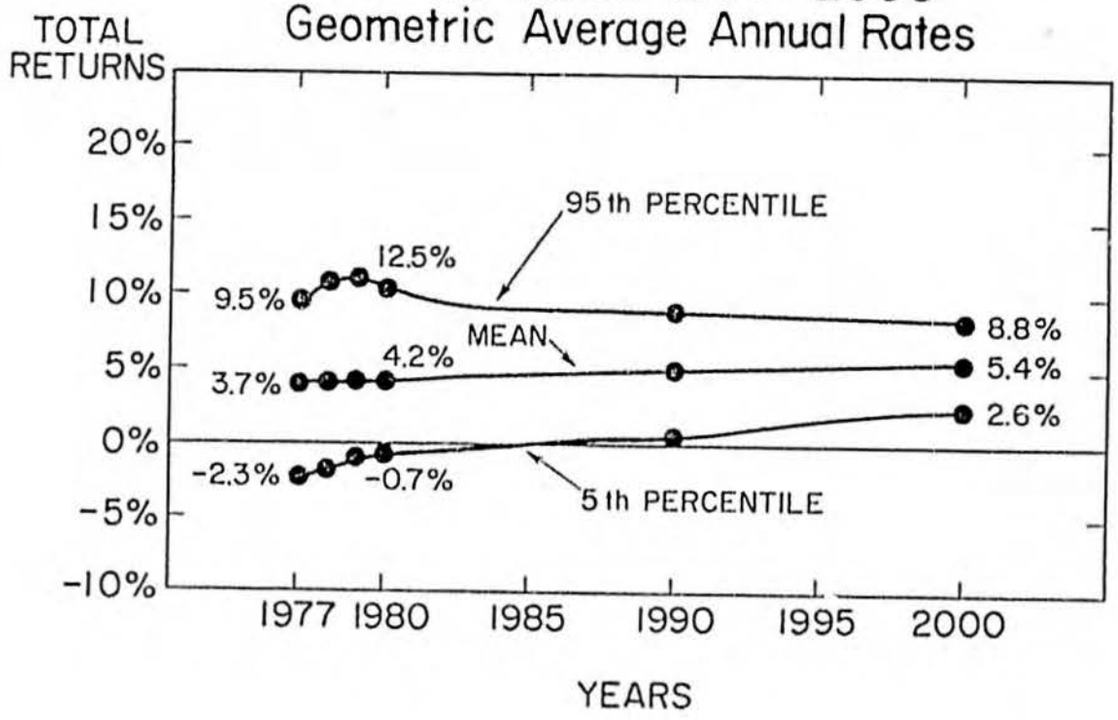
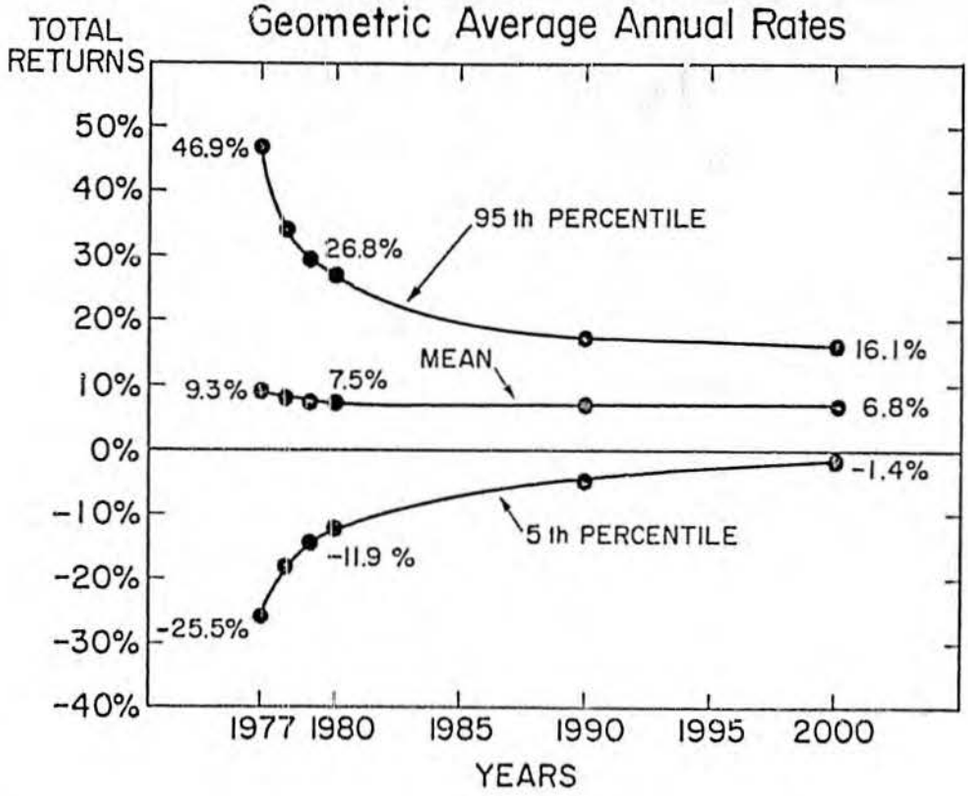


EXHIBIT 37

COMMON STOCKS, INFLATION ADJUSTED
Simulated Total Return Distributions
For the Period 1977-2000
Geometric Average Annual Rates



RESEARCH

Energy and Economics

State of Alaska

RESEARCH

Energy and Economics

State of Alaska

TABLE OF CONTENTS

Energy Stocks April 13, 1977
April 20, 1977 - Will There Be An Energy Policy At Last April 4, 1977
Quarterly Review Of Oil Markets Demand, Supply, And Prices
February 23, 1977
Natural Gas Delivery Curtailments Which Industries May Suffer?
February 16, 1977
Standard Oil Of Ohio (SOH) March 4, 1977
British Petroleum (BP) March 28, 1977
Continental Oil Company (CLL) December 20, 1976
Southland Royalty Company (SRO) January 12, 1977
Mesa Petroleum Co (MSA) January 19, 1977
Standard Oil Of Indiana (SN) February 10, 1977
Cities Service Company (CS) February 28, 1977
Texas Oil And Gas (TXO) March 2, 1977
Gulf Oil (GO) April 4, 1977
United Energy Resources (UER) December 15, 1976
Texas Gas Transmission (TXG) January 10, 1977
Florida Gas Company (FLG) January 10, 1977
Panhandle Eastern Pipe Line Co. (PEL)
Non-ferrous Metal Outlook February 28, 1977
Coal Industry March 10, 1977
Halliburton Company (HAL) December 10, 1976
Baker International Highlights Of Meetings With Management
February 3, 1977
Halliburton Company (HAL) February 8, 1977
Offshore Drilling Industry February 14, 1977
The Business Outlook December 13, 1976
Economic Forecasts January 31, 1977
Outline Of Taped Discussion Of Economic Outlook March 4, 1977
U.S. Economic Forecast March 10, 1977
Economic Forecasts March 10, 1977
Commodity Price Monitor March 23, 1977
The Financial Survey April 11, 1977
Money And Bond Market Developments--Weekly April 15, 1977
Fixed Income Policy Comment April 7, 1977
Investment Policy March 18, 1977
SRC Market Averages Wall Chart
White, Weld & Co. Incorporated - Annual

White, Weld & Co.
Incorporated

Energy Stocks

April 13, 1977

ENERGY GROUP

A. HAGER BRYANT 3rd	(212) 285-2696
RICHARD L. DAVISSON, JR.	(617) 482-7767
PHILIP L. DODGE	(212) 285-2043
JOHN H. HAYWARD, JR.	(212) 285-2032
JOHN L. KALMBACH	(212) 285-2065
WILLIAM N. WALLING, JR.	(212) 285-2438

Energy stocks have been buffetted recently by uncertainties about the forthcoming April 20 address to Congress by President Carter. At the risk of oversimplifying a complex matter, we foresee the following profit implications. Because of efforts to hold down gasoline and fuel oil consumption, refining profitability may not reach a level which would have materialized ex conservation, and even modest industry expansion could lead to a currently unanticipated surplus by the end of the decade. Coal profits, although under considerable pressure this year due to abnormal labor disruptions, should benefit significantly beginning in 1978 from Administration efforts to shift electric power plant boiler fuel to coal from oil and gas. Finally, profit margins on U.S. crude oil and natural gas production should rise further as a result of Administration efforts over time to close the gap between U.S. and world prices.

These prospects, which should be at least partially clarified in the April 20 energy message, argue for investments in companies which (1) already have relatively large reserves of crude oil, natural gas, and coal; (2) have their production in energy consuming countries; and (3) have more upstream earnings than downstream. Moreover, upstream (production) earnings improvement is likely to continue over a period of several years, in part ironically because of price controls and other political constraints which thus far have held earnings of oil and gas producers to artificially low levels. We believe the direction of the Administration's program has been sufficiently outlined to give us confidence that the earnings of many companies will be enhanced. Consequently, we believe a number of energy stocks should be purchased in advance of the energy message when the outlook will become clearer.

Our feelings on the various classifications of energy stocks are as follows.

1. **Domestic oils** should be chosen from those which have relatively large reserves and above average outlooks for non-OPEC production.
2. **International oils** should be avoided, except where income is critical, because of historically high relative P/E ratios and margin pressures overseas.
3. **Natural gas pipelines** remain attractive for a possible combination of earnings, dividend, and P/E increases.
4. **Service companies** are available at multiples lower than those generally prevailing in recent years, and we believe that earnings growth in services related to drilling, both onshore and offshore, will be particularly strong over the next several years.
5. **Coal** demand should be stimulated by Carter Administration energy programs, and we favor broad representation in this group despite temporary pressures on earnings. We anticipate significant earnings recovery beginning in 1978 and higher multiples on current profits as the long-term demand outlook becomes better defined.
6. **Exploration-production firms** have sold off from early 1977 highs and now appear to be in a more attractive buying range.

PORTFOLIO WEIGHTING

S&P 500: 17.4% — White, Weld & Co.: 5.0%

Internationals Underweighted

SELECTED STOCKS

Market Value: Over $1 Billion

British Petroleum
*Continental Oil
*Getty Oil
Halliburton
*Marathon Oil
Occidental Petroleum
*Pennzoil
Phillips Petroleum
Pittston
Schlumberger
*Standard Oil of Indiana
*Standard Oil of Ohio

$500–$1000 Million

Baker International
Eastern Gas & Fuel
*Panhandle Eastern
*Southland Royalty
Texas Oil & Gas

$200–$500 Million

Cooper Industries
Transco

$100–$200 Million

Falcon Seaboard
*Florida Gas
*Helmerich & Payne
*Noble Affiliates
*Southern Union Production

*Currently Favored Stocks

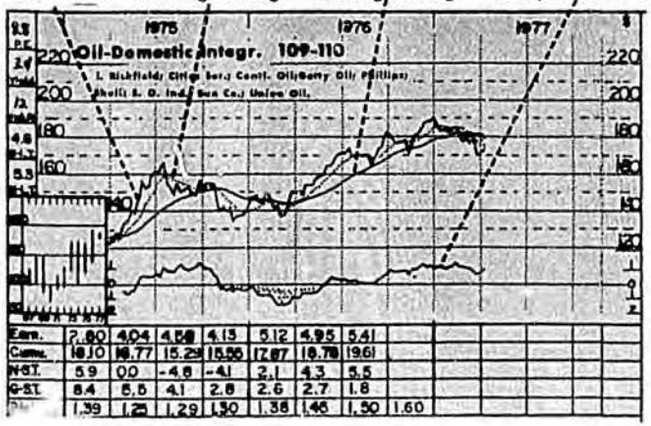
L/01/08/21/22/31/51/65

COMPANY STATISTICS

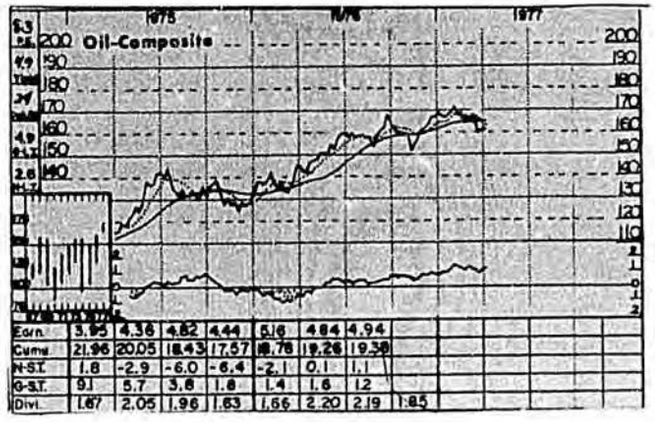
Company	FY	Price 4/7/77 $	1977 Price Range $	Total Market Value $ Mil.	Past 5 Yr. Growth: Sales Per Share %	Past 5 Yr. Growth: Earns. Per Share %	5 Yr. Avg. Equity Plow-Back %	Earnings Per Share: 1975 $	1976 $	1977E $	Change %	P/E Multiples: 1976 X	P/E Multiples: 1977E X	Indicated: Div. $	Indicated: Yld. %	
OIL & GAS DOMESTIC (Dodge)																
Ashland Oil	(9)	33	37- 32	846	17.0	27.9	14.9	3.85	4.40	4.75	8	7.5	6.9	1.90	5.8	OPT
Atlantic Richfield		54	58- 50	5,606	16.2	11.1	7.5	3.08	5.04	5.25	4	10.7	10.3	1.60	3.0	OPT
Cities Service Co.		61	62- 57	1,659	14.6	4.6	4.8	5.12	7.98	8.75	10	7.6	7.0	3.00	4.9	
Continental Oil		35	38- 34	3,745	20.0	16.3	9.4	3.25	4.38	4.75	8	8.0	7.4	1.20	3.4	OPT
Getty Oil		186	212-181	3,820	20.1	21.4	9.0	13.71	13.81	17.00	23	13.5	10.9	2.80	1.5	
Marathon Oil		52	59- 52	1,564	23.2	8.6	8.1	4.28	6.52	7.00	7	8.0	7.4	2.20	4.2	
Occidental Petroleum		26	28- 23	1,465	16.1	-1.6	19.2	2.20	2.27	3.25	43	11.5	8.0	1.00	3.8	OPT
Phillips Petroleum		56	66- 55	4,281	17.0	23.3	7.9	4.50	5.39	6.85	27	10.4	8.2	2.00	3.6	OPT
Shell Oil		72	80- 68	5,088	17.8	22.7	9.0	7.59	10.11	11.50	14	7.1	6.3	3.20	4.4	
Standard Oil Indiana		53	60- 50	7,779	20.2	18.7	9.2	5.36	6.09	7.15	17	8.7	7.4	2.60	4.9	OPT
Standard Oil Ohio		83	86- 74	2,454	10.9	13.9	3.8	3.42	3.55	5.50	55	23.4	15.1	1.36	1.6	
Sun		45	49- 40	1,973	16.9	12.4	14.4	3.63	5.28	6.40	9	7.7	7.0	2.00	4.4	OPT
Union Oil of California		59	59- 54	2,002	17.1	16.4	9.8	5.67	6.55	7.50	15	8.4	7.3	2.10	3.8	OPT
OIL & GAS INTERNATIONAL (Dodge)																
British Petroleum		14	16- 13	5,405	29.2	4.6	8.2	0.75	0.79	1.60	103	17.7	8.8	0.33	2.4	
Exxon Corp.		51	55- 50	22,831	22.1	13.6	9.3	5.60	5.90	6.40	8	8.6	8.0	3.00	5.9	OPT
Gulf Oil Corp.		28	31- 28	5,456	23.0	6.3	7.9	3.60	4.19	4.50	7	6.7	6.2	1.80	6.4	OPT
Mobil		66	71- 62	6,993	22.2	10.8	8.4	7.95	9.08	10.00	10	7.3	6.6	3.80	5.8	OPT
Royal Dutch Petroleum		55	56- 51	7,371	22.0	17.4	9.8	8.79	10.90	10.00	-8	5.0	5.5	3.58	6.5	
Standard Oil California		40	44- 38	6,794	32.0	11.2	8.0	4.55	5.18	5.75	11	7.7	7.0	2.20	5.5	OPT
Texaco		27	30- 26	7,329	30.9	0.3	7.9	3.06	3.20	3.75	17	8.4	7.2	2.00	7.4	OPT
GAS PIPELINES (Bryant)																
El Paso Co.		15	17- 14	584	0.3	4.5	6.3	1.96	1.74	1.75	1	8.6	8.6	1.10	7.3	OPT
Florida Gas		23	24- 20	146	3.0	7.1	8.6	2.31	2.50	2.75	5	9.2	8.4	1.20	5.2	
Northern Natural Gas		46	48- 44	1,014	15.9	22.3	8.3	5.80	6.40	6.75	7	7.2	6.8	2.08	4.5	
Panhandle Eastern Pipeline		42	49- 42	609	7.5	9.0	7.3	4.83	5.70	6.40	15	7.4	6.6	2.30	5.5	
Southern Natural		53	59- 51	533	14.1	14.1	2.6	6.82	7.38	7.50	2	7.2	7.1	1.85	3.5	
Texas Eastern Corp.		41	42- 38	997	10.5	10.2	8.7	4.06	4.55	5.00	14	9.0	8.2	1.85	4.5	
Texas Gas Transmission		43	49- 42	391	3.1	9.5	8.9	4.43	5.65	6.50	14	7.6	6.6	2.00	4.7	
Transco Cos.		18	20- 17	405	8.4	2.5	5.5	2.01	2.35	2.55	15	7.7	7.1	1.00	5.6	
United Energy Resources		27	31- 26	302	NA	NA	12.9	3.48	4.58	5.10	11	5.9	5.3	1.72	6.4	
OIL SERVICE & EQUIPMENT (Hayward)																
Baker International	(9)	46	48- 43	643	20.9	32.7	15.7	3.43	3.52	4.25	21	13.1	10.8	0.46	1.0	
Chicago Bridge		50	62- 46	488	11.9	23.5	12.8	4.20	5.73	5.75	1	8.7	8.7	2.00	4.0	
Dresser Industries	(10)	40	43- 37	1,573	5.6	22.5	14.5	1.77	4.19	4.70	12	9.5	8.5	0.80	2.0	OPT
Fluor Corp.	(10)	34	38- 33	520	14.7	24.0	18.0	2.85	3.88	4.25	10	8.8	8.0	1.00	2.9	OPT
Foster Wheeler		24	24- 20	194	13.1	17.5	9.5	3.57	4.75	5.00	5	5.1	4.8	0.75	3.1	
Halliburton Co.		56	65- 55	3,280	28.6	33.8	15.5	3.84	5.22	5.85	12	10.7	9.6	1.24	2.2	OPT
Hughes Tool Co.		37	43- 34	376	NA	NA	14.5	3.41	2.98	3.60	21	12.4	10.3	0.50	1.4	OPT

McDermott	(3)	54	54- 43	847	31.8	80.9	16.1	9.76	12.00	9.00	-25	4.5	6.0	1.60	3.0	OPT
Ocean Drilling		30	36- 23	339	36.0	32.5	14.6	3.24	3.40	2.50	-26	8.8	12.0	0.20	0.7	
Oceaneering International	(10)	7	12- 5	43	65.3	96.8	34.8	1.35	0.65	0.80	23	10.8	8.8	0.10	1.4	
Offshore Logistics	(6)	14	18- 8	28	36.7	37.2	15.4	1.73	2.91	2.70	-19	4.8	6.0	0.28	2.0	
Santa Fe International		47	53- 21	457	13.1	26.6	12.0	3.01	4.54	5.00	10	10.4	9.4	0.30	0.6	OPT
Schlumberger		60	69- 47	5,266	19.8	33.1	16.3	2.61	3.41	6.00	17	17.6	15.0	0.80	1.3	OPT
Sedco	(6)	35	36- 22	345	25.9	29.1	15.9	3.69	4.34	5.00	15	8.1	9.4	0.30	0.9	
COAL (Walling)																
Continental Oil		35	38- 34	3,745	20.0	16.3	9.4	3.25	4.38	4.75	8	8.0	7.4	1.20	3.4	OPT
Eastern Gas & Fuel		27	28- 16	603	17.6	24.8	13.8	2.73	3.01	3.65	3	9.0	8.7	0.80	3.0	OPT
Falcon Seaboard		43	41- 14	159	9.2	NA	37.3	3.60	4.16	4.75	8	10.3	9.6	00	2.3	
Mapco Inc.		45	45- 33	834	24.6	39.9	19.6	2.64	3.00	3.70	23	15.0	12.2	1 10	2.4	
North American Coal		52	52- 33	87	33.7	32.3	8.9	4.71	4.37	4.50	3	11.9	11.6	0.90	1.7	
Occidental Petroleum		26	28- 23	1,465	16.1	-1.6	19.2	2.20	2.27	3.25	43	11.5	8.0	1.00	3.8	OPT
Pittston Co.		34	47- 30	1,318	24.0	41.6	23.8	5.36	3.92	5.00	-4	8.7	9.1	1.25	3.7	OPT
Westmoreland Coal		50	66- 39	344	22.3	43.0	21.9	8.82	7.07	7.00	-29	7.1	10.0	1.70	3.4	
DIVERSIFIED ENERGY (Kalmbach)																
Cooper Industries		43	43- 23	482	10.0	17.1	13.2	2.80	3.66	4.25	16	11.7	13.2	1.08	2.5	
Houston Natural Gas	(7)	31	37- 24	1,033	28.5	36.4	17.5	2.00	2.74	3.15	24	11.3	9.1	0.70	2.3	
Pennzoil		31	35- 19	1,016	-2.8	7.1	11.9	2.96	3.70	4.50	22	8.4	6.9	1.40	4.5	OPT
Tenneco, Inc.		32	37- 26	2,726	11.6	14.7	9.4	3.63	-- RESTRICTED --			--	--	1.88	5.9	OPT
EXPLORATION & PRODUCTION (Davisson)																
Apache Corp.		18	22- 10	83	6.7	11.6	11.0	1.73	2.33	2.00	-40	7.7	9.0	0.50	2.8	
C. & K. Petroleum		34	32- 9	75	25.0	34.0	NA	1.53	1.26	1.85	29	27.0	17.0	0.20	0.6	
Husky Oil		24	23- 16	234	20.9	42.2	13.4	3.29	2.71	4.00	21	8.9	6.0	0.80	3.3	
Mountain Fuel Supply		40	46- 31	239	12.8	13.2	5.8	2.74	3.77	4.75	11	10.6	8.7	2.00	5.0	
Natomas		37	43- 22	246	139.1	238.5	15.6	2.65	8.45	9.00	12	4.4	3.9	1.40	3.8	
Rainbow Resources	(7)	23	19- 6	51	NA	60.0	NA	0.42	0.67	1.00	49	34.3	23 0	0.0	0.0	
(Dodge)																
American Quasar		22	27- 8	98	60.0	NA	NA	0.60	0.40	1.00	150	55.0	22.0	0.0	0.0	
Louisiana Land		27	31- 22	1,004	21.1	10.6	16.0	2.42	2.67	3.10	15	10.1	9.2	1.20	4.9	OPT
Mesa Petroleum		34	38- 19	437	-10.1	9.3	23.7	1.25	1.92	2.25	17	17.7	13.1	0.10	0.3	OPT
Sabine		25	59- 35	154	39.6	33.5	16.3	1.77	2.08	2.50	20	12.0	10.1	0.50	2.0	
Southland Royalty		40	47- 20	475	30.3	32.8	14.4	1.76	2.28	2.75	20	17.5	14.5	0.68	1.7	
(Kalmbach)																
Belco Petroleum		24	29- 14	180	21.5	9.9	14.8	2.83	4.15	6.00	50	5.8	4.0	1.00	4.2	
Helmerich & Payne	(9)	34	34- 30	196	3.0	26.8	13.8	2.37	2.60	3.10	19	13.1	11.0	0.28	0.8	
Houston Oil & Mineral		40	61- 11	659	68.3	NA	43.7	1.00	1.95	4.00	105	20.5	10.0	0.80	2.0	OPT
Noble Affiliates		25	30- 12	99	NA	NA	NA	2.06	2.38	2.80	18	10.5	8.9	0.27	1.1	
Pennzoil Offshore		13	17- 11	492	NA	NA	NA	1.01	0.77	1.70	121	16.7	7.6	0.0	0.0	
Southern Union Production		39	45- 23	213	NA	NA	NA	2.55	3.02	4.00	33	12.9	9.7	0.40	1.0	
Texas Oil & Gas		26	30- 13	520	55.8	36.3	20.2	2.05	2.46	3.00	22	10.6	8.7	0.20	0.8	
Tom Brown	(3)	36	35- 17	138	20.0	36.6	32.4	1.50	1.30	2.80	47	18.9	12.9	0.0	0.0	

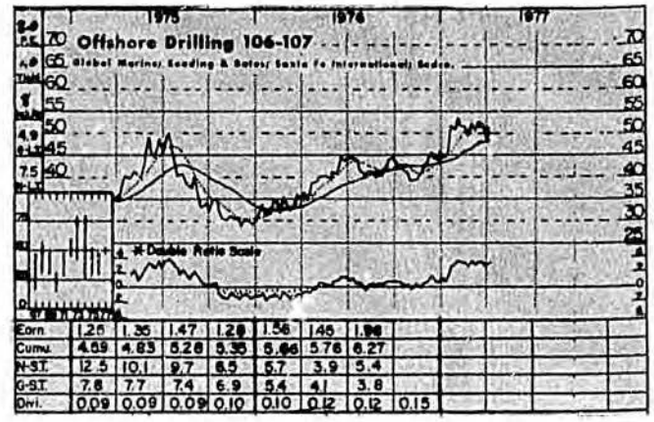
Weekly Group Price Index — 10-Week Moving Average — 30-Week Moving Average — Performance Ratio Group vs. S&P 500



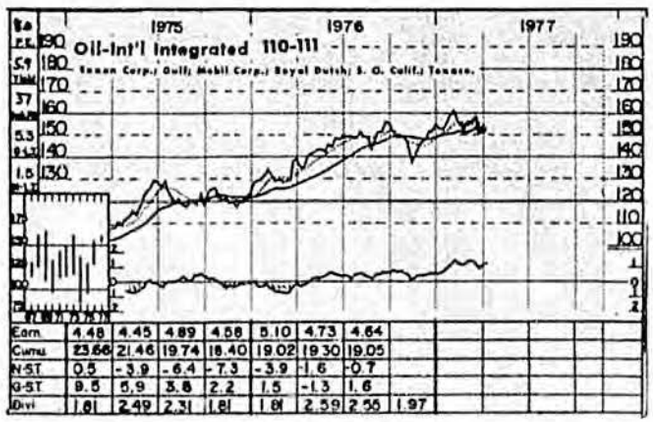
Earn.	2.80	4.04	4.58	4.13	5.12	4.95	5.41	
Cumu.	18.10	18.77	15.29	15.56	17.87	18.78	19.61	
N-ST.	5.9	0.0	-4.6	-4.1	2.1	4.3	5.5	
G-ST.	8.4	8.5	4.1	2.8	2.6	2.7	1.8	
Divi.	1.39	1.25	1.29	1.30	1.38	1.46	1.50	1.60



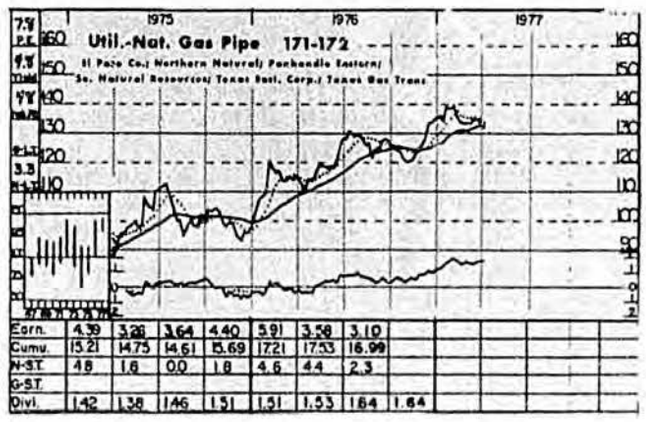
Earn.	3.95	4.36	4.82	4.44	5.16	4.84	4.94	
Cumu.	21.96	20.05	18.43	17.57	18.78	19.26	19.38	
N-ST.	1.8	-2.9	-6.0	-6.4	-2.1	0.1	1.1	
G-ST.	9.1	5.7	3.6	1.8	1.4	1.6	1.2	
Divi.	1.67	2.05	1.96	1.63	1.66	2.20	2.19	1.85



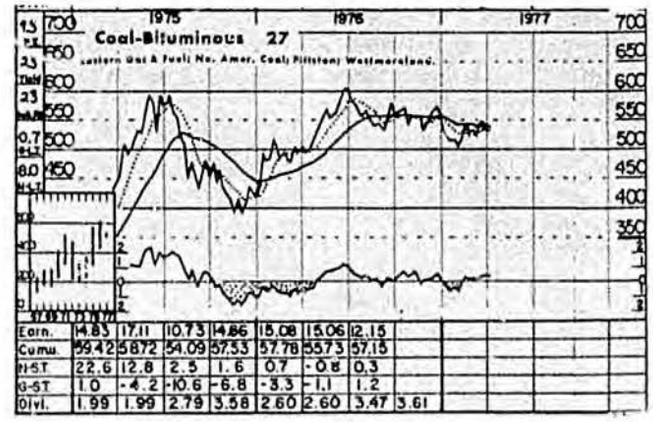
Earn.	1.26	1.36	1.47	1.28	1.56	1.45	1.98	
Cumu.	4.69	4.83	5.28	5.35	5.66	5.76	6.27	
N-ST.	12.5	10.1	9.7	8.5	5.7	3.9	5.4	
G-ST.	7.8	7.7	7.4	6.9	5.4	4.1	3.8	
Divi.	0.09	0.09	0.09	0.10	0.10	0.12	0.12	0.15



Earn.	4.48	4.45	4.89	4.58	5.10	4.73	4.64	
Cumu.	23.66	21.46	19.74	18.40	19.02	19.30	19.05	
N-ST.	0.5	-3.9	-6.4	-7.3	-3.9	-1.6	-0.7	
G-ST.	9.5	5.9	3.8	2.2	1.5	-1.3	1.6	
Divi.	1.81	2.49	2.31	1.81	1.81	2.59	2.55	1.97



Earn.	4.39	3.26	3.64	4.40	5.91	3.58	3.10	
Cumu.	15.21	14.75	14.61	15.69	17.21	17.53	16.99	
N-ST.	4.8	1.8	0.0	1.8	4.6	4.4	2.3	
G-ST.								
Divi.	1.42	1.38	1.46	1.51	1.51	1.53	1.64	1.64



Earn.	14.83	17.11	10.73	14.86	15.08	15.06	12.15	
Cumu.	59.42	58.72	54.09	57.53	57.78	55.73	57.15	
N-ST.	22.6	12.8	2.5	1.6	0.7	-0.8	0.3	
G-ST.	1.0	-4.2	-10.6	-6.8	-3.3	-1.1	1.2	
Divi.	1.99	1.99	2.79	3.58	2.60	2.60	3.47	3.61

Chart courtesy of Mansfield Stock Chart Service.

RR-77-64

—Research Department—

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White, Weld & Co.
Incorporated

Special
Report

Philip L. Dodge
(212) 285-2043

April 4, 1977

APRIL 20, 1977
WILL THERE BE AN ENERGY POLICY AT LAST?

President Carter will address Congress on April 20, an eagerly awaited message on the state of U.S. energy. Uncertainties concerning the direction of Carter Administration energy goals have had a disruptive effect on common stock prices over the past several weeks. Although we believe that Administration programs will be generally favorable for energy investors, the whole cloth of Carter policy is unlikely to emerge as early as April 20. And, Congressional consideration of Administration proposals will inevitably be a lengthy process despite some restructuring. In this setting, important questions will not be resolved as soon as investors would prefer.

April 20 is a difficult deadline for presentation of a comprehensive package due to the sheer complexity of energy matters. The Administration would apparently also prefer to establish the proposed Department of Energy before addressing all particulars. This organizational step is desirable to delineate lines of authority and, from a more practical standpoint, to provide officials for extensive Congressional hearings. At the same time, President Carter will probably speak with considerable substance on April 20, partly because expectations are high and partly because politically unpopular moves are more tolerable early in the four year term.

The Administration has avowedly abandoned the earlier goal of U.S. energy self-sufficiency (Project Independence), reflecting less policy than reality. Nevertheless, the objective will be to narrow the present gap between national supply and demand. Probable Administration proposals can usefully be divided into three categories: (1) those that will reduce demand; (2) those that will shift demand from one fuel to another; and (3) those that will increase supply. Even in these general terms, a significant change in emphasis is evident. In recent years, Congressional actions, either consciously or inadvertently, have resulted in constraints on supply, for example, elimination of percentage depletion on petroleum in March 1975, extension of price controls on crude oil in December 1975, and majority opposition (in the House of Representatives) to removal of price ceilings on new natural gas in February 1976.

Proposals to Reduce Demand

These proposals will focus on transportation and space heating, energy markets in which other fuels cannot be readily substituted for oil and natural gas. The major target will be gasoline, a product which alone accounts for about 20% of total U.S. energy con-

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sumption. Under consideration and a probability is a combination Federal sales tax/credit on automobiles graduated in proportion to gasoline consumption related to mileage standards that are already legislated by the 1975 Energy Policy and Conservation Act. The President may also recommend a rising Federal excise tax on gasoline above the current 4¢ a gallon figure either initially, or later if taxes/credits related to mileage standards prove inadequate. The message will probably contain proposals to grant tax credits, loan guarantees, or low interest rate loans for money spent on insulation of buildings. The Administration may also address the complex question of electric utility rate structures which now apply lower unit rates for greater use. Finally, and perhaps least likely, the Administration could favor mandatory limits on industrial consumption of oil and gas. For instance, airlines might be constrained to a base period fuel use level.

Proposals to Shift Demands

The message will almost certainly contain measures to shift electric utility boiler fuel to coal from oil and gas. Coal currently provides energy for roughly 45% of electric power output, and oil and gas each slightly over 15%. Although coal is about 50% less expensive than oil and 20% cheaper than natural gas, utilities have not moved rapidly to convert existing facilities, partly due to conflicts with existing air quality standards. The Federal Energy Administration has issued construction orders requiring the use of coal at 142 power units entailing future annual consumption of 221 million tons. However, most or all of these new sites would have used coal anyway.

We believe the Administration will adopt an approach similar to legislation (S977 Coal Utilization Act of 1977) introduced by Senator Henry Jackson of Washington, which would require new power plants and other major installations to burn coal or another fuel rather than oil or natural gas. Under S977, conversions from natural gas at existing facilities would be mandatory by January 1979 and from oil by January 1990. Moreover, to expedite conversions, President Carter is likely to propose a stiff tax on the use of natural gas, and maybe oil, in power plant and other industrial markets. To expedite this objective, additional investment tax credits may be introduced for both plant conversion and installation of stack gas scrubbers. However, we doubt that modification of current air quality standards will be requested, thus perpetuating the root dilemma of excessive sulphur content in most available coals.

Proposals to Increase Supply

The Administration is considering higher prices for domestic crude oil and natural gas. It has already recommended continuation of the 10% annual rate of increase in the crude oil price composite, as legislated in August 1976. In addition, President Carter will probably propose higher prices for natural gas from new discoveries in the April 20 message and higher prices for crude oil from new discoveries either on April 20 or later. We expect that prices for these new categories of production will eventually be related to landed values of imported fuels. Rather than unbuttoned decontrol, however, increases to parity with world levels may be recommended over two or three years, partly to attract broader Congressional support. Nonetheless, initial figures should be significantly above presently authorized levels for new production of $1.45 a thousand cubic feet for gas and $11.00 a barrel on average for oil.

To qualify, output would reportedly have to be from geologically separate finds rather than infill wells in existing reservoirs.

Regarding coal supply, the Administration has previously indicated support for the Surface Mining & Reclamation Act (HR 2, S7), and this proposed legislation, which would impede strip mining, will probably pass the current session of Congress. Even so, present surplus coal mining capacity is on the order of 100 million tons annually, and the obvious problem to be addressed first is demand not supply.

We doubt that the President on April 20 will advocate rapid development of nuclear power because of inhibitions expressed in the past concerning safety. However, Congress will apparently consider several aspects of nuclear development including standardization of reactors and disposal of waste.

After April 20, the Administration can be expected to present basic energy proposals in greater detail, and new aspects of recommended energy policy may be added to the original message. All, sooner or later, must undergo Congressional scrutiny. Options for administrative energy action have become limited in recent years, as Congress has increasingly required advice and consent. Despite recent changes, Congress is not particularly well organized for expeditious review of energy proposals. The new Senate Energy Committee under Senator Jackson may move more rapidly than was possible under the past rather fragmented committee structure. On the surface, the House should also be more immediately responsive through an Ad Hoc Committee established by Speaker O'Neill specifically to hear Administration energy proposals. However, our present understanding is that each existing committee will later hold hearings on specific aspects of the proposed program, e.g., Ways & Means on tax matters. Allowing for recesses, legislation this year may largely be limited to bills related to strip mining, outer continental shelf procedures, and others that are already in process.

In summary, we would emphasize the following points:

1. The April 20 message may not be completely comprehensive because of time limitations.

2. It will stress conservation of oil and natural gas, substitution of coal for oil and gas, and higher prices for oil and gas.

3. Further Administration proposals are likely over the balance of the year.

4. Congress will move slowly, but a program will evolve.

5. Therefore (points 3 and 4), political uncertainties will continue after April 20.

Despite the negative element of uncertainty, we believe that energy investors will benefit from Carter Administration policy as it materializes. More selectively, however, profit prospects appear far better for energy extractors than for refiners and marketers, particularly if conservation efforts prove more effective than those in the past. The case appears stronger

than ever for companies which have relatively large reserves of crude oil, natural gas, and coal in the United States and other non-OPEC areas. Our current recommendations are **British Petroleum** (BP-14), **Continental Oil** (CLL-35), **Getty Oil** (GET-183), **Marathon Oil** (MRO-53), **Occidental Petroleum** (OXY-26), **Phillips Petroleum** (P-55), **Standard Oil of Indiana** (SN-52), and **Sohio** (SOH-80). We also recommend purchase of several companies which are primarily engaged in U.S. oil and gas exploration including **American Quasar** (AQAS-23), **Helmerich-Payne** (HP-32), **Mesa Petroleum** (MSA-31), **Noble Affiliates** (NOBL-25), **Southern Union Production** (SUPC-38), **Southland Royalty** (SRO-39), and **Texas Oil Gas** (TXO-27).

RR-77-58 —Research Department—

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White, Weld & Co.
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Industry
Survey

Philip L. Dodge
(212) 285-2043

February 23, 1977

QUARTERLY REVIEW OF OIL MARKETS
DEMAND, SUPPLY, AND PRICES

This statistical report is part of a continuing quarterly review of oil demand, supply, and price trends. Previous information was published in 1976 on July 22, September 2, and November 30.

TABLE 1, OIL CONSUMPTION

World oil consumption (ex Russia, China, and Eastern Europe) rose 5.2% last year, including an unusually sizable 6.5% in the United States, and 4.5% overseas. U.S. demand was particularly strong in the fourth quarter when chill temperatures stimulated use of heating oil. Inadequate reporting of heavy fuel imports in early 1976 has required some quarterly estimating, and appropriate revisions will be made as actual figures become available. Overseas, slack economic activity in the United Kingdom was responsible for an 11% decline in heavy fuel oil consumption and a 2% drop overall. In Italy, high government taxes on gasoline appear to have dampened demand as the year progressed, resulting in a slip of 4% from 1975. France and West Germany were strong across the product spectrum, both up 8% in total. Japan was tempered to 3% improvement by sluggish use of heavy fuel oil. Assuming a further expansion in economic activity, we currently estimate that 1977 consumption in the U.S. will rise 4-5% and overseas 3-5%, or some 4% overall. The U.S. is up about 10% so far due to frigid weather. Carter Administration conservation efforts, as yet undefined, are unlikely to have a meaningful impact until future years.

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Table 1

OIL CONSUMPTION

(000 Barrels Daily)

	1974	1975					1976					Increase/(Decrease) 1975-1976				
		1Q	2Q	3Q	4Q	Year	1Q	2Q	3Q	4Q	Year	1Q	2Q	3Q	4Q	Year
United Kingdom																
Motor Gasoline	382	339	384	398	373	374	354	401	413	394	390	4%	4%	4%	6%	4%
Distillates	453	518	410	310	507	436	549	401	307	498	435	6	(2)	(1)	(2)	0
Heavy Fuel Oil	677	710	512	379	594	550	618	436	376	530	492	(13)	(16)	(1)	(11)	(11)
All Products	2,007	1,979	1,685	1,466	1,865	1,747	1,920	1,655	1,491	1,807	1,717	(3)	(2)	2	(3)	(2)
France																
Motor Gasoline	355	322	379	419	364	371	345	403	443	372	390	7%	6%	6%	2%	5%
Distillates	795	887	692	509	937	757	1,125	591	527	919	791	27	(16)	4	(2)	4
Heavy Fuel Oil	661	665	508	371	655	551	691	574	513	700	617	4	13	38	7	12
All Products	2,309	2,294	2,019	1,720	2,112	2,111	2,640	2,041	1,956	2,477	2,279	15	1	14	3	8
Italy																
Motor Gasoline	242	229	261	289	257	259	242	248	284	226	250	6%	(5)%	(2)%	(12)%	(4)%
Distillates	416	493	312	355	500	419	562	297	361	482	440	14	(5)	2	(4)	5
Heavy Fuel Oil	738	845	608	544	785	723	760	594	634	754	726	(10)	(2)	17	(4)	0
All Products	1,896	1,836	1,611	1,603	1,961	1,799	2,024	1,576	1,702	1,863	1,830	2	(2)	6	(5)	2
West Germany																
Motor Gasoline	436	428	497	483	493	475	435	508	509	505	495	2%	2%	5%	3%	4%
Distillates	1,126	1,194	1,080	1,158	1,112	1,133	1,315	1,077	1,249	1,223	1,222	10	0	8	11	8
Heavy Fuel Oil	450	396	386	365	484	408	436	396	439	504	443	10	3	20	4	9
All Products	2,554	2,429	2,404	2,461	2,568	2,466	2,614	2,476	2,722	2,735	2,666	8	3	11	1	8
Europe – Four-Country Subtotal																
Motor Gasoline	1,415	1,318	1,521	1,589	1,487	1,479	1,376	1,559	1,649	1,497	1,525	4%	2%	4%	1%	3%
Distillates	2,790	3,092	2,494	2,332	3,056	2,738	3,551	2,366	2,444	3,122	2,888	15	(5)	5	2	5
Heavy Fuel Oil	2,526	2,616	2,014	1,659	2,518	2,182	2,505	2,000	1,962	2,488	2,278	(4)	(1)	19	(1)	4
All Products	8,766	8,538	7,719	7,250	8,875	8,115	9,198	7,748	7,871	8,882	8,492	8	0	9	0	5

Table 1 (Continued)

OIL CONSUMPTION

(000 Barrels Daily)

	1974	1975					1976					Increase/(Decrease) 1975-1976				
		1Q	2Q	3Q	4Q	Year	1Q	2Q	3Q	4Q	Year	1Q	2Q	3Q	4Q	Year
Japan																
Motor Gasoline	454	461	469	487	521	485	491	507	499	547	512	7%	8%	3%	5%	6%
Distillates	981	1,331	807	703	1,109	962	1,279	865	754	1,242	1,032	4	7	7	12	7
Heavy Fuel Oil	2,194	2,119	1,803	2,054	2,033	1,997	2,132	1,823	2,012	2,116	2,009	1	1	(2)	4	1
All Products	5,141	5,271	4,456	4,636	5,133	4,872	5,445	4,648	4,701	5,410	5,000	3	4	1	5	3
Free World Foreign																
Motor Gasoline	4,158	4,073	4,413	4,562	4,426	4,370	4,264	4,589	4,735	4,585	4,549	5%	4%	4%	4%	4%
Distillates	6,912	7,719	6,488	6,073	7,659	6,991	8,530	6,494	6,195	8,080	7,396	11	0	5	6	6
Heavy Fuel Oil	7,814	8,000	6,749	6,646	7,769	7,318	8,000	6,897	7,125	8,095	7,553	0	2	7	4	3
All Products	27,745	28,179	25,940	23,672	28,640	27,080	29,616	26,692	24,974	29,700E	28,300E	5	3	6	4	5
United States																
Motor Gasoline	6,585	6,251	6,927	6,974	6,698	6,711	6,617	7,209	7,224	7,013	7,002	6%	4%	4%	5%	4%
Distillates	2,942	3,891	2,705	2,259	3,189	3,013	3,919	2,656	2,501	3,923	3,276	1	(2)	11	23	9
Heavy Fuel Oil	2,638	2,936	2,161	2,244	2,455	2,449	3,150R	2,370R	2,338	3,039	2,775	7	10	4	24	13
All Products	16,962	17,371	15,803	15,978	16,902	16,515	18,625R	16,680R	16,498	18,700	17,581	7	6	3	11	7
Free World																
Motor Gasoline	10,743	10,324	11,340	11,536	11,124	11,081	10,881	11,798	11,959	11,598	11,551	5%	4%	4%	4%	4%
Distillates	9,854	11,610	9,193	8,332	10,848	10,004	12,449	9,150	8,896	12,003	10,672	7	0	7	11	7
Heavy Fuel Oil	10,452	10,936	8,910	8,890	10,224	9,769	11,150R	9,267R	9,463	11,134	10,328	2	4	6	9	6
All Products	44,607	45,550	41,743	39,650	45,542	43,595	47,792	42,923	41,472	48,400E	45,881E	5	3	5	6E	5E

R = Revised
E = Estimated

TABLE 2, OPEC PRODUCTION

OPEC production rose 12% in 1976, ballooning toward the end of the year because of pre-January 1 price increase demand. The OPEC surplus capacity, much ogled in the past as a portent of lower crude oil prices, was down to only 4,000,000 million barrels a day (10%) in December 1976, of which some 60% was in Saudi Arabia alone. OPEC Persian Gulf production rose to a record level of 21,226,000 barrels a day last year as African and other OPEC members were increasingly faced with capacity limitations. In 1977, we estimate that OPEC production will average 31,500,000 barrels a day, up 3%, although the first quarter will probably be under 30,000,000 barrels a day as earlier accumulated inventories are drawn down (note January numbers). We look for OPEC prices to average about 7 1/2% ($0.90 a barrel) higher for the year.

Table 2

OPEC PRODUCTION

(000 Barrels Daily)

	1972	1973	1974	1975	197	Dec. 1976	Jan. 1977
Saudi Ar bia	6,015	7,600	8,479	7,077	8,58[illegible]	9,188	8,283
[illegible]	5,015	5,860	6,021	5,350	5,883	6,630	5,059
Iraq	1,455	1,966	1,871	2,248	2,184	3,000	NA
Kuwait	3,287	3,022	2,547	2,054	2,150	3,333	NA
United Arab Emirates	1,208	1,523	1,679	1,695	1,942	2,009	1,937
Qatar	482	570	519	439	487	500	455
Subtotal Persian Gulf	17,462	20,541	21,116	18,863	21,226	24,660	NA
Nigeria	1,817	2,055	2,254	1,787	2,068	2,200	2,150
Libya	2,215	2,185	1,521	1,510	1,914	2,050	2,022
Algeria	1,064	1,090	1,021	946	1,050	1,100	1,100
Gabon	126	151	180	199	220	225	220
Subtotal Africa	5,222	5,481	4,976	4,442	5,252	5,575	5,492
Venezuela	3,220	3,366	2,976	2,346	2,294	2,388	2,360
Indonesia	1,060	1,339	1,392	1,313	1,504	1,583	1,628
Ecuador	79	218	155	158	186	207	217
Total	27,043	30,945	30,615	27,122	30,462	34,413	NA

NA—Not available.

TABLE 3, U.S. CRUDE OIL PRICES

The average wellhead price of U.S. crude oil rose to about $8.15 a barrel last year from $7.67 a barrel in 1975. We forecast approximately $8.85 a barrel this year, up $0.70 or 9%. Our estimate excludes North Slope oil which will be treated separately under government price controls. We have assumed that the portion of lower tier crude to total production will decline about 1 1/2 percentage points per quarter, consistent with recent trends, and that the present Federal Energy Administration *freeze* on upper and lower tier prices will be lifted by mid-year.

Table 3

U.S. CRUDE OIL PRICES

($ Per Barrel)

	Composition			Weighted Average Price	
	Lower Tier	Upper Tier	Stripper	Amount	Year-to-Year Increase
1975					
1st Quarter	60%	28%	12%	$7.55	$0.69
2nd Quarter	62	25	13	7.52	0.69
3rd Quarter	63	23	14	7.74	1.00
4th Quarter	63	23	14	7.85	0.84
Year	62%	25%	13%	$7.67	$0.80
1976					
1st Quarter	56%	30%	14%	$8.10	$0.55
2nd Quarter	57	29	14	7.91	0.39
3rd Quarter	55	31	14	8.15	0.41
4th Quarter E	52	35	13	8.47	0.62
Year E	55%	31%	14%	$8.15	$0.48
1977					
1st Quarter E	51%	36%	13%	$8.60	$0.50
2nd Quarter E	49	38	13	8.68	0.77
3rd Quarter E	48	39	13	8.90	0.75
4th Quarter E	46	41	13	9.18	0.63
Year E	48%	39%	13%	$8.84	$0.69

E = Estimated

TABLE 4, U.S. NATURAL GAS PRICES

The average wellhead price of U.S. natural gas rose to an estimated 58¢ per thousand cubic feet last year from 44¢ in 1975. Second half 1976 figures may understate actual realizations because some companies have not made figures available to reflect benefits of Federal Power Commission Order 770–A. The average domestic gas price should rise to 70–75¢ per MCF this year due mainly to a full year impact of 770–A and the effect of higher priced emergency sales on **both** interstate and intrastate prices. If price controls are removed on new gas, the figure would probably be higher.

Table 4

U.S. NATURAL GAS PRICES

(Cents Per MCF)

	Price at Wellhead	Year-to-Year Increase	
		Cents Per MCF	Percent
1975			
1st Quarter	38¢	13¢	52%
2nd Quarter	41	13	46
3rd Quarter	45	12	36
4th Quarter	52	16	44
Year	44¢	14¢	46%
1976			
1st Quarter	54¢	16¢	42%
2nd Quarter	56	15	37
3rd Quarter	59	14	21
4th Quarter	63 E	11	21
Year	58¢ E	14¢	32%

E = Estimated

TABLE 5, SELECTED U.S. OIL PRODUCT PRICES

Using normally meaningful Oil & Gas Journal spot quotations, average U.S. gasoline prices rose about 10% last year, distillates also 10%, and heavy fuel oil 3%. Platt's Oilgram, which compiles monthly figures on gasoline prices, showed a 9% year-to-year increase at the dealer tank wagon level, reflective of oil company experience, and a 4% gain at service stations. Dealers tolerated about a 1¢ a gallon decline in margins during 1976. Confirming these comparisons one major company had a 9% (3.2¢ a gallon) year-to-year increase in gasoline and an 11% (3.1¢ a gallon) increase in distillates. Further price improvement toward the upper end of a 5-10% range appears likely in 1977. The fuel oils are thus far benefitting from heavy usage brought about by cold weather. And, gasoline has recently shown contra-seasonal improvement, a quirk in price controls which focuses higher prices in periods immediate following crude oil price increases.

Table 5

SELECTED U.S. OIL PRODUCT PRICES

(Cents Per Gallon)

	Oil & Gas Journal			Platt's Oilgram	
	Average Mid-Continent Spot		N.Y. Harbor Barge (0.3%)	Regular Gasoline	
	Regular Gasoline	Distillate	Heavy Fuel Oil	Dealer Tank Wagon	Station Price
1975					
1st Quarter	29.9¢	26.3¢	31.4¢	32.3¢	54.0¢
2nd Quarter	30.4	25.6	30.7	34.4	55.6
3rd Quarter	35.3	26.7	30.6	38.0	59.6
4th Quarter	35.4	29.8	30.9	38.4	59.6
Year	32.7¢	27.1¢	30.9¢	35.8¢	57.2¢
1976					
1st Quarter	34.9¢	30.0¢	32.0¢	37.2¢	58.0¢
2nd Quarter	35.1	28.9	30.6	37.8	58.3
3rd Quarter	37.5	29.6	31.3	40.5	60.5
4th Quarter	37.0	31.0	32.7	40.5	60.8
Year	36.1¢	29.9¢	31.7¢	39.0¢	59.4¢
% 1975-1976 Incr.					
1st Quarter	17%	14%	2%	15%	7%
2nd Quarter	15	13	0	10	5
3rd Quarter	6	11	2	7	2
4th Quarter	5	4	6	5	2
Year	10%	10%	3%	9%	4%
1977					
Recent	37.0¢	33.8¢	38.3¢	40.4¢	60.7¢
% 1976-1977 Incr.					
Recent vs. 1st Qtr.	6%	11%	20%	9%	5%

TABLE 6, ESTIMATED U.S. REFINING MARGINS

Domestic refining margins improved by an estimated pretax $0.60-0.65 a barrel last year, a development which was dramatically apparent in the profitability of many domestic oil companies. However, year-to-year improvement diminished toward the end of 1976. Our price column reflects weekly mid-continent figures published by the **Oil & Gas Journal,** these being weighted to reflect seasonal changes in refinery yields. Average crude oil costs are compiled by the Federal Energy Administration and bear the burden of a considerable time lag. This year is starting out with a *normal* 1976 indicated margin. Domestic refinery utilization at around 90% is high enough to support generally favorable cost recovery experience. We doubt nevertheless that margins will improve significantly in 1977 as they did last year.

Table 6

ESTIMATED U.S. REFINING MARGINS

($ Per Barrel)

	Weighted Mid-Continent Prices	Average Crude Costs	Indicated Margin
1975			
1st Quarter	$11.83	$ 9.83	$2.00
2nd Quarter	11.90	9.98	1.92
3rd Quarter	13.29	10.72	2.57
4th Quarter	13.64	10.96	2.68
Year	$12.67	$10.38	$2.29
1976			
1st Quarter	$13.50	$10.58	$2.92
2nd Quarter	13.50	10.68	2.82
3rd Quarter	14.22	10.94	3.28
4th Quarter	14.20	11.50E	2.70E
Year	$13.85	$10.93E	$2.92E
Incr./(Decr.) 1975-1976			
1st Quarter	$ 1.67	$ 0.75	$0.92
2nd Quarter	1.60	0.70	0.90
3rd Quarter	0.93	0.22	0.71
4th Quarter	0.56	0.54E	0.02E
Year	$ 1.18	$ 0.55E	$0.63E
1977			
Recent	$14.69	$11.75E	$2.94 E
Incr./(Decr.) 1976-1977			
Recent vs. 1st Qtr.	$1.19	$ 1.17	$0.02 E

E = Estimated.

TABLE 7, ROTTERDAM CARGO QUOTATIONS

Prices in the volatile Rotterdam cargo market, often a harbinger of international oil company price experience, rose 7–15% in 1976, but individual products exhibited contrasting trends. Gasoline, a buoyant item in early 1976, turned weak, and heavy fuel oil recovered sharply but has leveled. These adjustments at least temporarily mitigate the yield imbalance problem faced by European refiners during 1975 and much of last year. Previously, refiners could not supply an adequate amount of gasoline without making too much fuel oil. Demand trends for gasoline and heavy fuel oil are now more closely in tandem. Major company European realizations followed slightly different patterns. One firm experienced a 2% year-to-year increase in gasoline and 6% in gasoil, a decrease of 2% in heavy fuel oil, and a 2% increase overall. However, heavy fuel was up 15% in the fourth quarter and gasoline only 4%. In view of surplus refinery capacity approaching 30% in Europe and 25% in Japan, we believe it will be difficult for the industry to maintain refinery margins during 1977 in face of an assumed 7 1/2% OPEC crude price increase.

Table 7

ROTTERDAM CARGO QUOTATIONS

($ Per Metric Ton)

	Regular Gasoline	Gasoil	Higher Sulphur Fuel Oil
1975			
1st Quarter	$110	$ 84	$70
2nd Quarter	124	96	65
3rd Quarter	120	108	57
4th Quarter	125	110	55
Year	$120	$100	$62
1976			
1st Quarter	$132	$104	$66
2nd Quarter	142	106	65
3rd Quarter	141	108	67
4th Quarter	137	110	74
Year	$138	$107	$68
Incr./(Decr.) 1975–1976			
1st Quarter	20%	23%	(6)%
2nd Quarter	14	10	0
3rd Quarter	18	0	18
4th Quarter	10	0	35
Year	15%	7%	10%
1977			
Recent	$131	$121	$78
Incr./(Decr.) 1976–1977			
Recent vs. 1st Qtr.	(1)%	16%	18%

TABLE 8, LANDED PRICES OF CRUDE OIL IMPORTS IN SELECTED COUNTRIES

Landed prices of imported crude oil are estimated to have risen 5% in Europe and 7% in Japan during 1976. The European 5% increase was greater than the 2% previously mentioned improvement in realizations of one representative firm, and overseas margin pressure was evident in international oil company results last year. At that, the landed crude oil price increases were partly tempered by a decline in ocean freight costs, as illustrated by Table 8.

Table 8

LANDED PRICES OF CRUDE OIL IMPORTS IN SELECTED COUNTRIES

($ Per Barrel)

	Western Europe					
	France	Italy	U.K.	W. Germany	Average	Japa
1975	$12.42	$11.90	$11.73	$12.42	$12.12	$11.86
1976						
1st Quarter	$12.92	$11.38	$12.68	$13.41	$12.60	$12.67
2nd Quarter	12.85	12.47	12.19	13.14	12.66	12.62
3rd Quarter	12.73	12.65E	12.66	13.37	12.85	12.69
4th Quarter	12.90E	12.80E	12.65E	13.50E	12.96E	12.75E
Year	$12.85	$12.35	$12.55E	$13.35E	$12.75E	$12.70E
1975–1976						
Increase	3%	4%	7%	7%	5%	7%

E = Estimated

TABLE 9, AVERAGE FREIGHT RATE ASSESSMENTS

These figures reflect average transportation costs, rather than the far more volatile and currently lower spot market. Averages have declined rather consistently since late 1975. The 1975–1976 decline of 7–8 percentage points is equivalent to about $0.15 a barrel between the Persian Gulf and Northwest Europe. We expect average tanker rates to slip somewhat further in the present environment of chronic surplus.

Table 9

AVERAGE FREIGHT RATE ASSESSMENTS
(% of Worldscale)

	Persian Gulf –West		
	Large 1 (45,000–79,900 dwt)	Large 2 (80,000–159,900 dwt)	Large 3 (160,000 dwt+)
1975			
1st Quarter	81	62	55
2nd Quarter	82	63	57
3rd Quarter	85	63	58
4th Quarter	85	62	58
Year	84	63	57
1976			
1st Quarter	78	58	52
2nd Quarter	76	58	51
3rd Quarter	78	57	50
4th Quarter	76	55	48
Year	77	57	50
1977			
Recent	75	54	47

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Thomas C. Pryor
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Director of Investment Policy (212) 285-2060

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Edward A. Pescatello	Electric, Telephone	(212) 285-2066
Support Services		
Emily K. Baldt	Research Assistant	(302) 656-7741
Jeanne M. Gallagher	Editor	(212) 285-2075
Robert Margolis	Art Director	(212) 285-2319
Ellen L. Miller	Librarian	(212) 285-2085
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Ann T. Stott	Institutional Marketing	(212) 285-2064

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RESEARCH WIRE

February 16, 1977

A. Hager Bryant, 3rd.
(212) 285-2696

Natural Gas Delivery Curtailments
Which Industries May Suffer?

Now that virtually all gas storage facilities are depleted, natural gas deliveries to homes, small commercial establishments and industries for plant protection only are being maintained by curtailing deliveries to large commercial customers (such as schools) and industrial users.

The nations' entire economy will suffer from the curtailed deliveries but certain industries using large volumes of gas will suffer from reduced production more than others. The American Gas Association tabulates sales by its member companies to standard industry classifications. We have summarized this data in the following table so investors can better pinpoint possible areas of weakness in their portfolios.

Types of Establishment	Standard Industrial Classification	1975 sales (Trillions of BTU) 1975	% of total
Agriculture, forestry and fisheries	01-09	50	0.7%
Petroleum and natural gas production and mining	10-14	133	2.0%
Electric Generation	491, 493	1,685	25.2%
Other transport, communic. and pub. util. (excluding resale)	40-49	96	1.4%
Hotels, rooming houses, camps	70	78	1.2%
Laundries, cleaning and dyeinn	721	24	0.4%
Other services	722-899	237	3.5%
Other non-manufacturing	15-17, 50-67	188	2.8%
Food and kindred products (processing, canning, etc.)	20	339	5.1%
Textile Products, apparel, fabrics, etc.	22, 23	55	0.8%
Furniture, lumber and other products	24, 25	61	0.9%
Paper and allied produc[illegible]	26	268	4.0%
Carbon black and lamp [illegible]ack	2895	38	0.6%
Chemicals and allied products (excluding Carbon black & Lamps black)	28	887	13.3%
Petroleum refining	291	515	7.7%
Rubber products	30	45	0.8%
Glass products	321-323	174	2.6%
Cement	324	158	2.4%
Clay products, pottery, etc.	325-326	110	1.6%
Other stone products and miscellaneous	327-329	97	1.5%
Primary iron and steel ind. (ingots, sheets, rods, etc.)	331, 332, 3391	556	8.3%
Primary non-ferrous ind. (ingots, sheets, rods, etc.)	333-339	276	4.1%
Fabricated metal products, mach., equip. and supplies	34-36	277	4.1%
Transportation equipment	37	140	2.1%
Other manufacturing (excluding line 17)	21, 27, 29, 31, 38, 39	122	1.8%
Public Administration	91-97	72	1.1%
TOTAL		6,678	100.0%

Source: American Gas Association

Ltd./01/31

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The Federal Power Commission has prescribed the following priority-of-service categories for use by pipeline companies during periods of curtailed deliveries.

Priority i) Residential, small commercial (less than 50 MCF on a peak day).

ii) Large commercial requirements (50 MCF or more on a peak day), firm industrial requirements for plant protection, feedstock and process needs, and pipeline customer storage injection requirements.

iii) All industrial requirements not specified in (ii), (iv), (v), (vi), (vii), (viii), or (ix).

iv) Firm industrial requirements for boiler fuel use at less than 3,000 MCF per day, but more than 1,500 MCF per day, where alternate fuel capabilities can meet such requirements.

v) Firm industrial requirements for large volume (3,000 MCF or more per day) boiler fuel use where alternate fuel capabilities can meet such requirements.

vi) Interruptible requirements of more than 300 MCF per day, but less than 1,500 MCF per day, where alternate fuel capabilities can meet such requirements.

vii) Interruptible requirements of intermediate volumes (from 1,500 MCF per day through 3,000 MCF per day), where alternate fuel capabilities can meet such requirements.

viii) Interruptible requirements of more than 3,000 MCF per day, but less than 10,000 MCF per day, where alternate fuel capabilities can meet such requirements.

ix) Interruptible requirements of more than 10,000 MCF per day, where alternate fuel capabilities can meet such requirements.

White, Weld & Co.
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Basic Report

Philip L. Dodge
(212) 285-2043

March 4, 1977

STANDARD OIL OF OHIO (SOH)

Price (NYSE)		Dividend	EPS (December)		P/E
Current:	83	Rate: $1.36	1977E:	$5.70	14.6X
Range (1976-1977):	85-61	Yield: 1.6%	1976:	$3.55	23.4X
			1975:	$3.42	24.3X

Average Shares Outstanding:	38.5 million	Return on Average 1976 Equity:	9.1%
Market Value:	$3,196 million	Book Value Per Share (12/31/76):	$37.76

OPINION

If Alaskan North Slope oil production from Prudhoe Bay proceeds on schedule, Standard Oil of Ohio will undergo a metamorphosis in 1977, becoming the second largest U.S. crude oil producer, almost from scratch. As a result, earnings per share should rise rapidly over the next several years to an estimated $14.50-15.00 in 1978 and $16.00-17.00 in 1981, from $3.55 in 1976, the best rate of growth that we anticipate for any major oil company. Although Alaskan tax policy remains aggressive, the profit margin on Prudhoe Bay oil production should hold over time in a $1.75-2.50 a barrel range, or even improve somewhat with rising world crude prices and better logistics. In this respect, the situation may be analogous to the North Sea where the size of the pie has increased faster than governmental slices. With initial Prudhoe Bay production imminent after much uncertainty, we now recommend purchase of Sohio, a change from earlier caution reflecting concern over future state taxation.

PRUDHOE BAY PRODUCTION

Production of crude oil from the Prudhoe Bay field should begin this summer. Natural gas deliveries will be delayed for several years pending complex transportation routing decisions and actual construction of the pipeline. Prior to production, gas will be reinjected to maintain pressure.

Completion Of The Trans Alaskan Pipeline

The Trans Alaska Pipeline System (TAPS) is virtually complete. Of the original five contractors, two (Associated-Green and Alaska International Construction) have been retained to work primarily on restoration and rehabilitation of land adjoining TAPS. About 160 miles of the 800 mile line remain to be hydrostatically tested, mostly in the northern

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portion. This procedure involves filling a section of the line with water at 125% of maximum operating pressure (or 750 p.p.s.i. if greater) for a period of 24 hours. In addition, about 45 miles in the middle part of the line must be insulated, and 36 of an originally questionable 3,955 pipeline welds still may need repair. All of these mop-up tasks can be completed by spring. The U.S. Interior Department must then rule whether the pipeline complies with specifications. In this regard, it has commissioned Lester Witte Co., a Chicago accounting firm, to review previous audits for the purpose of determining if a radiographic film exists for each weld. Approval of startup must also be granted by the state of Alaska, which will concern itself with both safety and tariff.

Assuming that these steps occur in orderly sequence, which we consider probable, oil production into the pipeline will begin during July at a rate of 600,000 barrels a day. When full, the line will contain some 10 million barrels of crude oil, and initial shipments from the southern terminus of the system at Valdez will begin about Labor Day or later in September. With the addition of three pump stations to the original five, pipeline throughput will be raised to 1,200,000 barrels a day by the end of 1977.

TAPS consists of undivided interests held by Sohio at 33.34%, British Petroleum 15.84%, Atlantic Richfield 21%, Exxon 20%, Mobil 5%, Union Oil and Phillips Petroleum each 1.66%, and Amerada Hess 1.5%. Under the TAPS agreement, any participant may propose raising design capacity of the line to 2,000,000 barrels a day from 1,200,000 barrels a day currently. Any intermediate volume would require an amendment to the TAPS agreement. Sohio believes that the main Prudhoe Bay reservoir can sustain production of 1,500,000 million barrels a day for 6-8 years before declining. Accordingly, we believe an intermediate level will be opted, but timing is uncertain, partly due to limited U.S. flag tanker capacity to transport Alaskan oil beyond West Coast destinations. Oil has also been tested from the deeper Lisburne zone on the eastern side of Prudhoe Bay and both upper and lower Cretaceous zones on the western side. Development of these prospects could later support expansion of the line to 2,000,000 barrels a day.

North Slope Oil Volume

Although a unitization agreement still has not been reached, Sohio believes it will have 53-54% of the oil from the main Prudhoe Bay Pool. Its estimated share of natural gas reserves is a lesser 26%. Sohio will be entitled to all of 53-54% of main reservoir Prudhoe Bay production up to a gross rate of 686,000 barrels a day. Above this level it has 25% of the increment, the other 75% accruing to British Petroleum. Accordingly, Sohio's share at various levels of output would be as follows.

600,000 Barrels a Day

Sohio's Share = 321,000 BD (117 million barrels annually)

1,200,000 Barrels a Day

Sohio's Share = 642,000 BD (234 million barrels annually)

1,500,000 Barrels a Day

Sohio's Share = 686,000 BD
+ 25% of 117,000 BD = 29,000 BD
715,000 BD (261 million barrels annually)

MARKETING OF PRUDHOE BAY OIL

Exports of Prudhoe Bay oil are prohibited by the Trans Alaska Pipeline Authorization Act. With this constraint, marketing the oil presents major logistical problems, particularly for Sohio which has no West Coast refineries. If imports were displaced, the West Coast could absorb up to 1,200,000+ barrels a day of North Slope oil. However, Prudhoe Bay oil has quality characteristics of 26° API gravity and 1.2% sulphur which are not suitable for refining in many West Coast plants.

Present refining capacity for West Coast states included in Petroleum Administration District V is listed by the American Petroleum Institute at 2,702,000 barrels per day, and utilization has recently been about 2,265,000 BD, of which roughly 1,100,000 BD is produced in the United States and the balance imported. A breakdown of crude by principal sources is shown in the table below, along with our projection of supply-demand balance through 1980. We have assumed that refinery input will grow 4% annually after 1976.

WEST COAST SUPPLY - DEMAND
(Thousand Barrels Daily)

		Estimated				
	1975	1976	1977	1978	1979	1980
Refinery Input	1,974	2,080	2,165	2,250	2,340	2,435
U.S. Crude Oil	1,085	1,065	1,095	1,130	1,165	1,205
California	885	885	935	985	1,035	1,085
Southern Alaska	191	170	150	135	120	110
Other	9	10	10	10	10	10
Imported Crude Oil	852	980	885	480	435	400
Indonesia	295	365	375	375	375	375
Saudi Arabia	96	175	195	40	30	25
Iran	106	100	55	0	0	0
Canada	164	90	60	40	20	0
U.A.E.	50	85	75	0	0	0
Other	141	165	125	25	0	0
Other	37	35	35	35	35	35
Balance for North Slope	0	0	150	605	705	795
Estimated North Slope Availability	0	0	150	1,200	1,200	1,500
North Slope Oil Surplus to West Coast	0	0	0	595	495	705

Sohio will be unable to sell all, or even a major portion, of its Prudhoe Bay oil on the West Coast during 1978. Assuming gross output of 1,200,000 barrels a day, the company will be marketing about 642,000 BD, as calculated earlier. Atlantic Richfield has West Coast refinery capability for its 20% offtake of 240,000 BD, Exxon for 75,000 - 100,000 BD, and others for their combined 75,000 BD share. Accordingly, if the West Coast can absorb 600,000 - 700,000 BD in total, Sohio would be constrained to about 200,000 - 300,000 BD in District V, with the balance to move elsewhere. There are several possibilities.

(1) **Through the Panama Canal to the Gulf Coast.** Here, the limitation is U.S. flag tanker capacity, an irony considering the world tanker glut. The Merchant Marine Act of 1920 requires the use of U.S. flag vessels for shipments between domestic ports. By mid-1978, Sohio will have 1,896,000 deadweight tons of U.S. flag tankers available, unless further arrangements can be made. About 650,000 dwt of this fleet would be required to move 300,000 BD to the West Coast, leaving 1,250,000 dwt for the Panama Canal run. Such capacity could accommodate about 200,000 BD on this longer route. Sohio would be left to dispose of an additional 140,000 - 145,000 barrels a day.

(2) **West Coast - Midcontinent Pipeline System.** Sohio has been working since May 1975 on a proposal to transport North Slope oil from Long Beach, California to Midland, Texas. Under this plan an El Paso Company natural gas line from Jal, New Mexico to the California border and a Pacific Lighting gas line from the California border to a point 80 miles east of Long Beach would both be reversed and converted to oil. "Abandonment" of the El Paso portion has not yet been approved by the Federal Power Commission. However, the principal obstacle is opposition by the California Air Resources Board on the basis of impact on air quality. This matter is complex and may take some time to resolve. In addition, environmental impact statements are being completed by the U.S. Department of Interior and the state of California, and these must withstand possible court challenges. The Long Beach - Midland line could commence operations at 350,000 barrels a day 12 - 14 months after approval and could be expanded to 500,000 barrels a day 5 months later. It therefore seems unlikely that this system will be available in 1978 or that it can be counted on at all to move North Slope oil during early years of production.

(3) **Exchange Alaskan Oil with Japan.** This alternative is presently precluded by the Trans Alaska Pipeline Authorization Act. However, Presidential recommendation and Congressional approval could change this situation. Such action may be politically preferable to surplus Alaskan producing capacity.

PROFITABILITY OF ALASKAN OPERATIONS

Sohio's Alaskan production should average about 320,000 barrels a day during the final 5-6 months of 1977, totaling about 55 million barrels. Because of volume required to fill the pipeline, however, actual sales are likely to be a lesser 35 million barrels. Sales will be recorded when the oil is loaded on tankers at Valdez. In 1978, we expect Sohio to produce and sell approximately 640,000 barrels a day, or 235 million barrels. Timing of pipeline expansion to

some higher level is conjectural at this stage, but we will assume that volume reaches 1,500,000 barrels a day in 1980 or 1981, with Sohio's share 715,000 barrels a day or 260 million barrels.

Landed Price

The Energy Policy and Conservation Act of December 1975 provides that the President will set the price of North Slope oil by April 15, 1977 subject to Congressional review, the only proviso being that it not exceed the price of any other significant classification of U.S. crude. With stripper crude currently selling at about $14.00 a barrel, the EPCA requirement will not be a constraining factor. Rather, Prudhoe Bay crude will probably be sold on the West Coast at parity with imported oil of similar quality, if it is treated similarly for entitlement purposes. We believe this figure will be about $12.75 a barrel. In view of Saudi Arabian influence over the world price structure, we expect the North Slope landed price to rise in the future at a rate which would at least offset cost inflation. This conjecture could of course be altered by Federally administered pricing.

Ocean Freight

Transportation of North Slope oil from Valdez in southern Alaska to the West Coast will cost $0.65-0.85 a barrel, depending on tanker size and precise destination. For oil that moves through the Panama Canal to the Gulf Coast, ocean freight will be an estimated $2.50 a barrel.

TAPS Tariff

Sohio's 33.34% share of the cost of the Trans Alaska Pipeline is about $3,100 million including $500 million of capitalized interest. The tariff will be based on net income at roughly 6-7% of investment plus actual costs. We have assumed 6% in 1978-1979 and 7% in 1980-1981. The Interstate Commerce Commission, which will have jurisdiction over the tariff, requires that tax benefits from accelerated depreciation and investment tax credits be flowed through. TAPS will generate an investment tax credit of approximately $260 million for Sohio (10% of $2,600 million). For tariff purposes, Sohio will be allowed to spread this benefit over five years. We assume that TAPS will be expanded to 1,500,000-1,600,000 BD by 1981 at an additional cost to Sohio of about $270 million assuming that it maintains a 33.34% interest. Interest costs are estimated at 10% of debt, and depreciation is over 30 years. For tax purposes, however, accelerated depreciation under sum of digits retires 6½% in the first year and 5¾% in the third. Ad valorem taxes are 2% of pipeline value. Sohio's share of the throughput for tariff purposes is 67.8% (32.2% accountable to British Petroleum) of the 53-54% Sohio-BP portion of total.

CALCULATION OF SOHIO'S TAPS TARIFF
($ Millions)

	1978-1979	1980-1981
Net Income at 5-6%	180	210
Federal Taxes	166	194
State Taxes	36	42
Interest	260	285
Depreciation	75	83
Amortization of Capitalized Interest	25	27
Ad Valorem Taxes	52	57
Operating Costs	25	30
Unadjusted Revenues	819	928
Less		
Tax Benefit of Accelerated Depreciation	(49)	(47)
I.T.C.	(52)	(52)
Revenue for Tariff Purposes	718	829
Gross Throughput	1,200,000 BD	1,500,000 BD
Sohio's Share for Tariff Purposes	435,000 BD	545,000 BD
Annual	159 million	199 million
Tariff Per Barrel	$4.52	$4.17

Trans Alaska Pipeline Liability Fund

A fee of 5¢ a barrel is collected at Valdez.

Depreciation of Production Investment

Investment in production facilities is estimated at $1,780 million. Sohio-BP crude reserves are approximately 4,925 million barrels. On a unit of production basis, depreciation would be $0.36 a barrel. Amortization of capitalized interest should be about $0.10 a barrel.

Lifting Costs

Present estimates are that lifting costs will be $0.30 a barrel.

Interest Expense

Borrowings related to production facilities entail annual interest expense of about $75 million. Unit cost would be $0.30-0.35 in 1978. We assume that much of this debt will be retired by 1981, and interest expense will drop then to about $0.10 a barrel.

Alaskan Levies

The state of Alaska collects a 12½% royalty on the wellhead, a severance tax after royalty that is currently proposed to rise to 12.25% from 7.77% on per well output of 10,000 BD typical of Prudhoe crude, and a proposed 9.36% value tax. The Alaskan legislature is currently considering a severance tax increase as follows.

Per Well Output (BD)	Present Tax	Proposed Tax
0- 100	5%	0%
101- 300	5	4
301-1,000	6	6
1,001-1,500	8	9
1,501-3,500	8	11
3,501 and above	8	14
Weight average on 10,000 BD Well	7.77%	12.25%

The proposed value (franchise) tax would replace a state income tax nominally for the same amount but subject to reduction for out of state expenses. We assume that both measures will pass. The controversial "excess value" tax, tabled last year, is not before the current session.

Estimated Alaskan Unit Production Profits

The profit forecasts are derived from major assumptions discussed above. Estimates are in two categories, one for oil sold on the West Coast and the other for oil moved through the Panama Canal. Unless exchanges with Japan are allowed, we expect that about one-third of the oil will move to the West Coast, and the balance through the Panama Canal. We have assumed landed prices of $12.75 a barrel in 1978 and 1979, and $14.50 in 1980 and 1981, both figures possibly conservative.

	West Coast		Gulf Coast via Panama Canal	
	Per Barrel			
	1978-79	1980-81	1978-79	1980-81
Landed Price	12.75	14.50	12.75	14.50
Ocean Freight	0.75	0.90	2.50	3.00
Pipeline Tariff	4.52	4.17	4.52	4.17
Valdez Fee	0.05	0.05	0.05	0.05
Wellhead Price	7.43	9.38	5.68	7.28
Royalty	0.93	1.17	0.71	0.91
Severance Tax	0.80	1.01	0.61	0.78
Lifting Costs	0.30	0.40	0.30	0.40
Depreciation	0.36	0.36	0.36	0.36
Amortization of Capitalized Interest	0.10	0.10	0.10	0.10
Pre-Interest and Tax	4.94	6.34	3.60	4.73
Interest	0.32	0.10	0.32	0.10
Pre-tax	4.62	6.24	3.28	4.63
State Income Tax	0.43	0.58	0.31	0 43
Federal Income Tax	2.01	2.72	1.43	.02
Net Income	2.18	2.94	1.54	2.18

PROSPECTS FOR NON-ALASKAN OPERATIONS

A profile of Sohio's present petroleum, chemical, and coal operations is shown below.

DIVISIONAL EARNINGS
($ in Thousands)

	1975	1976	1977E
Petroleum	84.2	155.6	175.0
U.S.	62.1	142.3	160.3
Foreign	22.1	13.3	15.0
Chemicals & Plastics	54.2	46.9	50.0
Coal	52.1	32.4	35.0
Royalties	21.0	1.9	20.0
Other	(2.7)	(1.6)	5.0
Unallocated Corporate	(2.0)	0.2	--
Total Operating Profit	206.8	235.4	285.0
Net Interest Expense	19.8	42.5	
Income Tax	60.4	56.0	
Net Income	126.6	136.9	

U.S. Petroleum (60% of 1976 Total)

Petroleum profits recovered sharply in 1976 and should rise moderately further this year. In 1975, domestic refining and marketing was essentially on a break-even basis, with production providing virtually all of the $62 million in operating profits (including a $6 million capital gain). Although production profits were up slightly last year as a result of higher crude oil and natural gas prices, refining-marketing accounted for virtually all of the $80 million increase in U.S. petroleum operating profits. Product sales rose to 404,000 barrels a day from 351,000 barrels a day, and crude runs to refineries to 405,000 BD from 364,000 BD. Refinery utilization was 94% versus 84%. Operating income also benefited last year by $6 million from lower inventories on a LIFO accounting basis.

We anticipate that operating profits in this segment will improve $15-20 million in 1977 despite the absence of the $6 million inventory gain. Although relatively small in aggregate, natural gas operating results should rise by $5-10 million this year as a result of 5-6 million CFD new production from the Madden field in Wyoming and higher average prices. Increasing prices could also contribute about $5 million from modest company crude oil output. Refining-marketing profitability could, as always, swing over a wide possible range. However, current conditions are unusually stable, reflecting above average refinery utilization East of the Rockies. We consequently look for moderate downstream improvement this year. Volume should be up about 5% and margins at least as good as 1976.

Foreign Petroleum (5%)

The operating profit of $13.3 million in 1976 consists almost entirely of taxes paid to

the Iranian government. Contribution of Iranian oil to net income was less than $1 million. We expect no particular change.

Chemicals and Plastics (20%)

This segment is a composite of anhydrous ammonia and mixed fertilizer, acrylonitrile and related catalysts, and fabricated plastics. Fertilizer contributed operating profits of roughly $35 million in 1975 and $20 million in 1976; chemicals, $17 million in 1975 and $27 million in 1976. Fertilizer was hurt last year by lower ammonia prices. Acrylo operations benefitted in 1976 from plant utilization of 90% compared with 72% in the previous year. Although prices have recovered recently, fertilizer operations are hampered by inability to get adequate natural gas as raw material for ammonia, and we look for 1977 profits to be about the same as last year. Chemical volumes should continue to improve, and earnings are likely to be up 10-15%.

Coal (14%)

Sohio's coal operations suffered in 1976 from lower prices. Operating profits and margins over the past several years are shown below (figures in thousands).

	1971	1972	1973	1974	1975	1976
Operating Income	$12,722	$11,577	$12,373	$31,546	$52,083	$32,363
Tonnage	10,483	11,236	11,461	9,450	9,200	9,100
Operating Income Per Ton	$1.21	$1.03	$1.08	$3.33	$5.66	$3.56

Coal margins have been hurt partly by sales since late 1975 from a new surface mine in Indiana. Long-term contractual terms for this output had been arranged before the post-1973 surge in coal prices, and unit profitability, while not disclosed, is understood to be lower than present norms. Moreover, the 1975-1976 comparison was adversely affected by a sharp decline in the price of high volatile metallurgical coal which is exported to Japan from a mine in Virginia. The company's total coal production could rise to 12 million tons this year, including 3 million tons from the Indiana mine and initial shipments from a new underground facility in Illinois which is scheduled to reach capacity of 4.5 million tons in 1981. However, we believe that actual 1977 production will be a lesser 10.5 million tons due to probabilities of labor disruptions during the United Mine Workers election in June and a strike following termination of the present three year UMW contract in December. Considering these particularly unsettled labor conditions, we expect that 1977 coal operating profits will come out at the lower end of a possible $35-45 million range. Results in 1978 should improve significantly.

Royalties (1%)

Royalty income is primarily on a paid up basis for licensing of the company's patented acrylonitrile process. In recent years, licensing fees have swung sharply from a high of $41 million in 1974 to a low of $2 million last year. First quarter 1977 results have already benefitted from a single payment license of $7 million, and full year income could be in a wide spread of $15-30 million. We are assuming $20 million in 1977. Earlier hopes for large scale usage of acrylonitrile based resins in the plastic soft drink container market have not materialized.

Other

This category was helped last year by improvement in 49%-owned affiliate Hospitality Motor Inns. A more meaningful gain in the "Other" segment should occur this year from sales of uranium concentrate out of a 50% interest mill near Albuquerque, New Mexico. Sohio's share of concentrate output should be 500,000-700,000 pounds in 1977.

FIVE YEAR EARNINGS OUTLOOK

The following projections summarize profit prospects by major areas of activity, as each was discussed earlier. As indicated, earnings per share should jump to a $13.00-17.00 a share range during 1978-1981, compared with the recent $3.50 a share general level. During 1977 we assume that Sohio will sell 35 million barrels of Alaskan crude. However, the pipeline will make a very modest contribution until throughput reaches 1,200,000 barrels a day towards year end. Early in Alaskan production, net profits will benefit from substantial investment tax credits which could not be used previously due to the 50% of tax liability limitation. For this reason, actual i.t.c.s could vary from estimates. However, crude oil transportation costs are also likely to be the highest during this initial phase, as an offsetting factor. The myriad marketing possibilities for North Slope crude complicate the task of profit forecasting. For working purposes, we have assumed that one-third of Sohio's crude will find a home on the West Coast and the balance will move through the Panama Canal, clearly somewhat arbitrary. If exchanges with Japan are permitted and/or the West Coast/Midcontinent pipeline materializes, unit profitability would improve. In this respect, our estimates are probably conservative. On the other hand, we have not allowed for harsher Alaskan tax legislation beyond what is already being considered by the state legislature. And, our price assumptions will need periodic review. Thus, present estimates may require changes in either direction as time goes on. Common shares increase because of British Petroleum's growing interest in Sohio as Prudhoe Bay production rises.

	Actual 1976	1977	1978	1979	1980	1981
			$ Millions			
Operating Profit						
Alaskan Oil	--	165	950	950	1,370	1,370
TAPS	--	50	640	640	730	730
Other Petroleum	156	160	175	190	175	180
Chemicals & Plastics	47	50	55	55	60	65
Coal	32	35	45	50	55	60
Royalties	2	20	15	15	15	15
Miscellaneous	(2)	5	5	5	5	5
Total	235	485	1,885	1,905	2,410	2,425
Interest	42	150	415	400	385	370
Pretax	193	335	1,470	1,505	2,025	2,055
Alaskan Tax	--	15	140	145	190	195
Federal Tax	92	150	640	650	880	890
Investment Tax Credit	(36)	(75)	(200)	(75)	(25)	(50)
Net Income	137	245	890	785	980	1,020
Average Shares	38.5	43.0	60.0	60.0	61.0	61.0
Earnings Per Share	$3.55	$5.70	$14.80	$13.05	$16.05	$16.75
Alaskan Oil	--	1.35	6.80	6.80	10.30	10.30
TAPS	--	0.10	3.00	3.00	3.45	3.45
Other Operations	2.60	2.50	1.65	2.00	1.90	2.20
I.T.C.	0.95	1.75	3.35	1.25	0.40	0.80

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The table on this page of the March 4 Standard Oil of Ohio report contained an inadvertent over-estimate of Trans Alaska Pipeline profits. Please substitute this corrected version.

Philip L. Dodge

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TAPS	--	50	540	540	630	630
Other Petroleum	156	160	175	190	175	180
Chemicals & Plastics	47	50	55	55	60	65
Coal	32	35	45	50	55	60
Royalties	2	20	15	15	15	15
Miscellaneous	(2)	5	5	5	5	5
Total	235	485	1,785	1,805	2,310	2,325
Interest	42	150	415	400	385	370
Pretax	193	335	1,370	1,405	1,925	1,955
Alaskan Tax	--	15	130	130	180	185
Federal Tax	92	150	595	610	840	850
Investment Tax Credit	(36)	(75)	(200)	(75)	(25)	(50)
Net Income	137	245	845	740	930	970
Average Shares	38.5	43.0	60.0	60.0	61.0	61.0
Earnings Per Share	$3.55	$5.70	$14.10	$12.35	$15.25	$15.95
Alaskan Oil	--	1.35	6.80	6.80	10.30	10.30
TAPS	--	0.10	2.30	2.30	2.65	2.65
Other Operations	2.60	2.50	1.65	2.00	1.90	2.20
I.T.C.	0.95	1.75	3.35	1.25	0.40	0.80

Sohio's Alaskan oil profits will be extremely sensitive to the Prudhoe Bay wellhead price. Every $1.00 a barrel change is equivalent to earnings per share of $1.35 when gross production from Prudhoe Bay is 1,200,000 barrels a day and $1.55 at 1,500,000 barrels a day. In our estimates, we have assumed that two-thirds of Sohio's Alaskan oil would move through the Panama Canal at an additional cost of $1.75 a barrel. Placing this crude on the West Coast or completing the Long Beach-Midland pipeline would alone add about $1.15 a barrel to the average wellhead price. Moreover, the West Coast landed price may rise more rapidly than we have anticipated. Saudi Arabia is currently taking a moderate approach on crude oil prices in expectation of a quid pro quo from the United States regarding Middle East policy. If the U.S. does not respond, the Saudis are likely to raise prices at a more rapid rate.

FUTURE ALASKAN TAX POLICY

State taxation of Prudhoe Bay oil is a major political issue in Alaska and will probably remain so. Alaskan officials are concerned with both financing higher levels of public spending, and, perhaps more important, establishing a fund with proceeds of North Slope oil to be available after the oil is depleted. Tax proposals submitted to the 1976 session of the Alaskan Legislature would have reduced unit profitability by about 35%. With the intervention of Governor Hammond, these measures were tabled and a committee was appointed to consider the tax situation greater length. As Chairman of the committee, Senator Croft has introduced proposals in the 1977 session of the legislature to raise the severance tax effective July 1, 1977 and modify the state income tax to eliminate out of state deductions effective January 1, 1978. The state Internal Revenue Commissioner Sterling Gallagher has also recently completed a major tax study. His recommendations are similar. The state would assess a higher severance tax with safeguards as to minimum levels. And, the 9.36% state levy on taxable income would be made inviolate.

More difficult to assess is the persistency of pressure for higher state taxes in the future. Past relationship between governmental jurisdictions and oil operations are replete with instances of governments taking higher profit shares, particularly the case since oil prices have risen so sharply in recent years. As presently constituted, the Alaskan legislature is controlled by Democrats, but power in the Senate is held by a coalition of Republicans and conservative Democrats. As long as this alignment prevails, unduly harsh tax measures seem unlikely. If oil prices continue to rise, higher taxable income from Prudhoe Bay will present an appealing target from which to extract greater state revenues. This risk should be recognized but is perhaps not intolerable. The situation may be similar to the North Sea, where governments have taken increasing percentages, but unit profits on oil have nevertheless risen. In the unlikely event that oil prices were to fall, Alaska would almost surely act to stabilize per barrel income.

ALASKAN NATURAL GAS

Prudhoe Bay natural gas reserves include an estimated 16.9 trillion cubic feet in the gas cap and 8.5 trillion cubic feet in solution with crude oil. Sohio's share is estimated to be 15% from the gas cap or 2.5 trillion cubic feet and roughly 53% from the oil rim or 4.5 trillion cubic feet for a total of 7.0 trillion cubic feet, less about 0.4 trillion cubic feet to the interest of British Petroleum. On this basis, Sohio's interest would be 6.6 trillion cubic feet, or 26% of the total. Production will be subject to a 12½% royalty and a 4% severance tax for the state.

Plans to produce Prudhoe Bay gas have encountered monumental regulatory delays. Under the Alaska Gas Transportation Act of 1976, the Federal Power Commission must recommend a route for Alaskan gas transportation by May 1, 1977. President Carter will have until September 1, 1977 to make a decision, then subject to Congressional review. On February 1, Administrative Law Judge Litt of the Federal Power Commission recommended selection of the Arctic Gas Project over El Paso Alaska and Alcan Pipeline-Northwest Pipeline. Under this alternative, Arctic gas would go via the Mackenzie Delta to both the Great Lakes area (70% of volume) and the West Coast (30%). Deliveries are projected at 2¼ billion cubic feet a day in the fifth year. Construction time would be three years following approval.

Even with the Litt recommendation, the issue is far from resolved. Both El Paso and Alcan will receive further consideration. If a Canadian route is opted by U.S. officials, extensive Canadian legal and regulatory proceedings will follow. In addition, the state of Alaska strongly favors the El Paso proposal which would carry gas through Alaska for liquefication at Gravina Point on the southern coast, and it may exert considerable influence over the ultimate decision. The state is currently raising the possibility that oil recovery will be diminished unless substantial quantities of natural gas are reinjected over a long period of time.

Considering this complex setting, it is impossible to predict when Prudhoe Bay natural gas production will begin. For purposes of general assessment, however, Sohio would itself produce about 575 million cubic feet a day if gross output reaches 2¼ billion feet daily. Assuming a wellhead price of $1.00 per thousand cubic feet and a unit profit of $0.35, annual earnings per share would be $1.20.

FINANCES

Sohio's capital outlays have risen substantially in the past several years in conjunction with Alaskan oil development.

	1973	1974	1975	1976	1977E
			$ Millions		
Alaska					
Production	61	134	411	531	430
Pipeline	22	367	1,067	1,052	440
Total Alaska	83	501	1,478	1,583	870
Other	110	199	163	115	95
Total	193	700	1,641	1,698	965
Internally Generated Funds	119	172	193	200	450
Long-Term Debt	9	391	1,144	1,631	600
Common Stock	5	2	141	2	2

About $430 million remains to be spent on Prudhoe Bay development and $440 million on TAPS. The company has recently announced a $250 million debenture offering which will cover about half of the remaining Prudhoe Bay requirement, and drawdowns under existing arrangements should cover the balance of TAPS financing. The company will spend about $265 million on U.S. flag tankers in 1977. This outlay is reimbursable once charter and lease arrangements are made and is therefore excluded from capital expenditures in the table on the preceding page.

Sohio is constrained by covenants of existing agreements to a debt limit of $5 billion in connection with Alaskan oil development. About $3,241 million of this authorized indebtedness had been incurred through December 31, 1976. Actual borrowings should approach $4.5 billion other than construction of the Long Beach-Midland pipeline system which is in question, and in any event would not begin until cash flow is available from Prudhoe Bay oil.

Sohio's capital structure has been transformed over the past several years to a debt ratio that currently approaches 75%. By 1978, when Alaskan oil begins to flow in significant quantities, cash flow will be available to both reduce debt, support sizable new investments, and raise dividends. Our 1977-1981 cash flow projections are as follows.

	Estimated				
	1977	1978	1979	1980	1981
			$ Millions		
Net Income	245	895	790	985	1,035
Depreciation	225	300	325	360	400
Deferred Taxes	55	60	65	70	75
Total	525	1,255	1,190	1,415	1,510
Debt Maturities	18	33	188	120	319
Dividends at Current Rate	55	85	85	85	85
Total	73	118	273	205	404
Available for Investment and Dividend Increases	452	1,137	817	1,295	1,106

Our forecast of debt ratios is presented in the following table. For working purposes, we have assumed that the common dividend will be increased about $0.75 a share annually to approximately $5.00 a share in 1980 or a 30% payout at that time. We have not allowed for possible borrowings in connection with the proposed Long Beach-Midland pipeline.

	Yearend					
		Estimated				
	1976	1977	1978	1979	1980	1981
	$ Millions					
Amounts						
Long-Term Debt	3,627	4,210	4,250	4,050	3,930	3,630
Shareholder Equity	1,549	1,705	2,425	2,995	3,715	4,440
Total	5,176	5,915	6,675	7,045	7,645	8,070
Percents						
Long-Term Debt	70%	71%	64%	57%	51%	45%
Shareholder Equity	30	29	36	43	49	55
Total	100%	100%	100%	100%	100%	100%
Return on Average Equity	9%	15%	43%	29%	29%	25%

BRITISH PETROLEUM OWNERSHIP AND LONGER TERM CONSIDERATIONS

British Petroleum presently owns 10 million of Sohio's 39 million shares. When Prudhoe Bay is producing 1,282,000 barrels a day or more, BP's interest will increase to about 33 million of 61 million shares, or 54% of total. Majority ownership will be held by BP as early as 1978.

In our opinion, BP control of Sohio will be analogous to Royal Dutch/Shell group majority ownership of Shell Oil. As in the case of Shell, Sohio will probably be run as an autonomous U.S. member of a larger international group. Rising cash flow from Alaskan oil will most likely be redeployed into development of other domestic energy resources. Sohio will probably become active in future U.S. offshore lease sales. In addition, coal expansion could be accelerated, compared to recent years when capital constraints have limited spending to $20-40 million annually. Sohio has also been active in shale oil over the years, and this long term energy source could receive a further influx of funds.

Eight years ago, BP merged its U.S. properties with Sohio to facilitate financing of North Slope development, perhaps little realizing at the time what a formidable task this would be. Basically the same strategy should apply in the future. BP will want to continue expanding in the United States, and Sohio should benefit commensurately as this objective is pursued.

RR-77-42

–Research Department–

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FINANCIAL SUMMARY

	1971	1972	1973	1974	1975	1976
Operating Data (Mil.)						
Revenues	$1,338	$1,395	$1,515	$2,220	$2,521	$2,927
Depreciation	73	71	67	68	82	82
Pre-Tax Income	65	82	108	186	187	193
Taxes	6	222	34	60	60	56
Net Income	59	60	74	126	127	137
Operating Ratio (%)						
Pre-tax Margin	4.9%	5.9%	7.1%	8.4%	7.4%	6.6%
Tax Rate	9.2	26.8	31.5	32.3	32.1	29.0
Net Margin	4.4	4.3	4.9	5.7	5.0	4.7
Equity Turnover	1.3X	1.3X	1.4X	1.9X	2.0X	2.0X
Return on Avg. Equity	5.7%	5.7%	6.7%	10.6%	10.1%	9.1%
Per Share Data						
Earnings Per Share	$1.61	$1.63	$2.20	$3.44	$3.42	$3.55
Dividends	1.35	1.35	1.35	1.36	1.36	1.36
Price Range	46-35	49-30	86-42	86-38	85-45	81-61
Book Value	$28.63	$29.37	$30.84	$33.99	$35.55	$37.76
P/E Range	29-22	30-18	43-21	25-17	25-13	23-17
Average P/E	25	24	32	18	19	20
P/E Relative to S&P 500	146%	140%	246%	202%	181%	200%
Avg. Shares Outstanding	36.5	36.6	36.7	36.6	37.1	38.5

BALANCE SHEET SUMMARY

	December 31 – ($ Millions)			
	1970	1974	1975	1976
Current Items				
Assets				
Cash & Equivalents	$ 60	$ 118	$ 84	$ 165
Receivables	246	327	338	437
Inventories	100	197	234	239
Total Current Assets	$ 506	$ 642	$ 656	$ 841
Liabilities				
Short-Term Debt	$ 8	$ 15	$ 84	$ 21
Other Current Liabilities	208	326	366	519
Total Current Liabilities	$ 216	$ 341	$ 450	$ 540
Current Ratio	2.3X	1.9X	1.5X	1.6X
Net Assets				
Net Working Capital	$ 290	$ 301	$ 206	$ 401
Net Plant	1,093	1,747	3,281	4,869
Investments	84	53	53	52
Other Assets–Net	64	180	197	373
Total Net Assets	$1,531	$2,281	$3,737	$5,695
Capitalization				
Long-Term Debt	$ 500	$ 805	$1,949	$3,627
Deferred Items, etc.	13	232	327	508
Preferred Stock	16	12	12	11
Common Equity	1,002	1,232	1,449	1,540
Total Capitalization	$1,531	$2,281	$3,737	$5,695
LT Debt as % of Capitalization	33%	35%	52%	64%

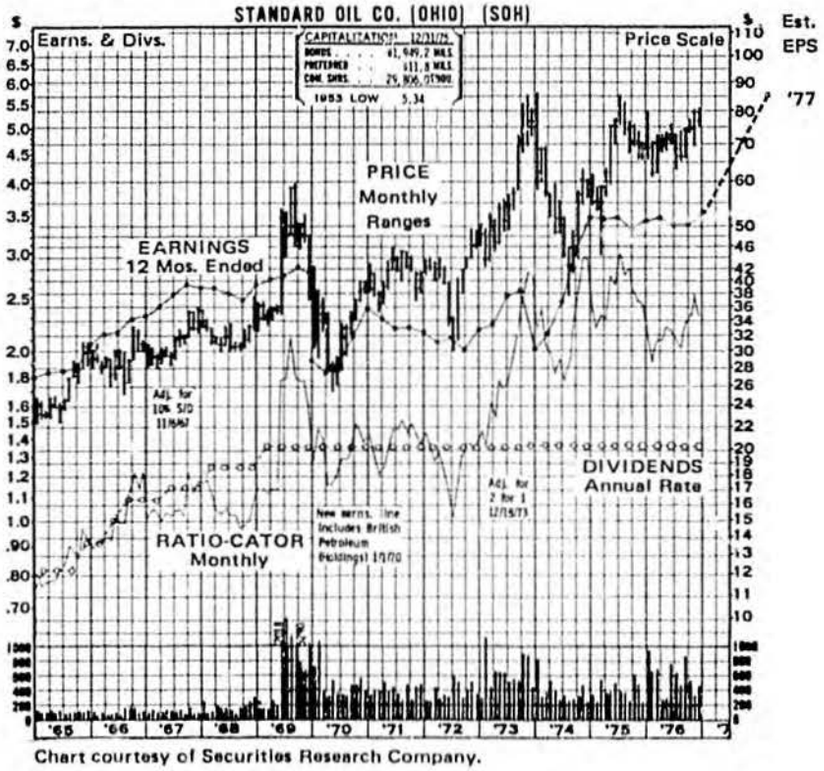

Chart courtesy of Securities Research Company.

White, Weld & Co.
Incorporated

Basic Report

Philip L. Dodge
(212) 285-2043

March 28, 1977

BRITISH PETROLEUM (BP)

Price (NYSE)		Dividend		EPS (Dec.)		P/E
Current	14	Rate:	$0.34	1978E:	$2.90	4.8X
Range (1976-77):	16-9	Yield:	2.5%	1977E:	$1.60	8.8X
				1976:	$0.79	17.7X

Average Shares Outstanding:	386 million	Return on Average 1976 Equity:	5.6%
Market Value:	$5,400 million	Book Value Per Share (12/31/76):	$14.45

OPINION

British Petroleum has entered a period of sharply rising crude oil production in the North Sea and Alaska, a most successful transition from former dependence on the Middle East. As a result, earnings per share should move up to $1.50-1.75 in 1977 and about $3.00 in 1978-1979 from $0.79 last year. Dividends are presently regulated by the government, limiting increases to a maximum of 10% annually. These controls might be relaxed in the future, and U.S. shareholders of BP could also receive a refund for the 35% British advance corporation tax on dividends if a preliminary intergovernmental treaty is ratified. Thus, the effective dividend to U.S. owners may increase by about 50% although it is more difficult to say whether in 1977.

The British Government owns 48% of BP directly and another 20% indirectly through the Bank of England. Despite concentration of government ownership, BP has historically operated as an independent commercial enterprise. The government is currently considering the sale of about 66 million shares of BP to reduce ownership by 17 percentage points to a still controlling 51%. However, Burmah Oil, which was forced to sell BP shares at a much lower price to the Bank of England in 1975, has instituted legal proceedings which may delay the contemplated sale. In addition, the government could be having second thoughts because of its own clearly improving finances. With rising North Sea production, impact of oil on the U.K. trade account should be moderately favorable by 1979-1980 compared with a deficit of $7 billion last year.

On balance, BP common stock looks attractive. At the current price, purchase of BP provides about 1 barrel of U.S. and North Sea crude oil per $1.00 of market value. The prospective 1978 earnings level should support a higher price within the next twelve months. However, near-term performance could be less favorable if the secondary offering materializes.

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NORTH SEA OIL DEVELOPMENT

BP began to produce from the North Sea in late 1975, and it should raise output over a period extending at least into the early 1980s. During this interval, BP should consistently rank as the largest producer of North Sea oil. Several fields are involved.

Forties

Among the major North Sea fields, Forties contains an estimated 1.8 billion barrels of recoverable oil, some 96% of which is under BP acreage. Gross production is currently about 375,000 barrels a day, and a rate of 500,000 barrels a day should be reached by the end of this year. Output should be sustainable at 500,000 barrels a day until about 1982, followed by a possible 10% annual decline.

Quarterly production and sales statistics for Forties crude are shown below, including estimates for 1977 and 1978. Sales generally lag production by 30 days.

FORTIES FIELD STATISTICS

(Thousand Barrels Daily)

		Estimated	
	1976	1977	1978
Production			
1Q	78	360	500
2Q	132	410	500
3Q	182	460	500
4Q	307	490	500
Year	175	430	500
Sales			
1Q	65	355	500
2Q	115	400	500
3Q	165	450	500
4Q	255	490	500
Year	150	425	500

Brought onshore, Forties oil currently has a value of $14.20 a barrel, up from about $12.90 a barrel last year, this advance reflecting the higher end of the 5-10% OPEC price increase on January 1. The pipeline tariff is roughly $0.15, leaving $14.05 at the wellhead. The government assesses a 12½% royalty on the wellhead price, about $1.75 a barrel at the moment but lower in 1976 due to temporary credits. Individual wells produce as much as 20,000 barrels a day, and we estimate that 1977 lifting costs will be a relatively low $0.50 a barrel. Depreciation of the production investment at Forties is approximately $0.85 a barrel.

Income is subject to a 45% Petroleum Revenue Tax (PRT) which in turn is deductible before the 52% Corporation Tax. For PRT purposes, a major portion of depreciation can be "uplifted" by 75% to a resulting figure at Forties of approximately $1.25 a barrel. The effective rate of PRT is also reduced by exemption of about 75 million barrels over a ten year period. Moreover, PRT cannot be applied to reduce pretax return on investment below 30%. This provision will tend to stabilize profitability after production begins to decline. Interest cannot be subtracted before assessment of PRT.

Unit earnings estimates for Forties in 1976 and 1977 are shown below. BP also makes a modest profit on the pipeline itself. Cash flow this year should be as high as $9.50 a barrel due to accelerated deductions for U.K. tax purposes. Forecasting future years is more complicated because world oil prices will probably continue to rise. For this reason, we believe that pretax profitability will tend to increase over time even if taxation becomes more onerous.

	1976		1977	
	Financial Reporting	PRT Purposes	Financial Reporting	PRT Purposes
	($ per Barrel)			
Per Barrel				
Landed Price	$12.90	$12.90	$14.20	$14.20
Pipeline Tariff	0.20	0.20	0.15	0.15
Wellhead Price	$12.70	$12.70	$14.05	$14.05
Royalty	1.15	1.15	1.74	1.74
Lifting Costs	0.80	0.80	0.50	0.50
Depreciation	0.85	1.25	0.85	1.25
PRT Allowance		0.60		0.25
Income for PRT		$ 8.90		$10.31
PRT (45%)	4.00	4.00	4.64	
Interest	1.50	–	0.50	–
Pretax Income	$ 4.40	–	$ 5.82	–
Corporation Tax (52%)	2.29	–	3.03	–
Net Income	$ 2.11	–	$ 2.79	–
Total				
Sales (mil. bbl.)	54	–	155	–
BP's 96% Share	51	–	149	–
Net Income (mil.)	$107	–	$416	–
Earnings Per Share	$0.28	–	$1.08	–

Other North Sea Properties

British Petroleum holds interests in several other North Sea discoveries, as follows.

United Kingdom

Field	Interest
Ninian	15%
Magnus	100
Andrew	45

Norway

Field	Interest
7/12	57½%

Of these four finds, Ninian is the most extensively delineated, and production is scheduled to begin in 1978. Recoverable reserves are estimated at 1,100 million barrels, and peak production should reach 375,000-380,000 barrels a day by 1981 before commencing an approximate 15% annual decline. Budgeted Ninian development costs are 1,425 million pounds sterling, or $2,450 million at the present exchange rate of $1.72. On this basis, amortization of investment will be about $1.75 a barrel, excluding the pipeline. Lifting costs are likely to be about

$0.75 a barrel once full potential is reached. Assuming the present North Sea oil landed price of $14.00-14.25 a barrel, unit profitability in early years should be in a $2.50-2.60 range, somewhat below Forties due to the more sizable investment. When full flow is reached in 1981, Ninian should make an annual profit contribution to BP of about $0.10-0.15 a share at current prices.

Magnus is the most northerly North Sea discovery. Although areal extent is large, development plans are complicated by faulting and by water depth of over 600 feet. In addition, the north-south length of the productive area itself poses logistical problems. BP is currently drilling the seventh well at Magnus, and a decision whether to proceed should be possible following completion of this test. If development is opted, BP will probably consider installing production platforms despite the water depth. At one time, Magnus was felt to hold about 800 million barrels, a figure which would justify a major outlay. The company has recently announced plans to spend $2.6 billion on U.K. exploration and development over the next five years. Although details have not been disclosed, we believe the major portion of this budget is for Magnus.

The Norwegian discovery on Quadrant 7, Block 12 is on a farmin from Continental Oil under which BP earned a 70% interest subject to a 12½ percentage point government option. BP completed this find last September at a location which had been drilled unsuccessfully to a shallower depth in 1968. The September 1976 well tested 7,100 barrels a day of crude oil and 4.2 million cubic feet a day of natural gas from a Jurassic sandstone below 10,900 feet. These flows suggest a sizable reservoir. A delineation well will be drilled shortly.

BP's North Sea production and earnings prospects over several years are estimated below. We have separated individual properties into the two categories of probable and speculative. Present North Sea margins are assumed, almost certainly a conservative influence. On estimated 1980 production, for example, a price of $1.00 per barrel higher would add $0.15 a share to earnings. Participation of 51% by the British government will not affect profitability, only flexibility in selling the crude.

	1977	1978	1979	1980	1981	1982
			(Millions)			
Annual Production						
Probable						
Forties	149	175	175	175	175	160
Ninian	–	7	13	17	21	18
Subtotal	149	182	188	192	196	178
Speculative						
Andrew	–	–	–	3	5	7
Magnus	–	–	–	25	50	70
July 12	–	–	–	–	15	25
Subtotal	–	–	–	28	70	102
Total	149	182	188	220	266	280
Net Income						
Forties ($2.81/bbl.)	$416	$492	$492	$492	$492	$450
Ninian ($2.55/bbl.)	–	18	33	43	54	46
Others ($2.50/bbl.)	–	–	–	70	175	255
Total	$416	$510	$525	$605	$721	$751
Per Common Share	$1.08	$1.32	$1.36	$1.57	$1.87	$1.95

Fifth Round Licenses

British Petroleum was the largest participant in the fifth round of offshore licenses awarded by the U.K. government on February 9. Of 46 blocks licensed, BP received 49% interests in 11 and 25% in 2. The British National Oil Company (BNOC) holds a 51% share of all the new licenses and will pay a commensurate portion of expenses. Five of the new BP tracts are in the vicinity of discoveries east of the Shetland Islands, and the others are in new prospective areas. Considerable difference of opinion exists on the potential of the fifth round. Clearly, the largest U.K. prospects have already been licensed and tested. In fact, much of the acreage in the recent awards includes earlier relinquishments. Even so, exploration possibilities remain.

BP is also seeking to acquire interests in the Bruce and Crawford fields from the Hamilton Ground and in the Buchan field from the Transworld Group. These properties appear to be relatively small by North Sea standards and would have only modest potential for a company the size of British Petroleum.

SOHIO AND OTHER U.S. INTERESTS

In 1969, British Petroleum merged most of its U.S. interests into Standard Oil of Ohio in exchange for Sohio common stock, ultimately a controlling interest. By taking this step, BP has been able to facilitate financing of Alaskan North Slope oil development through access to U.S. capital markets. Total Sohio-BP outlays for North Slope development and transportation are currently estimated at about $7.5 billion, of which BP's direct share is some $1.5 billion, mostly financed by pipeline debt which has already been arranged.

Prospects for Standard Oil of Ohio were covered at length in a Basic Report which we issued on March 4, 1977. Our main assumptions involving Alaskan oil are as follows.

1. Gross production will begin at 600,000 barrels a day in July and reach 1,200,000 barrels a day by December.
2. Production will increase to 1,500,000 barrels a day in 1980.
3. Sohio–BP will have 53-54% of the oil.
4. During early years, about one-third of the Sohio-BP oil will be sold on the West Coast and the balance at longer haul destinations.
5. The wellhead price of North Slope oil will initially be $5.75-7.50, equivalent to imported crude less transportation and treated as imported crude for entitlements purposes.
6. The Trans Alaska Pipeline will be allowed a 6-7% return on Interstate Commerce Commission valuation including capitalized interest in the rate base but flowing through tax benefits from accelerated depreciation and investment credit.
7. The state of Alaska will raise the severance tax to about 12% from 8%, and the income tax to 9% from a presently effective 5% or less, but earlier "excess profit" tax proposals will be deferred indefinitely.

8. Prudhoe Bay natural gas production will not begin until 1982.

If these general expectations are borne out, Sohio net income should rise several fold over the next year and move moderately further upward between 1978 and 1981. In this assessment, we have allowed for world crude oil prices to rise 10–15% by 1980, probably a low assumption. Our present Sohio net income estimate along with BP's equity are shown below.

	Actual 1976	1977	1978	1979	1980	1981
	(Millions)					
Alaskan Production	–	60	410	410	625	625
Trans Alaska Pipeline	–	5	135	135	165	165
Other Operations	101	105	100	120	120	135
Investment Tax Credit	36	75	200	75	25	50
Net Income	137	245	845	740	935	975
BP's Sohio Stock Ownership	26%	34%	52%	52%	54%	54%
BP's Equity in Sohio Net Income	36	83	439	385	505	527
Per BP Share	$0.09	$0.22	$1.14	$1.00	$1.31	$1.37

In addition to its equity in Sohio, BP will also obtain earnings from 15.8% ownership of the Trans Alaska Pipeline (TAPS) and a 75% net profits interest in gross Sohio-BP Prudhoe Bay production above 686,000 barrels a day. BP's annual profits from TAPS should be $65-70 million, or $0.15-0.20 a share, assuming a 6-7% return and flow through of tax benefits from the investment credit and accelerated depreciation as currently prescribed by the Interstate Commerce Commission. In addition, BP will book an investment tax credit of about $120 million ($0.30 a share), probably spread over a period of two or three years due to the 50% of tax liability limitation.

British Petroleum also has a royalty interest in Prudhoe Bay production. If total Prudhoe Bay production reaches 1,500,000 barrels a day in 1980, as appears likely, Sohio's share would be an estimated 803,000 BD. The BP royalty interest is equal to 75% of net income from *gross* production between 686,000 BD and 1,200,000 BD. Such net income on production of 117,000 BD (803,000 BD minus 686,000 BD) would be an estimated $90-125 million in 1980, the higher end of the range if all the oil can be sold on the West Coast. BP's 75% share then is $70-90 million, or about $0.20 a share.

INTEGRATED EASTERN HEMISPHERE OPERATIONS

Historically a large merchant producer of crude oil in the Persian Gulf and Africa, British Petroleum has evolved like other international oil companies into primarily a marketer of OPEC oil. This business has been, and may for some time be, one of chronically narrow margins. The following analysis estimates 1976 profitability by major sources.

Upstream –*Iran, Kuwait, Nigeria and Abu Dhabi*

Iran

British Petroleum obtains roughly half of its crude oil supply from Iran through a 40%

interest in the Consortium. Although the precise number has not been disclosed, we believe that BP purchased about 1,700,000 barrels a day in Iran last year. Offtake by Consortium members is geared to provide a discount from world crude prices of about $0.22 a barrel. On this basis, BP would have received Iranian crude in 1976 for a profit of $135-140 million or $0.35 a share.

Kuwait

Under the 1975 takeover agreement with the government, retroactive to March 5, BP is entitled to lift 450,000 barrels a day of Kuwait crude through March 31, 1980 and 400,000 barrels a day for a five-year period thereafter. This crude is available at a discount of $0.15 a barrel with 60 days of credit. The annual discount is equivalent to $25 million, or $0.06 per BP share.

Nigeria

BP's equity interest in Nigerian production during 1976 was roughly 275,000 barrels a day. In addition, the government sells about 150,000 barrels a day to BP at the buy-back price, i.e, usually on a nonprofit basis. Nigeria's buy-back price averaged about $13.00 a barrel last year, or $1.49 a barrel above the Arabian Light marker crude. The tax-paid cost of equity crude in 1976 was an estimated $12.60 a barrel, or $2.75 of royalty, $0.75 of operating costs, and $9.10 of income taxes. On this basis, BP would have netted about $40 million, or $0.10 a share, in Nigeria last year.

Abu Dhabi

BP has equity interests of 15% in Abu Dhabi Marine Areas and 10% in Abu Dhabi Petroleum, equivalent to production in 1976 of about 165,000 barrels a day. An additional 120,000-125,000 barrels a day is obtained on a buy-back basis. We estimated that an equity profit of approximately $0.35 a barrel is still available in Abu Dhabi, indicating that BP made about $20 million, or $0.05 a share there last year.

Derivation of Estimated 1976 Downstream Results

The table on the following page summarizes estimates of profitability from principal streams of crude oil as discussed earlier, assumed chemical earnings including dividends from Erdolchemie and other European affiliates which lag operating results by one year and were therefore modest in 1976, equity in Sohio and BP Canada, and financial income. It should be noted that 1976 profits also benefited from a U.K. tax credit of $121 million for advance corporation tax that had previously been written off. An undisclosed portion of the contribution from other financial income reflected favorable translations into sterling of net current assets in other countries.

	Estimated 1976 Net Income	
	$ Millions	Per Share
Production		
OPEC Area		
Iran	$135	$0.30
Kuwait	25	0.06
Nigeria	40	0.10
Abu Dhabi	20	0.05
Subtotal	$220	$0.57
North Sea		
Crude Oil	$105	$0.28
Natural Gas	10	0.02
Subtotal	$115	$0.30
Chemicals	65	$0.17
Equity in Sohio	34	$0.09
BP Canada	21	$0.05
Interest Income	50	$0.13
Other Financial Income	45	$0.12
Non-Operating Expenses		
Interest Expense (ex Forties)	$(110)	$(0.28)
Exploration Expenses	(50)	(0.13)
Corporate Overhead	(60)	(0.16)
ACT Previously Written Off	121	0.31
Total	$451	$1.17
Less Net Income	309	0.79
Indicated Downstream Loss	$(142)	$(0.38)

Despite efforts to reduce surplus capacity, BP's tanker operations apparently remain in the red, although to a lesser extent than in 1975. Two years ago, the company accelerated the retirement of 20 older vessels having a total capacity of one million tons, and last year, five tankers aggregating 700,000 tons were sold for $60 million to a joint venture with the Iranian government. These steps, along with gradually declining long-term charter commitments, should serve to eliminate the tanker deficit over the next several years, but a suddenly favorable comparison is unlikely.

About 70% of BP's product sales are in Europe, and close to half in the U.K., West Germany, and France alone. Marketing operations in the U.K. were moderately profitable during the first half of 1976, but after mid-year, pound sterling product price increases were not commensurate with rising dollar crude oil costs, due to both market factors and deteriorating exchange rates. Several government authorized price increases, most recently on December 20, 1976, have not stuck. In West Germany, pricing has been extremely competitive, and losses are believed to be the largest of any single country. France was probably closer to break even, partly because price competition has been minimal below government imposed ceilings. Deutsche BP lost $106 million and 70% owned Societe Francaise des Petroles BP $24 million ($17 million after minority) in 1975, and deficits of these subsidiaries were comparable in 1976. However, some further deterioration occurred in other continental European markets.

Since January 1, British Petroleum has been at a cost disadvantage under the OPEC two-tier crude oil price structure. A full 90% of BP's crude oil supply comes from Iran and others which have raised prices 10%, compared with about 65% for the industry as a whole. Product price flexibility is limited in Europe by surplus refining capacity approaching 30%. In addition, France has thus far imposed a 5% ceiling on product price increases. Although OPEC crude pricing may be rationalized by July 1, we expect BP's downstream margins to remain under pressure during 1977. On the other hand, North Sea oil profits are benefiting from a 10% price increase, as noted earlier.

EARNINGS AND DIVIDENDS

Our five-year profit forecast is shown below. We have allowed for the OPEC price level to be 10–15% higher in 1980–1981 than now, probably a conservative assumption.

	Estimated Earnings Per Share					
	1976	1977	1978	1979	1980	1981
OPEC Area	$0.57	$0.55	$0.50	$0.50	$0.50	$0.50
North Sea	0.30	1.10	1.35	1.40	1.60	1.90
United States	0.09	0.20	1.40	1.25	1.60	1.65
Canada	0.05	0.05	0.05	0.10	0.10	0.10
Eastern Hemisphere Downstream	(0.38)	(0.40)	(0.40)	(0.35)	(0.25)	(0.15)
Other, Net	0.16	0.10	–	–	–	–
Total	$0.79	$1.60	$2.90	$2.90	$3.55	$4.00

The handling of Eastern Hemisphere downstream results is somewhat arbitrary. In the actual event, experience is likely to be more volatile. It is also possible that capacity surpluses can be largely eliminated by 1981, allowing some profitability. Presently, however, the burden of proof is on "transferring profits downstream."

Dividend payments by U.K. corporations are regulated by the government, recently to a maximum 10% annual increase. In addition, BP shareholders in the United States receive no tax credit for the 35% advance corporation tax (ACT) on dividends as do their counterparts in Britain. U.S. stockholders of BP were paid $0.34 a share in 1976, equivalent to $0.52 before noncreditable ACT.

If dividend increases remain limited to 10% annually, we believe BP will pay the full amount allowed. Or, if controls are relaxed, BP could pay as much as $0.75 a share by 1978 (before 35% ACT), or about 40% of earnings excluding equity in Sohio. Under a December 31, 1975 preliminary tax treaty between Great Britain and the United States, U.S. shareholders of U.K. corporations would receive a refund for ACT. This treaty requires ratification by legislative bodies in both countries. Such approval would raise the effective dividend received by U.S. taxpaying shareholders by 54%.

FINANCES

Capital expenditures were $1,660 million in 1976, and outlays this year could drop slightly to about $1,500 million reflecting approaching completion of both Forties field develop-

ment and the Trans Alaska Pipeline. BP plans to spend $4,600 million in the United Kingdom during 1977–1981, including $2,600 million for further North Sea development. Consequently, we believe that total spending will average $1,750 million annually for several years after 1977. In addition, BP's share of Sohio's spending could be on the order of $400 million a year.

With cash flow likely to rise sharply over the next several years, BP should be able to readily finance this prospective level of spending from internal sources, as indicated below. High deferred income taxes result from favorable capital recovery provisions of the U.K. Petroleum Revenue Tax.

	Actual	Estimated			
	1976	1977	1978	1979	1980
		($ Millions)			
Capital Expenditures	1,660	1,500	1,600	1,700	1,800
Net Income*	275	535	735	990	960
Dividends from Sohio	14	25	85	125	165
BP Dividend	(131)	(144)	(170)	(200)	(225)
Retained Earnings	158	416	650	915	900
Depreciation	452	550	650	725	800
Deferred Income Taxes	375	1,000	500	300	300
Cash Flow	985	1,966	1,800	1,940	2,000
(Deficiency) Surplus	(675)	466	200	240	200

* Excluding estimated equity in Sohio as follows: 1976, $34 million; 1977, $80 million; 1978, $440 million; 1979, $385 million; 1980, $505 million.

RR-77-51

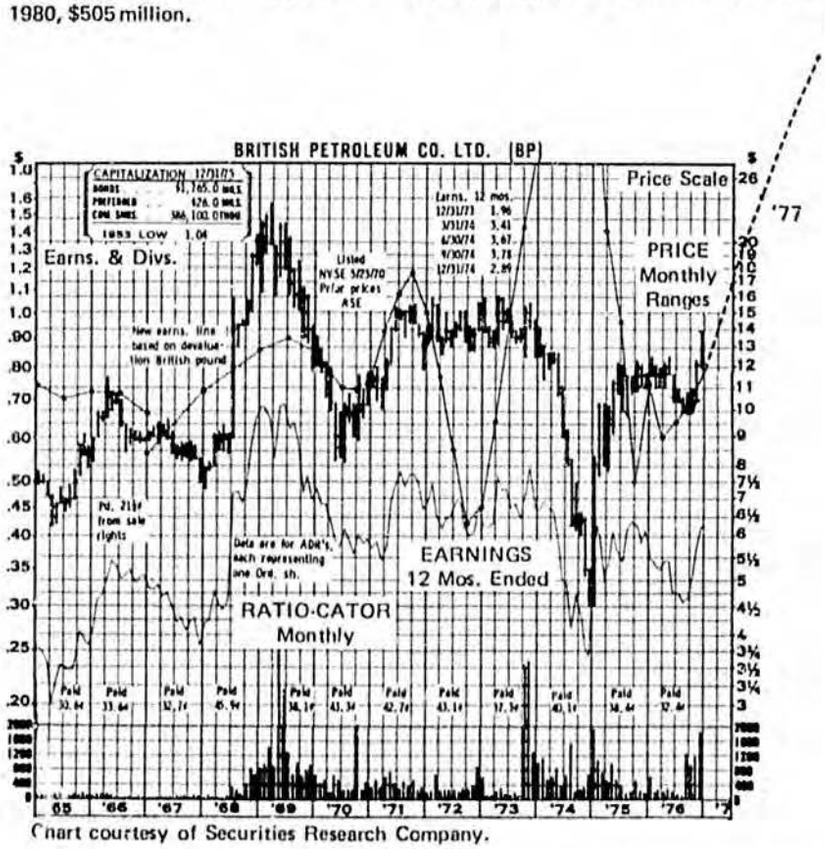

Chart courtesy of Securities Research Company.

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White, Weld & Co.
Incorporated

Thomas C. Pryor
Executive Vice President (212) 285-2666

Harold W. Janeway
Director of Investment Policy (212) 285-2060

Jerome P. Kenney
Director of Research (212) 285-2020

Richard A. Kimball
Director of Marketing (212) 285-2374

Frank J. Ritger
Senior Vice President (212) 285-2120

A. Gary Shilling
Chief Economist (212) 285-2670

Basic Industries		
George H. Cleaver	Metals & Mining	(212) 285-2012
Frederic S. Coffman, Jr.	Forest Products, Paper	(212) 285-2748
Betty M. Fagan	Pollution, Publishing, Capital Goods	(212) 285-2054
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William N. Walling, Jr.	Coal	(212) 285-2438
Consumer Products & Services		
William R. Gill, Jr.	Retail Trade	(212) 285-2070
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Energy		
A. Hager Bryant, 3rd	Gas Pipelines and Distribution	(212) 285-2696
Philip L. Dodge	Oil, Gas	(212) 285-2043
John H. Hayward, Jr.	Oil Services & Related	(212) 285-2032
John L. Kalmbach	Natural Gas, Resources, Diversified	(212) 285-2065
Richard L. Davisson, Jr.	Oil Consultant	(617) 482-7767
Financial Services		
A. James Donohue	Banks, S&L's, REIT's, Mortgage Insurers, Misc. Real Estate	(212) 285-2010
Gerald E. Lewinsohn	Insurance	(212) 285-2000
Health Care		
Michael M. Harshbarger	Drugs	(212) 285-2698
L. John Wilkerson	Hospital Products	(212) 285-2695
Market Analysis		
H. Carroll Mackin	Computer Support–Performance Monitor	(212) 285-2056
Peter J. Canelo	Computer Support–Performance Monitor	(212) 285-2256
John A. Mendelson	Technical Analyst	(212) 285-3753
Technology		
Stover L. Babcock, Jr.	Special Situations	(212) 285-2026
James C. Blair	Computers, Office Equipment	(212) 285-2045
Craig W. Fanning	Electrical Equipment	(212) 285-2030
Anthony G. Langham	Instrumentation, Semiconductors	(212) 285-2047
Jack K. Smith	Computers	(302) 656-7741
Utilities		
Marjorie M. Jones	Electric, Telephone	(212) 285-2040
Edward A. Pescatello	Electric, Telephone	(212) 285-2066

Support Services		
Emily K. Baldt	Research Assistant	(302) 656-7741
Jeanne M. Gallagher	Editor	(212) 285-2075
Robert Margolis	Art Director	(212) 285-2319
Ellen L. Miller	Librarian	(212) 285-2085
Mary M. Rieser	Assistant to Director of Research	(212) 285-2020
Ann T. Stott	Institutional Marketing	(212) 285-2064

ONE LIBERTY PLAZA, NEW YORK, N.Y. 10006

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White, Weld & Co.
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Progress Report

MANAGEMENT CONTACT

Philip L. Dodge
(212) 285-2043

December 20, 1976

CONTINENTAL OIL COMPANY (CLL)

Price (NYSE)		Dividend		EPS (Dec.)		P/E
Current:	37	Rate:	$1.20	1977E:	$5.00	7.4X
Range (1976):	41-33	Yield:	[illegible]%	1976E:	$4.60	8.0X
				1975:	$3.25	11.4X
Average Shares Outstanding:		106,910,000		Return on Average 1975 Equity:		16.4%
Market Value		$3,955 Million		Book Value Per Share (9/30/76):		$24.02

1. We have recently visited Continental Oil. The company has an excellent position in coal, one that other firms are trying to emulate, and favorable North Sea oil prospects. Coal margins are currently under pressure due to excess mining capacity and ample inventories. Immediate investment appeal may also be limited by the probability that horizontal divestiture, or dividing companies like Continental into basic energy sectors like oil or coal, will be debated in the 95th Congress. Divestiture is a rather drastic, unlikely step, in our opinion, and one that would not reduce the investment value of Continental. The company's earnings per share have increased in each of the past five years, jumping about 40% in 1976. We anticipate further significant improvement. Longer term prospects are enhanced by meaningful contributions from North Sea oil to begin in 1978. Consequently, despite near term uncertainty in coal, we recommend that present holdings be maintained and further stock be accumulated on possible weakness.

2. The company's **U.S. crude oil production** will average about 170,000 barrels a day in 1976, down 4% from 178,000 barrels a day in 1975. Lower tier is about 63% of total, upper tier 28%, and stripper 9%. The average wellhead price for the year should be about $7.65 a barrel and about $8.35 in 1977, compared with $7.26 a barrel in 1975. A further production decline of 8,000 barrels a day, or 4-5%, is likely next year, but price improvement should more than offset this negative influence.

3. Continental's **U.S. natural gas production** has risen this year, and a further increase is likely in 1977. The indicated volume trend in daily MCF is: 1975, 860,000; 1976, 900,000; 1977, 925,000-930,000; 1978, 950,000. Recent improvement primarily reflects a 95,000 MCF a day benefit from liquidation of the Delhi Taylor production payment. New production from the West Cameron area in the Gulf of Mexico should contribute about 25,000 MCF daily next year and 65,000 MCF

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QUARTERLY EARNINGS PER SHARE

	1975					1976					
	1Q	2Q	3Q	4Q	Year	1Q	2Q	3Q	4Q(e)	Year(e)	1977(e)
Petroleum Exploration & Production											
United States	$0.45	$0.30*	$0.37	$0.40	$1.52	$0.41	$0.41	$0.38	$0.40	$1.60	$2.05
International	(0.03)	(0.10)	(0.07)	(0.14)	(0.34)	0.05	0.00	0.01	0.10	0.16	0.20
Hudson's Bay Oil and Gas	0.09	0.09	0.09	0.08	0.35	0.11	0.08	0.08	0.08	0.35	0.40
Subtotal	$0.51	$0.29	$0.39	$0.34	$1.53	$0.57	$0.49	$0.47	$0.58	$2.11	$2.65
Petroleum Refining, Marketing and Transportation											
United States	$(0.06)	$0.08	$0.11	$(0.04)	$0.09	$0.01	$0.07	$0.07	$0.05	$0.20	$0.20
International	0.14	0.11	0.03	(0.16)	0.12	0.15	0.03	0.11***	0.05	0.34	0.30
Subtotal	$0.08	$0.19	$0.14	$(0.20)	$0.21	$0.16	$0.10	$0.18	$0.10	$0.54	$0.50
Worldwide Petroleum	$0.59	$0.48	$0.53	$0.14	$1.74	$0.73	$0.59	$0.65	$0.68	$2.65	$3.15
Coal											
Operating	$0.23	$0.25	$0.16	$0.47	$1.11	$0.39	$0.40	$0.28	$0.30	$1.37	$1.45
Capital Gains	—	0.12	—	0.17	0.29	0.20	—	—	—	0.20	0.10
Subtotal	$0.23	$0.37	$0.16	$0.64	$1.40	$0.59	$0.40	$0.28	$0.30	$1.57	$1.55
Chemicals	$0.11	$0.07	$0.08	$0.05**	$0.31	$0.12	$0.16	$0.15	$0.20	$0.63	$0.75
Minerals	(0.02)	(0.03)	(0.03)	(0.04)	(0.12)	(0.03)	(0.03)	(0.03)	(0.05)	(0.14)	(0.15)
Foreign Exchange	(0.10)	0.03	0.23	0.06	0.22	0.17	0.02	0.02	0.02	0.23	—
Other Corporate	(0.01)	(0.06)	(0.16)	(0.07)	(0.30)	(0.18)	(0.06)	(0.06)	(0.10)	(0.40)	(0.25)
Earnings Per Share	$0.80	$0.87	$0.81	$0.77	$3.25	$1.40	$1.08	$1.00	$1.05	$4.54	$5.05

*After $(0.15) for settlement of Olin litigation.
**After $(0.05) writeoff.
***Includes $0.06 from sales of petroleum coke that applied to earlier quarters.

daily in 1978. The company has reserves on High Island Block 110 offshore Texas which could add 45,000 MCR daily in 1978-79 and a recent 33.3% interest discovery on Mustang Island Block A-85. We believe that the company's gas production will at least hold even for several years beyond 1978.

Continental's average wellhead price (thousand cubic feet) should average 45-47¢ in 1976 and 60¢ in 1977, up from 34¢ last year. Approximately 45% of deliveries are intrastate, 30-35% interstate pre-1973, and the balance of the newer $0.93 and $1.43 vintages. On these assumptions, domestic natural gas revenues should average about $155 million in 1976 and $205 million in 1977, up from $107 million last year. After royalties and income taxes, the 1977 benefit to earnings should be about $20 million or $0.18-0.19 a share.

4. The company's **Libyan crude oil production** should average about 230,000 barrels a day in 1976, up from 165,000 barrels a day in 1975. Profitability has improved since midyear in a buoyant crude market, and we estimate that 1976 net income from Libya will reach $30 million or $0.28 per Continental share. Output from Dubai is also up and should average 95,000 barrels a day for the year compared with 77,000 barrels a day in 1975. The Dubai operation is contributing $0.10-0.15 a share annually, and we expect this level to continue.

5. Continental has interests in four commercial **North Sea** oil discoveries. Production will begin in 1977 and rise significantly over the following eight years, as shown below.

ESTIMATED CONTINENTAL NORTH SEA PRODUCTION
(Barrels per Day)

	Thistle	Dublin	Statfjord	Murchison	Total
1977	1,000	–	–	–	1,000
1978	3,000	5,000	–	–	8,000
1979	5,000	10,000	15,000	–	30,000
1980	5,000	15,000	39,000	15,000	74,000
1981	5,000	15,000	39,000	35,000	94,000
1982	4,000	15,000	39,000	35,000	93,000
1983	4,000	14,000	78,000	35,000	131,000
1984	4,000	13,000	117,000	33,000	167,000
1985	4,000	12,000	117,000	31,000	164,000

We believe that world crude oil prices will be rising over the next decade, and profitability of North Sea production will accordingly move up from the present range of $2.25-2.75 a barrel. In estimating future Continental North Sea earnings, we are assuming a $3.00 a barrel profit level, probably conservative considering North Sea producers will net about 30% of future OPEC price increases. Considering the prospect for rising world crude prices, a $3.00 unit profit could hold up even if the United Kingdom or Norway later raises taxes again. Using the $3.00 figure, Continental's North Sea earnings per share should reach $0.75 in 1980 and $1.70 in 1984.

6. Consistent with a general industry pattern, Continental has experienced some recovery in **U.S. refining and marketing** profits in the first half of 1976, reflecting both recovery of earlier costs and better refinery utilization. Unlike most others, it has also registered modest **downstream improvement in the Eastern Hemisphere,** mainly due to a swing from red to black in Italy and better results in Sweden. Profits per barrel of oil refined are shown below. Continental's **tanker operations** remain about on a break-even basis, as they were in 1975. The Humber (U.K.) refinery which has a 30% gasoline yield and important petroleum coke output, accounts for Continental's relatively high overseas margin.

DOWNSTREAM COMPARISONS
(Millions)

	United States			Overseas		
	Net Income	Barrels Refined	Per Barrel	Net Income	Barrels Refined	Per Barrel
1975						
1Q	$ (5.7)	28.2	$(0.20)	$13.8	10.4	$1.33
2Q	8.0	28.8	0.28	11.7	14.6	0.80
3Q	11.1	30.5	0.36	3.5	13.0	0.27
9 Mos.	$13.4	87.5	$0.15	$29.0	38.0	$0.76
1976						
1Q	$ 1.1	30.5	$0.04	$15.2	9.3	$1.63
2Q	7.3	30.9	0.24	3.6	9.7	0.37
3Q	7.9	32.5	0.24	11.4*	10.6	1.08
9 Mos.	$16.3	93.9	$0.17	$30.2	29.6	$1.02

*Includes about $7 million applicable to prior periods.

7. **Coal** earnings per share are likely to increase 10-15% this year to $1.55-1.60 from $1.40 in 1975. Liquidation of the Consol production loan added an estimated $0.40 a share, but this benefit has been partially offset by a decline of $0.10 a share in property sales and margin pressure resulting from ample inventories in the hands of electric utilities. Productivity in deep mines continues to average 10 tons per man day. Quarterly profit spreads (excluding capital gains) have been as follows.

COAL MARGIN COMPARISONS
(Millions)

	Net Income	Tonnage	Per Ton Profit
1975			
1Q	$ 23.2	12.1	$1.92
2Q	25.5	12.6	2.02
3Q	16.5	11.0	1.50
4Q	47.6	13.5	3.53
Year	$112.8	49.2	$2.29
1976			
1Q	$ 39.9	13.7	$2.91
2Q	41.1	12.9	3.19
3Q	29.9	10.9	2.74
4Q	35.0	13.0	2.69
Year	$145.9	50.5	$2.89
1977E	$156.0	52.0	$3.00

Bolstered by an estimated increase of 7-8% in utility markets, U.S. coal consumption should rise 4-5% in 1976. However, earlier excessive inventory accumulations have not been worked off, and supply of high sulphur coal exceeds demand. We presently estimate that U.S. coal consumption will rise 3-5% in 1977, reflecting higher kilowatt hour sales, further shifts to coal as boiler fuel, and benefits to steel demand from higher economic activity. This forecast allows for a 3-4 week United Mine Workers strike upon expiration of the current three-year contract next December, assuming that utilities will stock up further in anticipation of this shutdown. Although Continental sells all of its coal under long-term contracts, cost passthroughs are more easily facilitated when supply is tight. We believe there is a better-than-even chance of of a sellers' market by the fall of 1977 and are therefore assuming full year margin improvement to about $3.00 a ton after taxes. Without a strike, Continental should mine about 55 million tons next year. A 3-4 week strike would reduce this potential to 52 million tons.

Continental plans to raise mining capacity to 91 million tons by 1985, of which steam coal would be 78 million tons versus 49 million currently and metallurgical 13 million (versus 6 million). We consider this objective realistic in view of both economic and political incentives which favor coal for boiler fuel over residual oil. Political incentives must include the matter of high sulphur content, and we understand the Carter Administration will address this problem early. Assuming modest margin improvement from both a generally escalating price structure and rollovers of presently low priced contracts, Continental's coal earnings should rise at about a 10% annual rate over the next five years.

8. **Chemical** profits have risen significantly this year, reflecting better polyvinyl chloride volume and prices, and improved realizations on vinyl chloride monomer exports. We presently look for about a 10% chemical profit increase in 1977.

9. The **corporate** account, which can fluctuate widely from year to year, should aggregate a loss of about $20 million this year comparable with a deficit of $8 million in 1975. Negative items in this composite are: 1) net interest expense, which should approximate $35 million this year, and 2) corporate administrative expense, about $50 million in 1976. Offsets are the investment tax credit, estimated at about $25 million this year compared with $18 million in 1975, and equity in earnings of affiliates in a 1976 range of $10-15 million. Foreign exchange results are also included, a positive $21 million in the first nine months.

10. Capital **expenditures** should total about $730 million in 1976, up on a comparable basis from $703 million in 1975. The $703 million 1975 figure excludes $98 million for the purchase of Sulpetro of Canada Ltd. Outlays in 1976 were partially financed by sales in May of $200 million of 8 7/8% 25-year debentures and 4,500,000 shares of common stock (proceeds $149 million).

Spending of $975 million is budgeted for 1977. Although this level will probably exceed funds provided internally (see below), further outside financing is unlikely in 1977 due to ample cash holdings, currently about $950 million. This strong financial position also allows flexibility in raising the $0.30 a share quarterly dividend in 1977.

	1975	1976E	1977E
		$ Millions	
Total Capital Outlays	801	730	975
Retained Earnings	217	350	395
Non-Cash Charges	394	370	425
Funds Provided by Operations	611	720	820
Deficiency	190	10	155

11. Continental has recently made management changes in connection with earlier political contributions. Although disruptive, these moves do not undermine future growth prospects, in our opinion.

RR-76-184

–Research Department–

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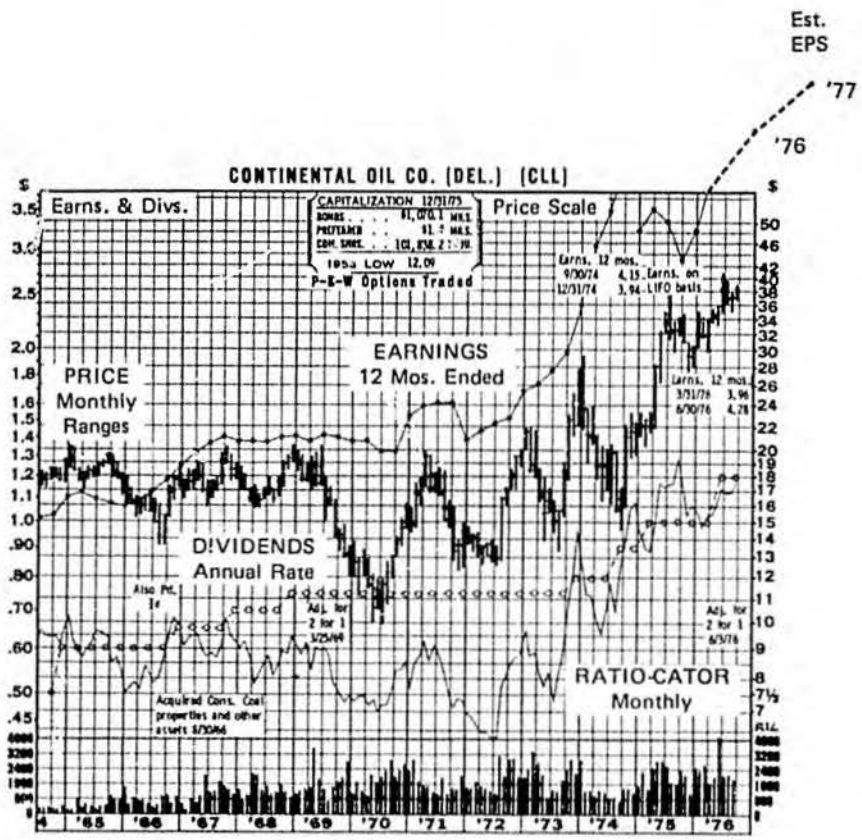

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White, Weld & Co.
Incorporated

Thomas C. Pryor
Executive Vice President (212) 285-2666

Harold W. Janeway
Director of Investment Policy (212) 285-2060

Jerome P. Kenney
Director of Research (212) 285-2020

Richard A. Kimball
Director of Marketing (212) 285-2374

Frank J. Ritger
Senior Vice President (212) 285-2120

A. Gary Shilling
Chief Economist (212) 285-2670

Basic Industries

George H. Cleaver	Metals & Mining	(212) 285-2012
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Edward A. Pescatello	Electric, Telephone	(212) 285-2066

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Jeanne M. Gallagher	Editor	(212) 285-2075
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Basic Report

Philip L. Dodge
(212) 285-2043

January 12, 1977

SOUTHLAND ROYALTY COMPANY (SRO)

Price (NYSE)		Dividend		EPS		P/E
Current:	40	Rate:	$0.68	1977E:	$2.85	14.0X
Range (1976-1977):	43-20	Yield:	1.7%	1976E:	$2.25	17.8X
				1975:	$1.76	22.7X

Average Shares Outstanding:	12 million	Return on Average 1975 Equity:	35%
Market Value:	$480 million	Book Value Per Share (9/30/76):	$6.85

OPINION

Southland Royalty is a U.S. petroleum exploration-production company and, we believe, an attractive long-term investment. However, the stock has moved up sharply in recent weeks along with most of the producing company group, and it may now be selling about in the middle of a probable 1977 range, assuming a 12-18 P/E ratio.

Over the next three years, Southland should experience crude oil and natural gas price increases of 10-15% annually. Moreover, it is one among few companies which can raise natural gas production through development drilling rather than requiring successful exploration. The company attained this preferable position through the February 1976 purchase of Aztec Oil & Gas, a firm holding 850 billion cubic feet of gas reserves in the San Juan Basin of New Mexico, or 30 years of production at the current rate. Through a combination of increasing prices and rising natural gas production, Southland's earnings per share should reach $4.25-4.50 by 1979, roughly double the 1976 level.

We believe the recent FPC decision to price new intrastate gas at $1.42 per thousand cubic feet plus $0.01 quarterly escalation will ultimately prevail in court, although the process may be lengthy. Of further significance, the energy program of President-elect Carter will probably include a proposal to remove price controls from future new production either indefinitely or for a period of five years. In this event, prices would probably move to parity with imported oil, or to $2.25-2.50 per thousand cubic feet. The importance of this repricing to producers bears further emphasis. Last July, the FPC raised the new gas price 175% from the previous level of $0.52. Decontrol would add an additional 65%. From another perspective, a new well depleting one billion cubic feet of reserves would previously have generated revenues of $520,000 (excluding escalation). Under the FPC decision, this figure would rise to $1,420,000, and decontrol would result in $2,350,000. Exploration efforts obviously promise far greater rewards.

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In our opinion, the stock market is already recognizing a portion of the higher value of natural gas reserves. Southland Royalty, for example, roughly doubled in 1976, and it is now selling to about 32¢ per MCF of natural gas and equivalent reserves in the ground. However, producing companies with active exploration efforts, particularly ones like Southland with long life reserves, should continue to be above-average investment vehicles over a 12-month or longer period.

BACKGROUND

Southland Royalty is a U.S. petroleum exploration and production company. Historically, income was obtained primarily from royalty interests in the Waddell Ranch of West Texas, but operations have been transformed by two major events in the past 18 months. On July 14, 1975, the company regained full mineral interests in Waddell Ranch, those having been leased to Gulf Oil for the previous fifty years. In early 1976, Southland acquired Aztec Oil & Gas for a cash payment of about $180 million. Revenues and production rose dramatically after each of these additions, as shown below.

	1975		1976
	2Q	4Q	2Q
Revenues (Thous.)			
Oil	$9,448	$12,787	$16,985
% over Previous		35%	33%
Natural Gas	$1,988	$ 9,084	$14,811
% over Previous		357%	63%
Daily Production			
Oil (Bbls.)	12,400	24,000	25,900
% over Previous		93%	8%
Natural Gas (MMF)	55	115	184
% over Previous		109%	60%

The addition of Waddell Ranch natural gas was particularly significant because previously Southland had been receiving only 4¢ per MCF on casing-head gas and $200 per well on gas well gas.

Southland's estimated reserves were last reported as of January 1, 1975. These figures plus estimates available more recently for Aztec properties are shown in the table on the following page.

	Crude Oil (mil. bbl.)	Natural Gas (bil. CF)
Southland ex Waddell Ranch	42	154
Waddell Ranch	70	192
Aztec Oil & Gas	10	928
Total (Year's Life)	122 (13)	1,274 (19)
Conversion of Oil to Gas at BTU Equivalent of 6 MCF (Per Barrel)		732
Total Gas Equivalent		2,006 (1)
		--millions--
Current Market Value		$480
Long-Term Debt		168
Total		$648 (2)
Value per MCF (2) ÷ (1)		32¢

This calculation indicates that Southland is currently selling at the equivalent of natural gas in the ground at 32¢ per MCF. This valuation appears reasonable in relation to the company's present average selling price for natural gas of $1.00, with prospects for rapid increases over the next several years.

PRICING OUTLOOK

Like other domestic producers, Southland is receiving significant benefits from rising crude oil and natural gas prices. Quarterly price and volume trends during 1975 and 1976 were as follows.

	Crude Oil			Natural Gas			
	Thousand Barrels (000)	Revenues in $000	Average Oil Price	Thousand MCF (000)	Revenues in $000	Average Natural Gas Price	Total Revenues in $000
1975							
1Q	1,107	$ 8,991	$8.13	4,612	$ 1,938	$0.42	$10,929
2Q	1,132	9,448	8.35	5,042	1,988	0.39	11,436
3Q	1,889	13,407	7.10	8,482	9,666	1.14	23,073
4Q	2,205	12,787	5.80	10,616	9,084	0.86	21,871
Year	6,333	$44,633	$7.05	28,751	$22,676	$0.79	$67,309
1976							
1Q	2,237	$15,792	$7.06	15,691	$14,750	$0.94	$30,542
2Q	2,358	16,985	7.20	16,780	14,811	0.88	31,796
3Q	2,360	16,798	7.12	16,731	15,290	0.91	32,088
4Q (Est.)	2,350	17,155	7.30	16,798	16,739	0.99	33,894
Year (Est.)	9,305	$66,730	$7.17	66,000	$61,590	$0.93	$128,320
1977 (Est.)	9,125	$70,720	$7.75	73,000	$83,950	$1.15	$154,670

Southland's crude oil mix is about 70% lower tier and 30% upper tier including a modest amount of stripper. As evident above, the average crude price fell in the second half of 1975 when working interests at Waddell Ranch were included for the first time. On the other hand, the purchase of Aztec Oil & Gas in early 1976 raised the percentage of upper tier crude. Prices should benefit in 1977 from new crude out of the South Pumpkin Creek and Teton areas of Wyoming, and later in the year from the rising Federal Energy Administration schedule.

Southland's annual natural gas production is presently divided about as follows:

	Billion Cubic Feet
San Juan Basin	28
Waddell Ranch	17
Other	25
	69

Southern Union Company is the principal gas buyer in the San Juan Basin. About 55% of Southland's production moves to interstate markets, with the balance remaining within New Mexico. The interstate price, which is established by the Federal Power Commission, currently averages 37¢ per thousand cubic feet including liquids value (29.5¢ per million BTU). San Juan gas has an unusually high BTU content. The price for intrastate gas rose to $1.30 per MCF from $0.85 as of July 27, 1976, and an additional penny on January 1, 1977. There will be a further escalation to $1.41 per thousand cubic feet on April 1, 1977.

The agreement with Southern Union is subject to further annual price redeterminations on April 1, 1978 and April 1, 1979. On those dates, intrastate prices will be calculated as an average of the highest in the San Juan Basin and the rest of New Mexico, with a 50% weighting for the San Juan Basin in 1978 and 25% in 1979. If new natural gas is decontrolled by then, we believe that interstate buying competition will raise the intrastate price to $2.50 per thousand cubic feet.

About 70% of Waddell Ranch production goes to Houston Natural Gas under a contract terminating in 1996 at a price of $2.40 a thousand cubic feet ($2.00 per million BTU), escalating 2½¢ on July 1 and 2½¢ every six months thereafter. The balance has recently been sold under an old contract to El Paso Natural Gas at $0.81 ($0.68 per million BTU). If a December 1976 court decision prevails, Southland will henceforth deliver this gas to an intrastate buyer at the $2.40 price.

PRODUCTION TREND

Natural Gas

Southland has recently completed a 17 well (15 net) development drilling program in the Mesa Verde formation of the San Juan Basin. These new wells will add about 4.2 billion cubic feet to annual production beginning this month. Thirteen of them will receive the 1975-1976 vintage new gas price of about $1.70-1.75 per thousand cubic feet ($1.44 per million BTU). Annual revenues will benefit by about $6.5 million.

San Juan Basin reserves are equal to 30 years of production at the current rate, and further infill drilling is feasible for some time in the future. Southland plans a 50 well program in 1977 with annual production expected to benefit by about 10 billion cubic feet. The estimated cost of this program is $10 million, or $200,000 per well. Present intentions are to maintain drilling activity at this level in 1978 and 1979. On this basis, Southland's San Juan Basin production should rise approximately as shown on the following page. We have arbitrarily assumed lower productivity from infill wells in later years.

	Estimated Billion Cubic Feet				
	1976	1977	1978	1979	1980
Existing Wells	25*	26	24	22	20
Infill Wells	–	4	14	22	28
Total	25	30	38	44	48

* Aztec purchased in February.

Southland has interests in two offshore natural gas discoveries–Vermilion 22 (6¼%) and East Cameron 231 (10%)–where production is scheduled to begin by mid-1977. Combined annual output net to Southland should be on the order of 4 billion cubic feet, or 10 million cubic feet a day. Minor reserves will also be developed later on South Marsh Island 249-250, obtained in the Aztec purchase. Onshore, Southland is developing a 50% interest 1975 discovery called Bayou Boullion in St. Martin Parish, Louisiana which should add annual production of about 2 billion cubic feet.

Oil development is presently limited mainly to the Powder River Basin of Wyoming where a new discovery was made in the Heldt Draw field during 1975. Several wells are producing from the Shannon sand of the South Pumpkin Creek area at a rate net to Southland approaching 1,000 barrels a day, and delineation drilling is continuing to the southeast at three locations. Last year, Southland made a similar discovery nearby called Teton, and a confirmation well called Streeter was recently completed at a rate of 390 barrels a day. At least two other development wells will be drilled.

EXPLORATION

Southland has about 2,500,000 net acres of undeveloped properties. Approximately $12 million was spent on exploration last year, and a budget of $17 million has been authorized for 1977. In addition, the company plans to acquire Westhoma Properties as of April 1, 1977 for $4½ million. Involved in this transaction are about 90,000 acres in the Oklahoma Panhandle which are prospective for natural gas in the Morrow sand.

Exploration efforts are focused onshore east of the Rocky Mountains in all major basins. Spending is anticipated to rise in line with available cash flow.

OUTLOOK

Southland should benefit over the next several years from rising natural gas production, and higher natural gas and crude oil prices. As estimated below, revenues and profits are likely to continue a strong upward trend. The company follows the "successful efforts" practice of accounting under which dry holes are charged against current income. Offshore leases are capitalized until evaluation is completed. The company currently carries about $7½ million in the capitalized category.

1977–1979 OUTLOOK
(millions)

		Estimated			
	1975	1976	1977	1978	1979
Production					
Crude Oil (mil. bbl.)	6.3	9.3	9.1	8.9	8.7
Natural Gas (bil. CF)	28.8	66.0	73.0	81.0	90.0
Average Price					
Crude Oil (bbl.)	$7.05	$7.17	$7.75	$8.50	$9.35
Natural Gas (MCF)	0.79	0.93	1.15	1.35	1.50
Revenues					
Crude Oil	$44	$67	$ 71	$ 76	$ 81
Natural Gas	23	61	84	109	135
Other	1	1	1	1	1
Total Revenues	$68	$129	$156	$186	$217
Production Expenses	$ 6	$15	$17	$ 19	$ 21
Exploration Expenses	10	12	17	21	25
General and Administration	4	6	7	7	8
Operating Taxes	1	9	11	13	16
Abandonments	1	3	3	4	5
Depreciation, Depletion	6	19	21	23	26
Interest Expense	1	15	17	19	21
Total Expenses	$29	$79	$93	$106	$122
Earnings Pretax	$39	$50	$63	$80	$95
Income Tax	18	23	29	37	44
Net Income	$21	$27	$34	$43	$51
Earnings Per Share	$1.76	$2.25	$2.85	$3.60	$4.30

FINANCING

In conjunction with the Aztec Oil & Gas purchase, Southland arranged a $200 million loan through Morgan Guaranty Trust. The loan was to be repaid in 24 quarterly installments beginning March 31, 1977, but arrangements are currently being made to refinance the original borrowing. Under the modified proposal, annual debt service would be cut about 50% to $15 million.

Total drilling is budgeted at $35–40 million in 1977, including $17 million estimated to be charged against current income. Property acquisitions might amount to an additional $15–20 million. Actual and estimated cash flow figures for 1975–1977 are furnished below.

		Estimated	
	1975	1976	1977
	($ Millions)		
Net Income	$20.8	$27.0	$34.0
Dividends	5.7	7.0	8.0
Retained Earnings	$15.1	$20.0	$26.0
Non-Cash Charges	11.4	24.0	26.0
Funds Provided by Operations	$26.5	$44.0	$52.0
Expenditures*	$38.2	$45.0	$55.0
Debt Service	5.7	18.0	15.0
Total Requirements	$43.9	$63.0	$70.0
Deficiency	(17.4)	(19.0)	(18.0)

* Excluding about $180 million for purchase of Aztec.

Southland appears to need additional funds in 1977, probably in the form of bank loans at the outset. Arrangements with prospective natural gas buyers are still possible, despite the price penalty that must be incurred on interest-free loans from pipelines under FPC Opinion 770-A. There is also some flexibility in the budget if funds prove difficult to obtain.

RR-77-10

–Research Department–

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OPERATING SUMMARY

($ Millions)

	1971	1972	1973	1974	1975	1976E
Operating Data						
Revenues	$17.9	$17.9	$22.5	$37.8	$68.3	$128.0
Depreciation	3.5	3.3	3.2	3.3	6.4	19.0
Pretax Income	7.2	6.4	9.6	21.1	38.7	50.0
Income Taxes	2.1	1.7	2.6	6.6	17.9	23.0
Net Income	5.1	4.6	7.0	14.4	20.8	27.0
Operating Ratios						
Pretax Margin	40%	36%	43%	56%	57%	39%
Tax Rate	29	27	27	31	46	46
Net Margin	28	26	31	38	30	21
Equity Turnover	0.5X	0.5X	0.5X	0.7X	1.0X	1.5X
Return on Equity	14%	12%	18%	29%	35%	36%
Per Share Data						
Earnings Per Share	$0.44	$0.40	$0.60	$1.22	$1.76	$2.25
Dividends	0.30	0.30	0.30	0.37	0.48	0.62
Price Range	12-9	16-9	23-11	25-13	31-20	43-20
Book Value	$3.09	$3.20	$3.53	$4.43	$5.61	$7.25
P/E Range	27-20	39-22	38-18	20-11	18-11	19-9
Average P/E	23.5	25.5	28.0	15.5	14.5	14.0
P/E Relative to S&P500	137%	148%	215%	174%	137%	139%
Shares Outstanding (mil.)	11.8	11.8	11.8	11.8	11.8	12.0

BALANCE SHEET SUMMARY

($ Millions)

	12/31/71	12/31/75	9/30/76
Current Items			
Assets:			
Cash and Equivalent	$ 9.1	$ 1.4	
Receivables	1.8	14.9	
Total Current Assets	$10.9	$16.3	$25.3
Liabilities:			
Short-Term Debt	$ –	$ 3.1	
Other Current Liabilities	1.9	15.7	
Total Current Liabilities	$ 1.9	$18.8	$45.1
Current Ratio	5.7-1	(neg.)	(neg.)
Net Assets			
Net Working Capital	$ 9.9	$ (2.5)	$(19.8)
Net Plant	25.7	81.2	278.2
Investments	2.4	2.0	1.6
Total	$38.0	$80.7	$260.0
Capitalization			
Long-Term Debt	$ –	$ 7.2	$168.4
Deferred Taxes	1.7	7.0	9.4
Stockholders Equity	36.3	66.5	82.2
Total Capitalization	$38.0	$80.7	$260.0
Long-Term Debt % Capital	0%	9%	65%

White, Weld & Co.
Incorporated

Basic Report

Philip L. Dodge
(212) 285-2043

January 19, 1977

MESA PETROLEUM CO. (MSA)

Price (NYSE)		Dividend		EPS (Dec.)		P/E
Current:	37	Rate:	$0.10	1977E:	$2.35	15.7X
Range (1976-1977):	38-25	Yield:	0.3%	1976E:	$1.75	21.1X
				1975:	$1.25	29.6X

Average Shares Outstanding:	13 million	Return on Average 1975 Equity:	8.2%
Market Value:	$480 million	Book Value Per Share (9/30/76):	$22.54

OPINION

Mesa obtains about 62% of total revenues from natural gas production, and it has an above-average gas reserve life of 19 years. With prospective deliveries from several Gulf of Mexico tracts, natural gas output should rise some 35-40% by 1980. Most of the new gas will sell for $1.44 plus escalation per thousand cubic feet, helping future annual gas revenues by more than $50 million, compared with total company gross income of about $95 million in 1976. Mesa also has 25% of a significant oil discovery in the Moray Firth off the coast of Scotland. Production there should begin by 1980, but an estimate of size would be premature.

Earnings per share should rise to $3.75-4.00 a share in 1979 and a good bit higher in the early 1980s as the Moray Firth contributes. Nevertheless, the stock has moved up sharply from the 1976 low of 25, and less conservative full cost accounting may limit further multiple expansion. Accordingly, we advocate a twelve month or longer investment strategy, believing the stock to be midway in a probable 1977 trading range.

PRODUCTION AND PRICES

Mesa experienced strong growth in oil and gas revenues during the past three years, primarily because of price increases but partly due to increasing oil production. On most recently available reserve data as of July 1, 1975, gas production had a 19-year life and liquids 11 years, both above industry averages.

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	1973	1974	1975	Estimated 1976	Estimated 1977
Average Daily Production					
Natural Gas (MMCF)	271	261	253	270	290
Gas Liquids (bbls.)	3,688	3,450	3,670	4,320	4,300
Crude Oil (bbls.)	4,197	5,716	6,523	6,800	8,000
Average Price					
Natural Gas (MCF)	23¢	27¢	37¢	62¢	80¢
Gas Liquids (bbl.)	$ 3.50	$ 7.18	$ 4.53	$ 5.70	$ 6.50
Crude Oil	3.77	7.92	9.86	10.05	10.50
Revenues (000)					
Natural Gas	$22,873	$25,564	$33,956	$61,000	$85,000
Gas Liquids	4,705	9,048	6,056	8,975	10,000
Crude Oil	5,776	16,515	23,414	24,950	30,700

Natural gas production last year benefited primarily from completion of a 17-well infill drilling program in the San Juan Basin. Further increases in 1977 are coming mainly from the Gulf of Mexico and Canada. In the Gulf, deliveries from 52% owned East Cameron 322/323 began in mid-1976 at a net rate of 5 million cubic feet a day. Later this year, initial gas production is scheduled from 43.3% owned Vermilion 228 at about 15 million net cubic feet a day and from Eugene Island 333/312 at 6-7 million net feet a day. Fairly modest new production is also commencing at the Myette Point field in St. Mary's Parish, Louisiana. Output from the Hugoton field, which accounts for close to half of total company gas output, is expected to decline again in 1977 as a further adjustment to earlier over-production.

Natural gas prices during 1977 will benefit from (1) May 1, 1976 renegotiation with Kansas Power and Light for Hugoton gas under which the average price went to 53¢ from 25¢, (2) FPC Order 770-A, which added about 10¢ to the company's average price as of July 27, 1976, (3) an increase in Alberta to $1.23 on January from an average of about $0.85 in 1976 (Alberta does not vintage gas), and (4) new Gulf of Mexico gas at $1.44 with $0.01 quarterly escalations. (We have assumed $1.44 even in cases where Mesa applied for higher optional pricing.) The weighted average price for the full year should move up to about 80¢ per thousand cubic feet from approximately 60¢ in 1976.

Oil production benefited moderately last year from initial output on East Cameron 322/323, and Vermilion 228 and Eugene Island 333/312 should together contribute about 1,500 barrels a day by this coming summer. Natural gas liquids output will probably remain even in 1977, after having risen last year following completion of new facilities at Garrington in Alberta.

OFFSHORE TEXAS

Mesa has interests ranging from 5% to 50% in 29 Federal tracts offshore Texas on which 9 platforms are installed or planned. Production of natural gas is scheduled to begin in early 1978 following completion of the High Island Offshore pipeline system. At the outset, deliveries will be from 18.4-20% owned High Island 330/349, 25% owned High Island 339/340, and 15% owned High Island 474/489. We expect that combined production net to Mesa from these three fields will be 55-60 million cubic feet a day, contributing annual revenues of at

least $30 million. A platform on 5.7% owned High Island 563 collapsed late last year, and development will be delayed. At least three other tracts—High Island 279 (15%), 313 (30.7%), and 492 (10%)—appear commercial, and will probably be developed. Assuming satisfactory experience on these additional properties, Mesa's net production offshore Texas could reach 75-100 million cubic feet a day by 1979 or 1980.

MORAY FIRTH

In September 1976, Mesa announced an oil discovery on Block 11/30 in the Moray Firth area of the North Sea. A successful confirmation was completed 2-1/4 miles southwest in December. Both wells tested slightly over 6,000 barrels a day of 37° API gravity crude. The wells are about 15 miles from shore in water of 135-150 feet, fortuitous cost circumstances compared with many less accessible North Sea fields. A third well is under way 1-1/4 miles northeast of the discovery. Mesa has a 25% interest in Block 11/30 along with Kerr-McGee (25%), Hunt Oil (15%), P&O Petroleum (15%), Cresslenn Chelsea (15%), and Exploration Holding (5%).

On the basis of results to date, commercial reserves appear to be present on 11/30. Two wells 2-1/4 miles apart suggest an areal extent of at least 1,500 acres. The discovery had 300 feet of oil pay and the confirmation 140 feet. Assuming an average section of 220 feet, reserves in place might typically be 500 million barrels on 1,500 acres. Premising further a 30% recovery factor, recoverable reserves proven thus far would be roughly 150 million barrels. A successful well to the north might raise this possibility by 75% to 260 million barrels. Further delineation could enlarge this figure, perhaps substantially. Each 100 million barrels of reserves would probably support a daily production rate of 30,000 barrels, or 11 million barrels annually.

Considering the handy locations, costs should be relatively low. Total development outlays might be no more than $300 million, including $40-50 million for pipeline and onshore facilities, and $50-60 million for two steel platforms. Some of the platform slots would probably be used for repressuring because the reservoir has a low gas-low oil ratio. Profitability should be in the upper bracket of typical North Sea experience, perhaps $3.00 a barrel on a current landed price of about $13.50. If development proceeds, production is likely by 1979 or 1980. On assumptions discussed above, Mesa should earn $0.60-0.65 a share for each 100 million barrels of recoverable reserves. Ultimate size will depend of course on further delineation, in part moving across a fault to the southeast.

EXPLORATION

Mesa spent $60 million on drilling last year, and a similar outlay is anticipated in 1977. About 40% of this budget is earmarked for exploration. Activity is currently focusing in three areas, but also includes a number of other locations.

1. **Gulf of Mexico.** Drilling continues offshore Louisiana on several tracts where platforms are planned, including South Marsh Island 146 (16% owned), Eugene Island 327 (11.5%), and South Pass 78 (25%). In addition, Mesa recently paid $15 million for 5% interests in East Cameron 336, Vermilion 25 and 310, Eugene Island 310, and West Delta 34. This transaction also included 10% interests in East Cameron 263 and High Island 492 (discussed earlier). Both of these blocks have productive wells.

2. **Texas State Offshore.** In October 1976, Mesa purchased 18 tracts encompassing 22,000 acres in Texas state waters for $9,370,000. About 8,000 acres are near the large Shipwreck natural gas field, currently under development by Houston Oil & Mineral. Mesa plans to drill this prospect in the immediate future.

3. **West Texas.** Mesa is farming in on acreage which has relatively low risk and thus far successful gas prospects.

REVENUE AND EARNINGS PROSPECTS

Mesa should continue to experience good growth over the next three years, as estimated below. Beyond 1979, Moray Firth production should make a sizable contribution, but a precise forecast would be premature.

			Estimated							
	1975		1976		1977		1978		1979	
	(Millions)									
Revenues										
Natural Gas	$ 34		$ 61		$ 85		$ 115		$ 145	
Gas Liquids	6		9		10		11		12	
Crude Oil	23		25		31		35		38	
Other	1		1		1		1		1	
Total	$ 64		$ 96		$ 127		$ 162		$ 196	
Cost and Expenses										
Operating	$ 8		$ 11		$ 14		$ 18		$ 22	
Gen. & Admin.	6		7		8		9		10	
Operating Taxes	1		2		3		3		4	
Depre. & Amort.	16		24		32		40		48	
Interest	4		3		5		7		9	
Total Costs	$ 35		$ 47		$ 62		$ 77		$ 93	
Pretax Earnings	$ 28		$ 49		$ 65		$ 85		$ 103	
Income Tax (Tax Rate)	9	(33%)	21	(42%)	29	(45%)	38	(45%)	46	(45%)
Net Income	$ 19		$ 28		$ 36		$ 47		$ 57	
Preferred Dividend	3		5		5		5		5	
Available for Common	$ 16		$ 23		$ 31		$ 42		$ 52	
Earnings Per Share	$1.25		$1.78		$2.38		$3.23		$4.00	

We have assumed the following:

1. Production increases in 1977 of 7% for natural gas and 18% for oil; in 1978 of 14% for gas, 6% for oil; and 1979 of 9% for gas and zero for oil.

2. Average prices for gas of $0.80 per MCF in 1977, $0.95 in 1978, and $1.10 in 1979; for oil $10.50 a barrel in 1977, $11.50 in 1978, and $12.50 in 1979.

3. An $8 million annual increase in depreciation and amortization upon inclusion of additional offshore tracts in the depletable property base. In addition to using full cost accounting, Mesa follows the rather liberal practice of excluding unevaluated offshore leases from unit-of-production write-offs. However, probable reserves on these leases are also excluded, at least partly mitigating the favorable profit impact. About $205 million of properties were in the unevaluated category at the end of 1975.

4. Interest expense will probably begin to rise this year due to the lesser appeal of interest-free loans from natural gas pipelines under FPC Order 770-A.

5. With all percentage depletion eliminated as of July 1, 1976, the tax accrual rate should rise to about 45% in the future.

FINANCING

Actual 1974–1975 and estimated 1976–1977 cash flow items are shown below.

			Estimated	
	1974	1975	1976	1977
	($ in Millions)			
Funds Provided by Operations				
Retained Earnings	24	15	22	30
Depreciation and Amortization	13	17	24	32
Deferred Taxes	-	9	21	29
Subtotal	37	41	67	91
Funds Expended				
Capital Outlays	119	101	145	110
Deficiency	82	60	78	19

Principal outside financing has been in the form of non-interest bearing notes from pipelines (Mich Wisc, Tenneco, and Transco) to be repaid out of future natural gas production. These obligations presently total about $[illegible]0 million. In addition, Mesa raised $71 million from the sale of convertible preferred stock in 1975.

As part of Order 770-A dealing with post-1972 interstate natural gas prices, the FPC required that prices be reduced from the new national rates to reflect the economic benefit from interest-free advances after November 5, 1976 if the advance is included in the pipeline rate base. As normal loans appear to involve a lower carrying charge than the stipulated price concession (about $0.80 per MCF), Mesa henceforth may accept such advances only if they are not given rate base treatment by the pipeline. As a consequence, the company will probably use some conventional borrowings in 1977. The indicated capital deficiency is considerably less than in the past three years.

About $32 million of the $145 million outlay in 1976 was for purchase of 495,717 shares (7.4% of the outstanding stock) of General American Oil, a medium sized domestic oil

and gas production company. Mesa may ultimately try to acquire General American, but no immediate effort is likely. If General American is acquired by another firm, the price would probably be higher than the $64 a share paid by Mesa.

BALANCE SHEET SUMMARY

(Millions)

	12/31/71	12/31/75	9/30/76
Current Items			
Assets:			
Cash & Equivalent	$ 4	$ 10	
Receivables	7	15	
Inventories	13	11	
Total Current Assets	$24	$ 36	$39
Liabilities:			
Short-Term Debt	$ 3	$ 6	
Other Current Liabilities	15	27	
Total Current Liabilities	$18	$ 33	$35
Current Ratio	1.3X	1.1X	1.1X
Net Assets			
Net Working Capital	$ 6	$ 3	$ 4
Net Plant	70	455	483
Investments	2	3	4
Other Assets–Net	9	3	3
Total	$87	$464	$494
Capitalization			
Long-Term Debt	$34	$145	$149
Deferred Items	3	43	27
Reserves	-	-	25
Stockholders' Equity	50	276	293
Total	$87	$464	$494
LT Debt % of Capital	39%	31%	30%

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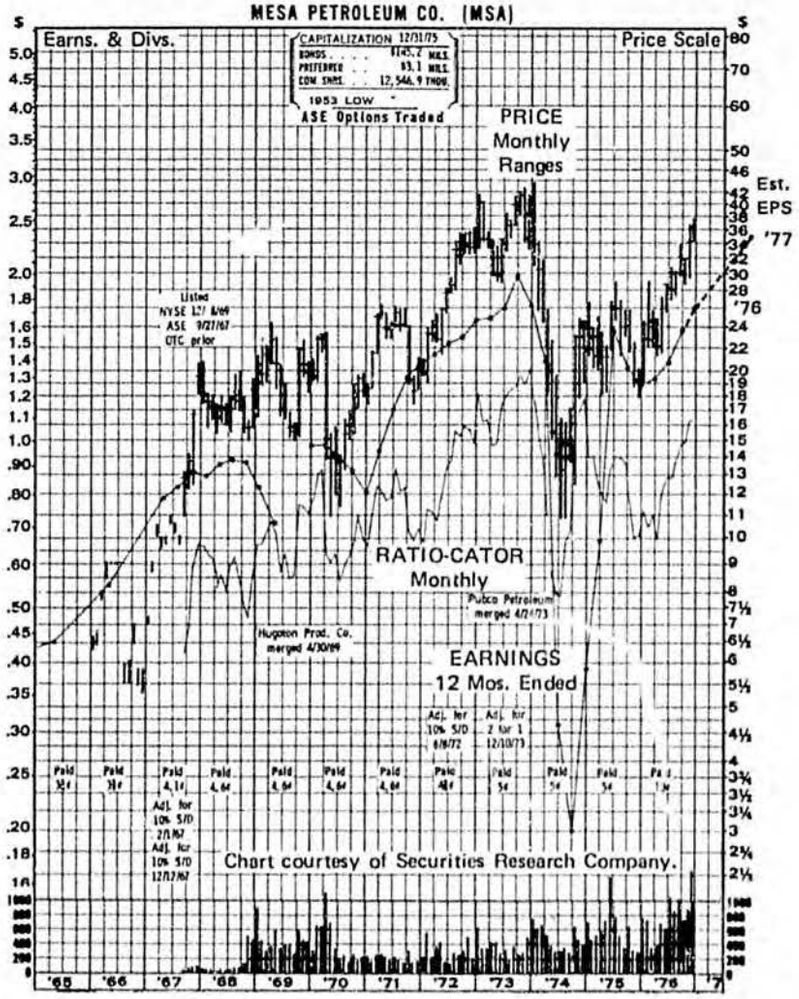
MESA PETROLEUM CO. (MSA)
Earns. & Divs.
Price Scale
CAPITALIZATION 12/31/75
1953 LOW
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ASE 9/27/67
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Pubco Petroleum
merged 4/2/73
Hugoton Prod. Co.
merged 4/30/69
EARNINGS
12 Mos. Ended
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6/8/72
Adj. for
2 for 1
12/10/73
Adj. for
10% S/D
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Chart courtesy of Securities Research Company.
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Thomas C. Pryor
Executive Vice President (212) 285-2666

Harold W. Janeway
Director of Investment Policy (212) 285-2060

Jerome P. Kenney
Director of Research (212) 285-2020

Richard A. Kimball
Director of Marketing (212) 285-2374

Frank J. Ritger
Senior Vice President (212) 285-2120

A. Gary Shilling
Chief Economist (212) 285-2670

Basic Industries		
George H. Cleaver	Metals & Mining	(212) 285-2012
Frederic S. Coffman, Jr.	Forest Products, Paper	(212) 285-2748
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Energy		
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Financial Services		
A. James Donohue	Banks, S&L's, REIT's, Mortgage Insurers, Misc. Real Estate	(212) 285-2010
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Market Analysis		
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Peter J. Canelo	Computer Support–Performance Monitor	(212) 285-2256
John A. Mendelson	Technical Analyst	(212) 285-3753
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Craig W. Fanning	Electrical Equipment	(212) 285-2030
Anthony G. Langham	Instrumentation, Semiconductors	(212) 285-2047
Jack K. Smith	Computers	(302) 656-7741
Utilities		
Marjorie M. Jones	Electric, Telephone	(212) 285-2040
Edward A. Pescatello	Electric, Telephone	(212) 285-2066

Support Services		
Emily K. Baldt	Research Assistant	(302) 656-7741
Jeanne M. Gallagher	Editor	(212) 285-2075
Robert Margolis	Art Director	(212) 285-2319
Ellen L. Miller	Librarian	(212) 285-2085
Mary M. Riesar	Assistant to Director of Research	(212) 285-2020
Ann T. Stott	Institutional Marketing	(212) 285-2064

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White, Weld & Co.
Incorporated

Basic Report

Philip L. Dodge
(212) 285-2043

February 10, 1977

STANDARD OIL OF INDIANA (SN)

Price (NYSE)		Dividend		EPS (December)		P/E
Current:	55	Rate:	$2.60	1977E:	$7.15	7.7X
Range (1976-77):	60-41	Yield:	4.7%	1976:	$6.09	9.0X
				1975:	$5.36	10.3X

Average Shares Outstanding:	147 million	Return on Average 1976 Equity:	15.4%
Market Value:	$8,085 million	Book Value Per Share (12/31/76):	$41.91

OPINION

We believe that Standard Oil of Indiana has above average appeal in a generally attractive domestic oil group.

1. Through unusually active onshore exploration and development, the company should be able to at least maintain U.S. production (about two-thirds of earnings) over the next several years, compared with a generally declining industry trend.
2. As a result, annual production revenues will benefit fully from future U.S. crude oil and natural gas price increases, a probable contribution of some $300 million ex cost increases, or about $0.95 a share after taxes.
3. Rising production in Egypt, Iran, and the North Sea (overseas production about 13% of earnings) should add profits of $1.00 a share by 1980.
4. Expansion of chemical operations (8% of 1976 earnings) has been strategically executed, and this segment should earn about $1.00 a share by 1980 under normal economic conditions, compared with $0.51 a share in 1976.
5. In an equally important but less tangible vein, Standard Oil of Indiana is extremely well managed, as attested to by average annual earnings per share growth of 13% over the past ten years.
6. We estimate that earnings per share will rise to about $9.60 by 1980, or 12% annually, and dividend increases should at least match this pace, considering that the payout is currently at the lower end of the 35-45% stated policy.
7. We believe the price-earnings ratio will be in a probable future 7-11 range.

Considering these positive aspects, purchase of Standard Oil of Indiana should provide an annual Investment return of 15-20% over the next several years.

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1976 EARNINGS

Earnings per share of $6.09 in 1976 were about 2½ times the $2.41 level of 1971 but under the record $6.55 set in 1974. Quarterly 1975–1976 comparisons by major lines of business are tabulated below (EPS in $).

	Petroleum					
	U.S.	Canada	Overseas	Chemicals	Other	Net Income
1975						
1Q	$0.83	$0.07	$0.16	$(0.09)	$0.00	$0.97
2Q	0.99	0.08	0.37	0.18	(0.01)	1.61
3Q	1.06	0.16	0.29	0.06	0.00	1.57
4Q	0.85	0.18	0.13	0.11	(0.06)	1.21
Year	$3.73	$0.49	$0.95	$ 0.26	$(0.07)	$5.36
1976						
1Q	$1.21	$0.14	$0.33	$0.15	$(0.38)	$1.45
2Q	1.20	0.21	0.13	0.27	(0.05)	1.76
3Q	1.38	0.14	0.16	0.09	(0.04)	1.73
4Q	0.98	0.07	0.14	0.00	(0.04)	1.15
Year	$4.77	$0.56	$0.76	$0.51	$(0.51)	$6.09
% of Total						
1975	69%	9%	18%	5%	(1%)	100%
1976	78	9	13	8	(8)	100

The company benefitted particularly in 1976 from (1) an increase in the average U.S. natural gas wellhead price to 65¢ per MCF from 48¢ per MCF, (2) higher U.S. refined product prices, particularly in the summer, and (3) a sharp increase in chemical volumes. Overseas petroleum earnings per share declined to $0.76 from $0.95. The comparison was actually more negative than reported because the first quarter of 1976 included a reversal of unnecessary expenses for fourth quarter drilling in Egypt.

Results were hurt last year by a $0.39 a share first quarter nonrecurring expense for estimated costs of termination of a copper project in Zaire. In addition, revisions of North American oil and gas reserve estimates required a charge of $0.18 a share in the fourth quarter, of which $0.11 was additional amortization and $0.07 was a writedown in value. The fourth quarter was also penalized by a number of negative operating factors. U.S. downstream results suffered from a buildup in inventories in anticipation of the OPEC price increase and a $30 million jump in the quarterly rate of entitlements purchases. Chemical margins narrowed because demand was insufficient to maintain cost pass-throughs, and results were also hurt by startup costs of four new plants. Foreign currency translations penalized the fourth quarter 1976 earnings per share comparison by $0.12 and the full year by $0.20.

NORTH AMERICAN PRODUCTION

Standard of Indiana's U.S. production record over the past five years is shown below. On the basis of exploration and development discussed below, we believe the company can hold U.S. crude oil and natural gas output essentially even through 1980.

	1972	1973	1974	1975	1976	1977E
Crude Oil						
Thousand Barrels Daily	420	459	471	459	449	445
Million Barrels Annually	154	167	172	168	164	162
Average Price Per Barrel	$3.46	$4.12	$7.04	$7.95	$8.23	$8.75
Natural Gas						
Million Feet Daily	3,118	3,124	2,893	2,631	2,556	2,600
Billion Feet Annually	1,141	1,140	1,056	960	935	949
Average Price Per Thousand Feet *	20¢	24¢	35¢	48¢	65¢	80¢

*Includes Canada which accounts for about 10% of total North American natural gas sales.

U.S. Crude Oil

About 60% of the company's U.S. crude oil production is from the state of Texas where many reservoirs respond effectively to waterflooding and other forms of secondary recovery. Over 400 waterflood projects are operated with combined output of some 200,000 barrels a day, or roughly double the level of ten years ago. Mainly as a result of incremental output from waterflooding, Standard of Indiana has a ratio of 45% upper tier crude oil, unusually high for a major company. However, crude oil from stripper wells (ten barrels a day or less) not subject to price controls is only 2% of total, reflecting earlier sales of then uneconomic properties. Except for 1974 when $578 million was spent on lease acquisitions, the company has not participated as heavily as most in Federal offshore lease sales.

Instead, efforts have been particularly aggressive onshore. Total undeveloped U.S. land holdings are about 25 million net acres, compared with 12.6 million net acres at the end of 1970. Oil exploration has been most successful at Pineview and Ryckman Creek in the Thrust Belt of Utah–Wyoming, the Silurian Reef trend of northern Michigan, South Marsh Island Block 128 offshore Louisiana, and deeper in the established Abo Reef trend of West Texas. In addition, some 16,000 barrels a day of crude output were added in south central Wyoming through the December 1975 purchase of Pasco, Inc. for a $135 million production payment plus $89 million in cash. The production loan is paid down out of 85% of production and should be retired by the early 1980s.

U.S. Natural Gas

After declining about 18% since 1973, the company's domestic natural gas production should commence a gradual recovery this year reflecting development in several areas including Wamsutter and Moxa Arch in Wyoming, the Ozona-Sonora area of southwest Texas, and Wattenberg in eastern Colorado. The Wyoming program includes up to 89 wells being drilled by Cities Service in return for a call on most of the gas. Production offshore Texas, where interests are held in 11 platforms, will begin in 1978 following completion of the High Island Offshore

pipeline system. Deliveries net to Standard of Indiana should exceed 100 million cubic feet a day by 1979 or 1980, and oil production of 8,000-10,000 barrels a day will begin following completion of a pipeline.

Drilling will continue to be particularly active this year on 3,690,000 acres in Wyoming and Utah under a land grant option from Union Pacific Railroad which expires on November 1. Ryckman Creek, where Standard of Indiana has a 37½% interest, had a 120 foot oil column and and a 300 foot gas cap in the discovery well. It is being developed at several locations, and several exploration wells are planned or under way in this attractive area.

Rising Prices

Like other oil companies, Standard Oil of Indiana is benefitting significantly from rising U.S. crude oil and natural gas prices. The company's average domestic crude realization should rise about $0.50 a barrel in 1977 and close to $1.00 a barrel in each of several following years. Using $1.00 as a yardstick, annual revenues would rise by about $160 million after royalties. Additional severance taxes would be about $10 million, and annual production costs might rise by $40 million ($0.25 a barrel). After income tax, net profit would benefit by $57 million, or $0.40 a share. The company also sells about 30 million barrels of natural gas liquids annually in the United States. Under present Federal Energy Administration controls, significant near-term price improvement is unlikely.

Somewhat more than 40% of the company's natural gas 1976 sales are to uncontrolled intrastate markets, a sharp increase over 1975, as shown by the following statistics.

	Million Feet a Day					
	1971	1972	1973	1974	1975	1976E
Intrastate	1,048	1,145	1,272	1,045	869	1,100
Interstate						
Onshore	1,633	1,565	1,387	1,376	1,309	1,060
Offshore	377	444	432	443	423	400
Total	3,058	3,154	3,091	2,864	2,601	2,560

About 400 million feet a day, or 15% of total gas production, is in the post-1972 vintage category which benefits from price increases to $0.93-1.42 plus escalation price increases under FPC Order 770-A. Reflecting both 770-A and the higher proportion of uncontrolled intrastate sales, the company's average U.S. natural gas price rose to 65¢ per MCF in 1976 from 48¢ a year earlier, and a further 15-20¢ improvement is likely in 1977. On this basis, revenues will benefit by $140-190 million, and net income should rise by $55-75 million, or $0.35-0.50 a share. With prospects for a price of at least $1.44 per MCF on all new gas and considerably higher if the Carter Administration implements decontrol, we believe Standard of Indiana's U.S. natural gas revenues and profits will rise a similar rate for several years in the future.

Reserves

Standard of Indiana has recently reduced North American petroleum reserve estimates. This revision resulted in a charge against fourth quarter 1976 earnings of $0.18 a share. U.S. changes are shown below.

ESTIMATED U.S. RESERVES (12/31/75)

		Revisions		
	Original	SEC Guidelines	Other	Revised
Liquids (mil. bbl.)	2,242	32	11	2,199
% Decrease	–	1.4%	0.5%	1.9%
Natural Gas (bil. CF)	10,680	429	692	9,559
% Decrease	–	4.0%	6.4%	10.4%

Although reserve revisions are a frequent occurrence, the 1976 study was a particularly intensive one because of new SEC reporting requirements. Natural gas reserves were particularly affected by unexpectedly rapid pressure declines at the Old Ocean and Gomez fields in Texas, and Blanco Mesa Verde in New Mexico. U.S. reserve lives are about 10 years for natural gas and 11 for oil, comparable to the industry as a whole.

Canada

About 10% of total net income is obtained from oil and gas output in Canada. Net production has fallen since 1973, partly reflecting higher provincial royalties. However, profits have roughly tripled during that period as a result of higher prices. We estimate that the company's Canadian earnings per share will rise $0.05-0.10 annually over the next several years as prices move up further.

OVERSEAS PRODUCTION

Standard Oil of Indiana re-entered overseas oil operations in 1958 in what since has come to be considered as a watershed joint venture with the Iranian government. This departure from the venerable concession system was followed by a similar agreement with Egypt in the Gulf of Suez. Exploration under both ventures has yielded significant reserves and rising production. Statistics on overseas oil production are shown below, including estimates for the next several years.

NET OVERSEAS LIQUIDS OUTPUT
(000 Barrels a Day)

				Estimated			
	1973	1974	1975	1976	1977	1979	1981
Trinidad	49	71	109	95	100	100	55
Iran	64	56	88	100	130	160	155
Egypt	50	42	67	80	105	150	115
Argentina	54	55	49	45	45	45	40
Venezuela	34	29	28	–	–	–	–
United Kingdom	–	–	–	–	5	15	15
Other	7	6	8	3	2	20	50
Total	258	269	349	323	387	490	430

Note: Venezuela was nationalized on December 31, 1975. Growth in "other" primarily reflects Norway. Egypt includes cost recovery barrels.

Trinidad

Production from three fields has reached an aggregate level of about 100,000 barrels a day. Samaan, the largest of the three, has API gravity of 36.8 degrees. Reservoirs characteristically have rather rapid declines from peak flows. With further development, however, production should hold at the present rate for three more years, following which considerable slippage is likely unless there are further discoveries. In 1976, producing operations in Trinidad involved a royalty of $2.18 a barrel, producing costs of an estimated $2.00, and income taxes of an estimated $7.62, or a total tax paid cost of $11.80 a barrel. Allowing for an average export price of $12.60 last year, the company made $0.80 a barrel last year on production in Trinidad, equal to net income of $30 million, or $0.20 a share. We expect this contribution to be essentially maintained through 1979 although the government might tighten fiscal terms to something more in line with OPEC.

Iran

The company's Iranian production should rise to about 160,000 barrels a day from 100,000 BD over the next three years as the two newer fields–Ardeshir and Fereidoon–develop to peak flow rates. However, Iranian fiscal terms are harsh, limiting profitability to $0.20-0.25 a barrel. On this basis, earnings per share from Iran would move up to only $0.08 a share in 1979 from $0.05 in 1976.

Egypt

Operations in Egypt are under a production sharing agreement with the government whereby the company receives up to 20% of the oil for recovery of costs and an additional 17% of the remaining 80% as profits. The 17% share will drop to 15% in 1978. As indicated below, equity production should more than double in the next three years, benefiting from waterflooding of the Morgan and July fields and further development of Ramadan. Two discoveries made during 1976 should add to this potential. A profile of these properties is shown below.

			Estimated Production (BD)			
			----Gross----		Indiana's Equity Share	
Field	API Gravity	Sulphur Content	1976	1979	1976	1979
Morgan	31°	1.7%	100,000	160,000	14,000	19,000
July	32	1.1	50,000	80,000	7,000	10,000
Ramadan	34	1.1	85,000	250,000	12,000	30,000
Block 382	34	1.1	–	120,000	–	14,000
Block 300	26	2.8	–	20,000	–	2,000
Total			235,000	630,000	33,000	75,000

Assuming an average wellhead price of $11.25 a barrel, the company's revenues on equity production in 1976 were $135 million (33,000 BD X 365 days X $11.25 a barrel). Hypothesizing costs above and beyond cost recovery at $50-75 million, net earnings would have been $60-85 million, or $0.40-0.55 a share. At a probable price in the vicinity of $13.00 a barrel by 1979, revenues from equity production would be about $355 million, or $2.65 a share.

However, we believe that continuing costs above cost recovery or harsher terms will reduce this contribution to $1.00-1.50.

Argentina

Argentine production ranges between 45,000 and 50,000 barrels a day under a long-term contract with the government. This agreement appears to allow a unit profit of about $1.00 a barrel (basic fee plus adjustments), equivalent to income of $17 million ($0.12 a share).

North Sea

Standard of Indiana has relatively small interests in North Sea oil reserves compared with most major oil companies. Production from the Montrose field (30.77% owned) began during 1976, with peak output estimated to reach 50,000 barrels a day, or about 15,000 BD net to the company. Two discoveries, Hutton and Northwest Hutton, have been made in the "golden" quadrant 211 area east of the Shetland Islands, but they as yet remain uncommercial in size. On the Norwegian side, initial production is anticipated from the 7.2% interest Tor unit this year, and Tor should reach a gross rate of 75,000 BD (5,000 BD net to Indiana) in 1978. Delineation of the nearby Valhall field (28 1/3% owned) is continuing, and gross potential appears to be 100,000-150,000 BD. The company has a tiny 1.04% interest in the giant Stratfjord field, which should contribute net production of about 3,000 BD in 1979 and 8,000-9,000 BD by the mid-1980s.

DOWNSTREAM

United States

The company has operable U.S. refinery capacity of 1,150,000 barrels a day including large plants at Whiting, Indiana (360,000 BD) and Texas City, Texas (333,000 BD). Utilization is over 90% and should remain so in the near future because no grass roots expansion is contemplated. With annual U.S. oil product sales of about 17 billion gallons, Standard of Indiana has material price leverage. Each 1¢ a gallon price change over the course of a year is equivalent to net income of about $90 million, or $0.60 a share. Industry operating rates should remain at about 90% over at least the next three years, reflecting only moderate capacity additions, and gasoline price structures should accordingly allow generally consistent cost pass-through or even some margin improvement. In this regard, the Federal Energy Administration entitlements program has had the inadvertent effect of encouraging crude oil rather than refined product imports, tempering downward price pressures which often result from excess refining capacity. Domestic downstream profits improved in 1976, probably representing some 10% of company total.

Overseas

Principal overseas refineries are located at Milford Haven, Wales (102,000 BD) and Cremona, Italy (80,000 BD). As elsewhere in Europe, these plants have operated at uneconomical rates over the past three years because of depressed demand, but the impact on overall results has been modest.

CHEMICALS

Standard of Indiana is one of several major oil companies which has placed considerable emphasis on chemical expansion over the past few years. Revenue and profit trends are shown below.

	1973	1974	1975	1976E
Revenues (millions)				
Fibers and films	$197	$272	$293	$375
Industrial	68	130	195	270
Fertilizers	89	133	187	175
Synthetic fabrics	153	165	166	185
Polymers	96	143	110	150
Petroleum additives	35	65	78	100
Fabricated plastic products	71	101	75	80
Other	62	80	86	101
Total	$771	$1,089	$1,190	$1,436
Net Income	$ 48	$ 95	$ 37	$ 74
% of Total Net Income	9%	10%	5%	8%
Average Net Investment	$506	$584	$776	$1,000
Return on Average Net Investment	9.5%	16.3%	4.8%	7.4%

Results have been highly sensitive to broad trends in business activity and also to mini-cycles within the economic expansion of the last year and a half. Quarterly profits moved in a volatile pattern during 1975 and 1976. The second quarter is seasonally higher because of fertilizer.

	1Q	2Q	3Q	4Q
	millions			
1975	$(13)	$27	$ 9	$16
1976	22	39	13	0

About one-fourth of Standard of Indiana's chemical revenues come from the sale of purified terephthalic acid (PTA), and, to a lesser extent, dimethyl terephthalate (DMT), both raw materials in the production of polyester films and fibers. The company has concentrated on PTA because it has a 12-15% cost advantage over DMT. Second in importance as a category is the manufacture of ethlyene, styrene, and other basic "industrial" chemicals. Fertilizers have diminished in significance as a result of price weakness since mid-1975. Roughly one-sixth of total chemical revenues are from overseas.

Five chemical plants were completed in 1976, and eight more are scheduled between now and the end of 1979. Among the largest to be completed over the next three years are a second billion pound per year olefins (ethylene, etc.) facility at Chocolate Bayou, Texas in 1977 and a billion pound per year PTA unit at Charleston, South Carolina. Chemical results should benefit during 1977 from full year operations of a 200 million pound per year high density polyethylene plant at Chocolate Bayou, a 500 million pound per year polypropylene facility at Geel, Belgium, all of which had a negative impact in 1976 due to start-up costs. Current year revenue

contributions from these three new expansions (and two smaller ones) should total $250–300 million at present price levels, and additional profits should be in the range of $15–20 million. And, ongoing chemical operations should add $5–10 million, or a total increase in net income of $20–30 million ($0.15–0.20 a share) from chemicals in 1977. Facilities starting up during the next three years should add about $500 million in annual revenues, or equivalent cost reductions, at current price levels. Assuming a 6% after-tax margin, the profit increment would be $30 million by 1980. Allowing for moderate further growth from existing chemical activities, we estimate that total chemical profits will rise to about $150 million ($1.02 a share) by 1980 from $74 million ($0.51) last year.

1977–1980 EARNINGS PROSPECTS

Our profit expectations through 1980 by major line of business are as follows:

		Estimated			
	1976	1977	1978	1979	1980
	($ millions)				
Petroleum					
U.S.	700	760	840	920	980
Canada	82	92	100	110	120
Overseas	111	120	145	170	195
Total	893	972	1,085	1,200	1,295
Chemicals	74	100	115	130	150
Other	(74)	(20)	(25)	(30)	(30)
Net Income	893	1,052	1,175	1,300	1,415
Earnings Per Share	$6.09	$7.15	$8.00	$8.85	$9.60

As discussed earlier, earnings per share should benefit particularly over the next several years from rising crude oil and natural gas prices in North America, moderate improvement in U.S. refining margins, new crude production in Egypt, and chemical expansion. In addition, current year results will be helped by absence of the $0.39 a share 1976 writeoff in Zaire. During an economic downturn in any individual year, chemical results would slip, thereby affecting the reasonably even progression developed above. Moreover, we have not attempted the precarious effort of estimating annual swings in foreign currency translations.

FINANCES

Capital expenditures roughly doubled between 1972 and 1974, and outlays have remained in the $1½ billion area during each of the past three years.

	1972	1973	1974	1975	1976	1977E
	($ millions)					
Net Income	$372	$511	$958	$789	$893	$1,052
Dividends	167	180	234	294	337	382
Retained Earnings	$205	$331	$724	$495	$556	$ 670
Non-Cash Charges	422	462	580	695	725	800
Funds Provided From Operations	$627	$793	$1,304	$1,190	$1,281	$1,470
Capital Expenditures	749	901	1,511	1,525	1,340	1,700
(Deficiency)	(112)	(108)	(207)	(335)	(59)	(230)

The deficiency has been financed primarily by long-term debt under a financial strategy that has held the debt ratio to less than 25%. The common dividend was recently raised to a quarterly rate of $0.65 from $0.575. Stated policy is to pay out 35-45% of earnings, suggesting that the dividend could be increased again during the next twelve months and further in the years ahead.

RR-77-24 — Research Department—

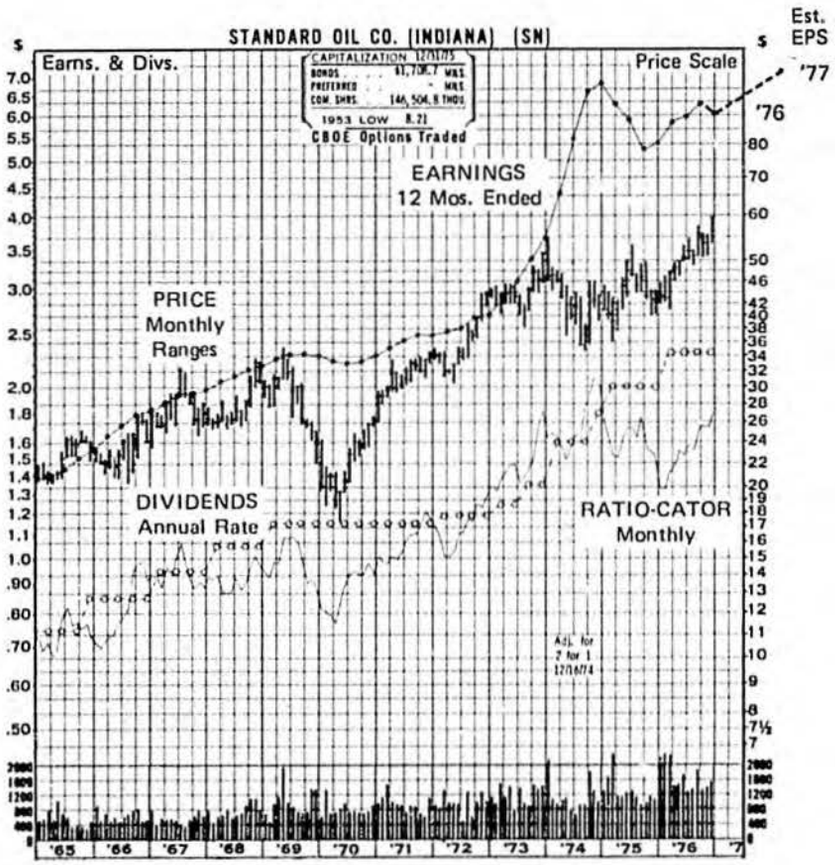

Chart courtesy of Securities Research Company.

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FINANCIAL SUMMARY

($ millions)

	1971	1972	1973	1974	1975	1976
Operating Data						
Revenues	$4,965	$5,477	$6,468	$10,156	$11,147	$12,672
Depreciation, etc.	344	384	448	562	610	640E
Pretax Income	448	496	781	1,694	1,966	2,243E
Income Taxes	107	124	270	736	1,179	1,350E
Net Income	$ 341	$ 372	$ 511	$ 958	$ 787	$ 893
Operating Ratios						
Pretax Margin	9.0%	9.1%	12.1%	16.7%	17.6%	17.7%
Tax Rate	23.9	25.0	34.6	43.4	60.0	60.2
Net Margin	6.9	6.8	7.9	9.4	7.1	7.0
Equity Turnover	1.4X	1.5X	1.6X	2.2X	2.1X	2.2X
Return on Equity	9.9%	10.1%	12.9%	20.7%	14.7%	15.4%
Per Share Data						
Earnings Per Share	$2.41	$2.59	$3.54	$6.55	$5.36	$6.09
Dividends	1.15	1.20	1.29	1.65	2.00	2.30
Price Range	35-26	44-31	52-38	55-35	53-36	60-41
Book Value	$25.70	$27.20	$29.54	$34.78	$38.12	$41.91
P/E Range	14-11	17-11	14-10	8-5	10-7	10-7
Average P/E	12.5	14.0	12.0	6.5	8.5	8.5
P/E Relative to S&P 500	73%	81%	92%	73%	80%	85%
Shares Outstanding	138	140	140	147	147	147

BALANCE SHEET SUMMARY

($ millions)

	1971	1975	9/30/76	Percent Change 1970 to Latest
Current Items				
Assets:				
Cash and Equivalents	$ 288	$ 772	$ 919	184%
Receivables	712	1,506	–	–
Inventories	466	923	–	–
Total Current Assets	$1,466	$3,201	$3,616	147%
Liabilities:				
Short-Term Debt	$ 49	$ 112	–	–
Other Current Liabilities	719	2,057	–	–
Total Current Liabilities	$768	$2,169	$2,475	222%
Current Ratio	1.9X	1.5X	1.5X	–
Net Assets				
Net Working Capital	$ 698	$1,032	$1,141	63%
Net Plant	3,964	6,413	6,808	71
Investments	211	240	317	50
Total	$4,873	$7,685	$8,266	70%
Capitalization				
Long-Term Debt	$1,027	$1,709	$1,741	70%
Deferred Items	281	391	458	63%
Minority Interests	15	–	–	–
Stockholders' Equity	3,550	5,585	6,067	71%
Total Capitalization	$4,873	$7,685	$8,266	70%
Long-Term Debt % Capital	21%	22%	21%	–

White, Weld & Co.
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Thomas C. Pryor
Executive Vice President (212) 285-2666

Harold W. Janeway
Director of Investment Policy (212) 285-2060

Jerome P. Kenney
Director of Research (212) 285-2020

Richard A. Kimball
Director of Marketing (212) 285-2374

Frank J. Ritger
Senior Vice President (212) 285-2120

A. Gary Shilling
Chief Economist (212) 285-2670

Basic Industries		
George H. Cleaver	Metals & Mining	(212) 285-2012
Frederic S. Coffman, Jr.	Forest Products, Paper	(212) 285-2748
Betty M. Fagan	Pollution, Publishing, Capital Goods	(212) 285-2054
F. Robert Mayforth	Chemicals, Environmental Controls	(302) 656-7741
William N. Walling, Jr.	Coal	(212) 285-2438
Consumer Products & Services		
William R. Gill, Jr.	Retail Trade	(212) 285-2070
John A. Jensen, Jr.	Consumer Products, Household Products	(212) 285-2074
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Milton Schlackman	Consumer Electronics, Air Conditioning, Appliances	(212) 285-2024
Daniel E. Somers	Beverages, Fast Food, Lodging	(212) 285-2076
Energy		
A. Hager Bryant, 3rd	Gas Pipelines and Distribution	(212) 285-2696
Philip L. Dodge	Oil, Gas	(212) 285-2043
John H. Hayward, Jr.	Oil Services & Related	(212) 285-2032
John L. Kalmbach	Natural Gas, Resources, Diversified	(212) 285-2065
Richard L. Davisson, Jr.	Oil Consultant	(617) 482-7767
Financial Services		
A. James Donohue	Banks, S&L's, REIT's, Mortgage Insurers, Misc. Real Estate	(212) 285-2010
Gerald E. Lewinsohn	Insurance	(212) 285-2000
Health Care		
Michael M. Harshbarger	Drugs	(212) 285-2698
L. John Wilkerson	Hospital Products	(212) 285-2695
Market Analysis		
H. Carroll Mackin	Computer Support–Performance Monitor	(212) 285-2056
Peter J. Canelo	Computer Support–Performance Monitor	(212) 285-2256
John A. Mendelson	Technical Analyst	(212) 285-3753
Technology		
Stover L. Babcock, Jr.	Special Situations	(212) 285-2026
James C. Blair	Computers, Office Equipment	(212) 285-2045
Craig W. Fanning	Electrical Equipment	(212) 285-2030
Anthony G. Langham	Instrumentation, Semiconductors	(212) 285-2047
Jack K. Smith	Computers	(302) 656-7741
Utilities		
Marjorie M. Jones	Electric, Telephone	(212) 285-2040
Edward A. Pescatello	Electric, Telephone	(212) 285-2066

Support Services		
Emily K. Baldt	Research Assistant	(302) 656-7741
Jeanne M. Gallagher	Editor	(212) 285-2075
Robert Margolis	Art Director	(212) 285-2319
Ellen L. Miller	Librarian	(212) 285-2085
Mary M. Rieser	Assistant to Director of Research	(212) 285-2020
Ann T. Stott	Institutional Marketing	(212) 285-2064

ONE LIBERTY PLAZA, NEW YORK, N.Y. 10006

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White, Weld & Co.
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Summary Report

Philip L. Dodge
(212) 285-2043

February 28, 1977

CITIES SERVICE COMPANY (CS)

Price (NYSE)		Dividend		EPS (December)		P/E
Current:	59	Rate:	$3.00	1977E:	$8.75	6.7X
Range (1976-1977):	61-39	Yield:	5.1%	1976:	$7.98	7.4X
				1975:	$5.12	11.5X
Average Shares Outstanding:		27.3 million		Return on Average Equity:		12.7%
Market Value:		$1,611 million		Book Value Per Share (12/31/76):		$65.63

SUMMARY

Cities Service should experience moderate profit improvement over the next several years as a result of rising U.S. natural gas and crude oil prices, and a possible turnaround in chemical-metal operations at Copperhill, Tennessee. The company would also benefit differentially if government price controls were removed from all natural gas liquids, although timing of such a step is unclear. On the other hand, Cities is among the majority of U.S. crude oil producers facing a decline in production, and efforts to reverse this trend thus far appear futile. While the entire domestic oil group continues to appear attractive, we prefer companies with visible sources of rising energy production.

PRODUCTION OUTLOOK

Both crude oil and natural gas production declined 4-5% in 1976, but natural gas liquids output stabilized at 90,000 barrels a day, reflecting expansion of the Odessa (Texas) and Paddle River (Alberta) plants, a new facility in Campbell County, Wyoming, and deeper cuts at several other facilities. Crude production will probably drop a further 5% in 1977, natural gas is likely to fall by a lesser 1-2%, and NGL should again remain about even. The natural gas decline is being tempered by broad efforts in older domestic onshore basins and by new offshore Louisiana production.

Most important exploration success has been experienced during recent years on Federal tracts in the Gulf of Mexico. Cities' daily production from the Gulf currently averages about 23,000 barrels of oil (about 22% of U.S. total) and 300 million cubic feet of gas (30%). Since November 1971, the company has spent over $225 million on Gulf lease bonuses, and it subsequently has established commercial reserves on 25-30 tracts, only 2 of which (East Cameron 33 and South Marsh Island 261) are already producing. Offshore Texas production has been delayed by earlier Federal Power Commission trans-

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portation deliberations, but the High Island Offshore pipeline system is now under construction. Assuming completion of HIOS early next year, Cities' offshore Texas gas production should make a significant contribution in 1978. Initial connections will be to Blocks 110-111 (20% owned), A 322-323 (19%), and A 520 (25%). The A 327-332 field (10% owned) will be tied in shortly thereafter. All in all, the Gulf of Mexico should add net new gas production of 150-200 million cubic feet a day by 1979, more than offsetting decreases in older fields. The increase in total gas production will probably be on the order of 3-5% in both 1978 and 1979. Gulf of Mexico natural gas reservoirs are typically meager in associated liquids, and additional NGL output may be no more than 3,000-4,000 barrels a day. Nevertheless, these and other expansions should be adequate to offset other declines, and aggregate company natural gas liquids output should hold about even over the next few years. Barring some unpredictable and perhaps unlikely significant discovery, the downward trend in crude oil output will continue.

Cities' natural gas production probably contributes 25% of total profits, and the company has unusually high leverage on rising natural gas prices. FPC Order 770-A, which raised post-1972 gas prices substantially, initially adds about $13 million to company net income on an annual basis. Partly because of 770-A, Cities' average wellhead gas price rose to 43¢ per thousand cubic feet in 1976 from 33¢ in the previous year. A comparable increase appears likely in 1977, or the equivalent of about $35 million in pretax earnings ($0.70 a share net after taxes). By 1980, when new Federal offshore tracts are in production, the company's average price should reach 80¢ per MCF, or higher if new gas is decontrolled.

Cities' U.S. crude oil price averaged $7.55 a barrel in 1976. About 61% of production is lower tier (industry norm 52%), 25% upper tier (35%), and 14% stripper (13%). Although domestic crude oil prices are technically *frozen* by the Federal Energy Administration, stripper crude postings, which are not regulated, rose at the first of the year along with OPEC increases, and higher priced upper tier is also rising as a percent of total. Moreover, monthly allowable increases in both upper tier and lower tier prices will probably resume by the middle of 1977. On this basis, Cities should realize an average U.S. crude oil price of about $8.25 a barrel this year, up $0.70 from 1976. Allowing for a 5% drop in volume, domestic crude oil production revenues after royalties should rise to about $303 million from $290 million, and earnings per share by $0.20 after severance taxes, moderate cost increases and income taxes. This favorable comparison should be typical of general experience in each of the next several years.

Overseas exploration efforts have met with only modest success over the years, currently involving production in Argentina, Indonesia, and Sharjah, but on the whole unprofitable because of exploration costs. First half 1976 results were penalized by write-downs of $12 million ($0.45 a share) in Indonesia and Peru.

In Canada, Cities Service is making a substantial investment to develop synthetic oil production in the Athabasca tar sands. Cities' 22% share of the Syncrude project is presently estimated at $475 million, of which the Alberta government is loaning $100 million. Alberta has the option of converting this loan into a 5% equity interest. Moreover, Alberta Energy Company may purchase a 20% interest in the entire Syncrude project. Depending on whether and when these options are exercised, Cities' interest could decline to 12.6-13.6%.

Construction is essentially on schedule, and synthetic crude oil extraction and processing is likely to begin in 1978. Initial design capacity of the plant is 109,000 barrels a day, and Cities' 22% share of daily output is expected to average 5,000 barrels in 1978, 16,000 in 1979, and 24,000 barrels in 1980. With debottlenecking, capacity can later be raised about 15-20% at a relatively nominal expense. Operating costs are estimated at $10.25 a barrel in constant dollars over the 25-year estimated life of the project, but the figure will probably be higher in early years of below-design utilization. Syncrude will not be subject to Canadian price controls, and it would currently fetch about $12.00-13.00 a barrel at the plant. Barring an unlikely reversal in trend, oil prices should move up 5-10% annually over the next several years. On this basis, Syncrude would realize close to $15.00-16.00 a barrel in 1980, a figure which should be moderately profitable. The Province of Alberta is to receive 50% of profits, this amount deductible for Federal Canadian tax purposes. Assuming a 1980 price of $16.00 and costs of $11.00, Cities would net about $1.25 a barrel or $11 million net ($0.40 a share). Better results are contingent on higher prices and scaling up to greater output, both certainly future possibilities.

NATURAL GAS TRANSMISSION

Cities operates a primarily interstate transmission system in the central U.S. This activity accounts for about 20% of company profits. Although volume has declined over the past several years due to supply limitations, the spread between price and cost has risen to about 30¢ per thousand cubic feet from 10¢, and profits have improved sharply. Results last year benefited particularly from rate case adjustments. With regulatory limits now being approached, earnings are likely to increase by a lesser 5-10% in 1977, again reflecting a wider spread. This rate of growth is also a realistic expectation over the next several years.

METALLURGICAL CHEMICAL AND COPPER

Copperhill

Cities continues to lose money on sulfide ore processing operations at Copperhill, Tennessee, although we estimate that the pretax deficit was reduced last year to about $10-15 million from approximately $25-30 million in 1975. Principal products are copper, iron oxide pellets, sulfuric acid, and zinc concentrate. Copperhill was expanded in 1973 and has been plagued with problems since. Major modifications were required in four iron roasters which heat iron concentrate to remove sulphur dioxide, and this segment is now functioning satisfactorily. However, difficulties continue in the critical iron pelletizing system, and production has been running below levels that could readily be supplied to Republic Steel and other available markets. Results were also hurt in 1976 by reduced demand for sulphuric acid related to fertilizer industry over-supply of phosphates. Cities was able to temper the impact of this downturn by closing sulphuric acid facilities at Atlanta, thereby maintaining better utilization at Copperhill. Expectations are that the Copperhill deficit can be reduced or eliminated in 1977.

Arizona Copper

Cities operates a copper mine with design capacity of 125 million pounds annually at Pinto Valley near Miami, Arizona. Pinto Valley produced about 120 million pounds in 1976, and an additional 30 million was obtained from processing at Copperhill (and additional small quantities elsewhere). Revenues from copper last year were about $100 million at an average price of 68¢ a pound, and profits were probably on the order of $8-10 million, or $0.30-0.40 a share. Contingent on demand from Inspiration Copper, which operates nearby smelting facilities, Pinto Valley output may rise 10 million pounds this year. Prices are not likely to improve significantly in the near term, despite some recent strengthening. Each 1¢ change on an annual basis equals about 3¢ a share in Cities' earnings.

EARNINGS

Cities registered outstanding profit improvement last year to $7.98 a share, up 56% from $5.12 in 1975. Each quarter showed a strong gain.

	1Q.	2Q.	3Q.	4Q.	Year
1975	$1.00	$0.90	$1.49	$1.73	$5.12
1976	1.82	1.89	2.09	2.18	7.98
% Increase	82%	110%	40%	26%	56%

Earnings in 1976 were favorably influenced by several factors. On a pretax basis, higher U.S. natural gas prices added about $1.25 a share and higher U.S. crude prices about $0.65 a share. Natural gas transmission earnings rose by about $10 million, or $0.35 a share. Utilization of the 275,000 barrel a day Lake Charles (Louisiana) refinery rose to 95% from 93% in 1975, and, more importantly, product prices were strong, allowing considerable cost recovery under Federal Energy Administration price controls. Pretax petrochemical profits increased by an estimated $10-15 million, or roughly $0.40-0.50 a share, benefiting from expanded low-density polyethylene facilities at Lake Charles. Copper sales jumped more than 50% as a result of new output at Pinto Valley. The year-to-year comparison also was helped by a $7 million decline in exploration and lease amortization expenses, even though first half 1976 results included writedowns in Indonesia and Peru totaling $12 million ($0.44 a share).

We estimate that 1977 earnings per share will rise to an $8.50-9.00 range. Anticipated improvement will particularly reflect a full year of higher natural gas price under Federal Power Commission Order 770-A. Overall, Cities' average natural gas price should move up about 10¢ per thousand cubic feet this year, adding $0.70 a share to net income before cost increases. If producing costs are 10% higher this year, probably more than an adequate allowance, the additional profits would be about $0.40 a share after taxes. As noted earlier, Cities also has considerable leverage on U.S. crude oil prices, and a probable increase of approximately $0.70 a barrel this year should more than offset the negative impact of lower production and cost inflation. Gains in other segments are likely to be more moderate this year than last, although most should be up. Downstream operations should continue to benefit from a firm price structure, with gasoline recently showing contraseasonal improvement, although a recent strike at Lake Charles clouds the first quarter outlook. Further corrective efforts at Copperhill could eliminate deficits of recent years, adding about $0.25 to earnings per share. On the negative side, international results may be depressed again by higher exploration costs or further writedowns of unsuccessful efforts.

Profits beyond 1977 are somewhat uncertain pending clarification of national energy policy. If price controls are removed from new natural gas and natural gas liquids, five-year growth could be in the upper end of a 5-10% annual range. About 80% of Cities' NGL is subject to price controls. On the other hand, a restrictive approach would probably hold average yearly improvement to a more moderate 5-7%. Cities is not among companies that have more assured prospects from development of major new sources of crude oil or natural gas, and it has no coal. Only in the long term could tar sands make a significant contribution to total profits. Year-to-year variations in earnings may be considerable as a result of fluctuations in copper prices or the impact of general industrial activity on Copperhill.

FINANCES

Capital outlays rose to $525 million last year from $439 million in 1975, and $575 million is budgeted for 1977. These increases primarily reflect large capital requirements of the Athabasca tar sands. The company raised $150 million through sale of 9 3/4% twenty-five year debentures in October 1975. Recent year cash flow-expenditure relationships are shown below.

($ in Millions)

	1974	1975	1976	1977E
Net Income	204	138	217	240
Dividends	61	65	71	82
Retained Earnings	143	73	146	158
Noncash Charges	239	269	310E	350
Funds Provided Internally	382	342	456E	508
Capital Expenditures	447	439	525	575
(Deficiency)	(65)	(97)	(69)	(67)

Cities maintains over $200 million in cash holdings, and the indicated current year deficit could be met from working capital. The quarterly dividend was recently raised to $0.75 a share, the second increase in six months. At about 35% of estimated 1977 earnings, the payout is comfortably low and could be raised again before the year is over. The stock currently yields 5 .% on the $3.00 dividend.

RR-77-33

–Research Department–

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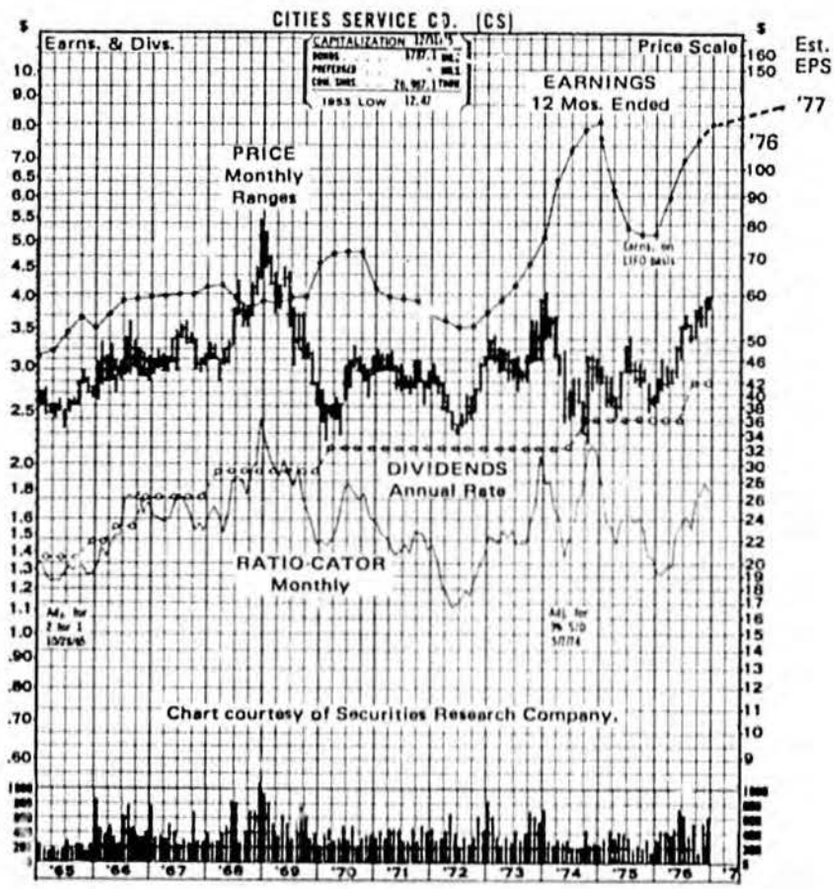
FINANCIAL SUMMARY

(Millions)

	1972	1973	1974	1975	1976
Operating Data					
Revenues	$1,870	$2,066	$2,847	$3,238	$4,006
Depreciation, etc.	115	114	128	130	148
Pretax Income	122	193	298	245	394
Income Taxes	22	55	89	99	170
Net Income	99	136	204	138	217
Operating Ratios					
Pretax Margin	6.5%	9.3%	10.5%	7.6%	9.8%
Tax Rate	18.0	28.5	29.9	40.4	43.1
Net Margin	5.3	6.6	7.2	4.3	5.4
Equity Turnover	1.3X	1.4X	1.8X	2.0X	2.3X
Return on Equity	7.1%	9.2%	12.7%	8.6%	12.7%
Per Share Data					
Earnings Per Share	$ 3.73	$ 5.06	$ 7.58	$ 5.12	$ 7.98
Dividends	2.14	2.14	2.27	2.40	2.60
Price Range	47-34	59-40	61-33	51-36	60-39
P/E Range	13- 9	12- 8	8- 4	10- 7	7- 5
Average P/E	11.0	10.0	6.0	8.5	6.0
P/E Relative to S&P 500	64%	77%	67%	80%	59%
Shares Outstanding	26.6	26.8	26.9	26.9	27.2



BALANCE SHEET SUMMARY

($ in Millions)

	1971	1975	9/30/76	% Change 1971 to Latest
Current Items				
Assets:				
Cash and Equivalents	$ 98	$ 217	$ 262	167%
Receivables	260	408	397	52
Other	226	366	437	93
Total Current Assets	$ 584	$ 991	$1,096	88%
Liabilities:				
Short-Term Debt	$ 102	$ 56	$ 61	(40%)
Other	237	462	507	114
Total Current Liabilities	$ 339	$ 518	$ 568	68%
Current Ratio	1.7X	1.9X	1.9X	–
Net Assets				
Net Working Capital	$ 245	$ 473	$ 528	116%
Net Plant	1,642	2,087	2,210	35
Investments	87	140	93	7
Other Assets – Net	86	16	69	(20)
Total	$2,060	$2,716	$2,900	41%
Capitalization				
Long-Term Debt	$ 564	$ 768	$ 833	48%
Deferred Items	55	309	307	458
Minority Interests	7	7	8	14
Stockholders' Equity	1,434	1,632	1,752	22
Total Capitalization	$2,060	$2,716	$2,900	41%
Long Term Debt % Capital	27%	28%	29%	–

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Thomas C. Pryor
Executive Vice President (212) 285-2666

Harold W. Janeway
Director of Investment Policy (212) 285-2060

Jerome P. Kenney
Director of Research (212) 285-2020

Richard A. Kimball
Director of Marketing (212) 285-2374

Frank J. Ritger
Senior Vice President (212) 285-2120

A. Gary Shilling
Chief Economist (212) 285-2670

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F. Robert Mayforth	Chemicals, Environmental Controls	(302) 656-7741
William N. Walling, Jr.	Coal	(212) 285-2438
Consumer Products & Services		
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Philip L. Dodge	Oil, Gas	(212) 285-2043
John H. Hayward, Jr.	Oil Services & Related	(212) 285-2032
John L. Kalmbach	Natural Gas, Resources, Diversified	(212) 285-2065
Richard L. Davisson, Jr.	Oil Consultant	(617) 482-7767
Financial Services		
A. James Donohue	Banks, S&L's, REIT's, Mortgage Insurers, Misc. Real Estate	(212) 285-2010
Gerald E. Lewinsohn	Insurance	(212) 285-2000
Health Care		
Michael M. Harshbarger	Drugs	(212) 285-2698
L. John Wilkerson	Hospital Products	(212) 285-2695
Market Analysis		
H. Carroll Mackin	Computer Support–Performance Monitor	(212) 285-2056
Peter J. Canelo	Computer Support–Performance Monitor	(212) 285-2256
John A. Mendelson	Technical Analyst	(212) 285-3753
Technology		
Stover L. Babcock, Jr.	Special Situations	(212) 285-2026
James C. Blair	Computers, Office Equipment	(212) 285-2045
Craig W. Fanning	Electrical Equipment	(212) 285-2030
Anthony G. Langham	Instrumentation, Semiconductors	(212) 285-2047
Jack K. Smith	Computers	(302) 656-7741
Utilities		
Marjorie M. Jones	Electric, Telephone	(212) 285-2040
Edward A. Pescatello	Electric, Telephone	(212) 285-2066
Support Services		
Emily K. Baldt	Research Assistant	(302) 656-7741
Jeanne M. Gallagher	Editor	(212) 285-2075
Robert Margolis	Art Director	(212) 285-2319
Ellen L. Miller	Librarian	(212) 285-2085
Mary M. Rieser	Assistant to Director of Research	(212) 285-2020
Ann T. Stott	Institutional Marketing	(212) 285-2064

ONE LIBERTY PLAZA, NEW YORK, N.Y. 10006

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White, Weld & Co.
Incorporated

Summary Report

John Kalmbach
(212) 285-2065

March 2, 1977

TEXAS OIL AND GAS (TXO)

Price (NYSE)		Dividend		EPS (August)		P/E
Current:	27	Rate:	$0.20	1977E:	$2.90-3.10	9.0X
1976-77 Range:	33-13	Yield:	0.7%	1976:	$2.46	11.0X
				1975:	$2.05	13.2X

Shares Outstanding:	19,593,861	Return on Avg. 1976 Equity:	23.9%
Market Value:	$529 Million	Book Value Per Share (11/30/76):	$12.06

SUMMARY & CONCLUSION

Texas Oil and Gas has compiled one of the outstanding records of earnings growth and stability in recent U.S. history. Over the past 19 years, net income has grown uninterruptedly at a rate of 37% per year and at a rate of 40% over the past five years. Current and expected future price trends for natural gas point to continued strong future growth for TXO and we believe it is one of the more attractive equities for long term participation in the domestic oil and gas industry.

Many investors have viewed TXO as a quasi-public utility, gas gathering company. In our opinion, the company is more accurately a highly integrated natural gas producer with a strong gas exploration and development bias. Upwards of 65% of capital outlays have been devoted to exploration and development and acreage acquisitions in recent years. The company does not break out the earnings contribution from its oil and gas production, preferring to regard these activities as part of an integrated whole with its gas gathering and gas liquid extraction operations. Nevertheless, we estimate that the $71.1 million in revenues generated by oil and gas production in FY 1976 produced 40% or more of TXO's earnings before interest and taxes (EBIT) and 50% or more of its cash flow. Further, 62.4% of TXO's net investment in long term assets is represented by oil and gas properties. We fully expect the relative importance of oil and gas production to increase in the future as the company develops more of its substantial inventory of 3.5 million unproven net acres. Most of this inventory is trend acreage in proximity to established production. Drilling locations are chosen to maximize near term return on investment thus, wild-catting is pretty much avoided. Instead TXO participates in a large number of relatively low reserve potential/low risk wells (394 in 1976) and realizes a high success ratio (60% to 70% in recent years). TXO's concentration on development and field extension drilling virtually precludes major discoveries but has resulted in solid reserve additions on an overall basis.

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TXO continues to build its gas gathering and processing facilities at a strong pace so that this important part of operations is positioned for good future growth as well. In addition to expanding several of its existing 31 gathering systems, where possible, TXO continues to follow its long standing tactic of building gathering systems in gas prospective areas where there are good prospects for considerable exploration and development activity. This approach to the gathering business dovetails with TXO's drilling activities since much of its undeveloped acreage is adjacent to its gathering systems in Texas and Oklahoma.

It should also be noted that, although nearly all of TXO's current gathering and production revenues come from sales in the Texas and Oklahoma intrastate markets, the company is positioned to enter the interstate gas market in a major way should de-regulation of new gas or court confirmation of the $1.44 interstate price for new gas take place. TXO holds significant, largely unexplored leases in Southern Wyoming, Kansas, Southeast New Mexico, Colorado and Arkansas, areas which lack large intrastate markets. In addition, TXO purchased a small interstate gathering system in Wyoming last year. Thus, the creation of viable interstate prices for new gas will probably lead to major investments by TXO in these markets.

Texas Oil and Gas, with a large base of reserves and production, a major acreage inventory, considerable financial strength and an outstanding record of growth is a low risk vehicle for participation in the domestic oil and gas industry. Selling at about 10X estimated EPS for the year ending August 31, 1977, TXO has 19.6 million shares outstanding with a market value of $529 million. TXO common shares appear to be one of the best values among publicly owned independent oil and gas equities and are suitable for all types of investors.

VALUATION / MARKET DATA

Bank Holdings (Spectrum) 9/30/76:	22	13.7%
Mutual Funds (Spectrum) 9/30/76:	15	8.0
Insurance Companies 12/31/75:	30	4.0
Total Institutional:		25.7%
1976 Average Daily Trading Volume:		25,700 shares

As indicated by the six year history of TXO's average P/E and P/E relative presented in the Financial Summary, TXO has been priced over a wide multiple range in recent years. TXO commanded a P/E as high as 40X to 60X during much of 1971, 1972 and 1973, even though reported earnings were untaxed in those years. Since 1973, as a result of the nationwide natural gas shortage, P/E's for all companies associated with the transportation and distribution of gas have

come down sharply until recently. TXO's market fortunes were further impacted by the severe financial and supply problems of Coastal States Gas, another large gas gathering company, even though TXO has consistently maintained a strong financial and supply position. Thus, TXO's P/E has been as low as 6X earnings in each of the past three years. TXO has never contracted to deliver gas in amounts in excess of the quantities it has dedicated to it. In fact, TXO employs dedication contracts i.e., its suppliers dedicate gas to TXO for the life of the field and its buyers buy reserves in place, what ever they may prove to be, as opposed to a specified quantity.

In our opinion the past offers little aid in formulating a proper current and future P/E for TXO, however, the following factors should be key determinants of where TXO will sell:

1. Earnings growth—TXO's past record has been outstanding. For 1977, we are projecting an earnings gain of 22%. Beyond 1977, given TXO's strong gas supply position and excellent exploration potential, we envision EPS growth of 15% or more in fiscal 1978–79.
2. The whole economic and political climate surrounding natural gas has improved dramatically over the past two years and gas de-control would considerably further enhance the group's investor image. Hence, the oil and gas group may well be gaining a higher relative multiple.
3. Within the domestic independent oil and gas group, TXO is one of the few equities that offers both investment grade quality and good marketability.
4. The low dividend payout provides no yeild support.

The above factors suggest to us that, in the present yield conscious investment environment, a P/E at a 10% to 20% discount to TXO's expected growth rate may well be appropriate, or 12 to 14X earnings. Stocks seldom trade in such a narrow range for very long so that a spread of 10X to 16X may prove to be TXO's typical trading range over the next eighteen months, assuming no significant change in overall market multiples. If the above suggested range proves to be reasonably accurate, TXO offers considerable appreciation potential since it would sell in the range of 29 to 50 based on our 1977 estimate. In any case, TXO does seem to offer investors an attractive risk/reward ratio and it is for this reason that we favor it for participation in the domestic oil and gas industry.

DISCUSSION OF OPERATIONS

Through 26 wholly owned and 5 partly owned systems, TXO gathers large amounts of natural gas for distribution via intrastate pipeline systems or directly to industrial users in Texas and Oklahoma. These 31 systems have an aggregate maximum daily capacity of 1.37 billion cubic feet net to the company's interest. A second, important part of operations is company owned hydrocarbon production and gas liquids production. Company production in FY 1976 averaged about 139,000 mcf/d of gas, 3,270 b/d of oil and condensate plus 11,553 b/d of gas liquids. The gathering system had 13 years of reserves at 1976 delivery rates and about 19% of these reserves are company owned.

Although not significant from an earnings standpoint, the wholly owned FWA Drilling Company is an important adjunct to TXO's operations. FWA provides onshore contract drilling services in Texas and Oklahoma. Most of FWA's revenues are generated outside of TXO, however, with 25 drilling rigs, FWA provides TXO with strong protection against possible future rig shortages.

GAS GATHERING AND PROCESSING

Gas gathering is a business of collecting gas from a number of individual wells, often owned by a number of different producers, in a localized producing area. Thus, a sizeable block of gas production/reserves is made available for marketing to buyers of large quantities of gas - usually a gas pipeline company or other large user. Gas gathering is a vital function in the process of getting the gas production of individual wells to the ultimate consumer of gas. Traditionally, large buyers of gas have been unwilling to go to the expense of hooking up relatively small reserves of gas. Similarly, individual producers usually prefer to avoid the cost of installing gathering lines to connect their wells to a transmission system. As a middleman, the gas gatherer makes the investment necessary to assemble a large block of gas from a number of wells for sale to large buyers through the construction of a gas gathering system. Natural gas often contains condensate and other gas liquids such as butane, ethane, and propane. These liquids have economic value and can be stripped from the gas stream by processing plants so that gas liquids production is an important corollary aspect of the gas gathering business.

TXO is one of the largest intrastate gas gatherers in the U.S. and it processes its systems' gas through-put for liquids. Hence gas liquids production is a meaningful source of revenues. TXO owns all or part of 30 intrastate systems located primarily in Texas and Oklahoma with the Texas systems providing most of TXO's gas gathering/processing revenues. In addition, TXO acquired a small interstate system in Southern Wyoming last year.

A six year summary of gathering results is presented on the following table.

	1976	1975	1974	1973	1972	1971
Revenues from Gas Gathering/Processing (000)	$298,611	$197,984	$129,597	$ 62,740	$ 43,948	$ 29,007
Cost of Purchased Gas (000)	224,134	133,515	92,572	42,442	29,444	18,053
Gross Profit (000)	74,477	64,469	37,025	20,298	14,504	10,954
Volume Delivered (mcf 000)	210,055	217,688	203,204	175,252	146,032	107,430
% Company Owned	16.3	12.0	13.7	15.4	12.2	14.4
Dedicated Reserves (mmcf)	2,722.0	2,706.9	2,687.0	2,504.3	2,221.8	1,844.2
% Company Owned	18.9	19.0	20.0	18.8	16.9	14.2
System Reserve Life (years)	13.0	12.4	13.2	14.3	15.2	17.2

Although recent volume/reserve trends reflect the growing national shortage of natural gas, TXO's reserve position remains strong and is one of the best in the nation among major interstate or intrastate gas systems (nationally, the reserve life index is under 10 years of supply). Importantly, TXO's gross profit or gross gathering differential has improved both steadily and rapidly over the past four years, increasing from $14.5 million to $74.5 million since 1972.

Volume growth has slowed over the past two years reflecting the recession of 1974-1975, mild weather patterns in Texas and Oklahoma, a shift by some industrial users from gas to fuel oil and coal and conservation efforts by users in the face of rapidly escalating gas prices in TXO's marketing areas. Continued economic recovery and the severe cold weather thus far in fiscal 1977 is resulting in a resumption of volume growth this year and we suspect that deliveries will increase by 10% to 15%, partially as a result of new contracts signed in fiscal 1976. Gas liquids output should increase also, reflecting the increased processing capacity on-stream this month at Woodward, Oklahoma and increased gas deliveries. The gross gathering spread will be up again in 1977 and we look for another strong earnings gain from gas gathering this year.

Longer term and weather patterns aside, we expect at least moderate growth in demand for TXO's gas and gas liquids reflecting continued economic growth and population influx in Texas and Oklahoma. New intrastate markets in certain southern and southwestern gas producing states where TXO does not presently operate may become attractive as increasing exploration activity proves up new gas reserves. Decontrol of new gas prices nationally would probably lead to significant expansion by TXO in the interstate gas gathering market. To that end, TXO's 1976 purchase of a small profitable Wyoming gathering system will give it experience in dealing with the regulatory climate of the interstate market. Interestingly, the prospect of a $1.44+ price per mcf for new interstate gas has touched off a rather feverish level of gas exploration in the Rocky Mountain Region and S.E. New Mexico, even though this price level has been subjected to legal challenge. Hence, TXO appears to have ample room for substantial growth in the gas gathering field. Our worst case assumption, based on TXO confining its gathering activities to its present markets, envisions volume growth of 5% to 10% per year with earnings increasing at a rate of 7% to 13% per year. It is worth noting that TXO's present maximum daily gathering capacity of 1,366,000 mcf/d is well above 1976 average throughput of 573,920 mcf/d and the recent estimated peak of 825,000 mcf/d indicating that the systems have substantial unused capacity. Gas gathering is a capital intensive, largely fixed cost business and expected increases in exploration activities in areas adjacent to TXO's gathering systems along with its strong reserve position should lead to higher utilization and positive operating leverage for TXO's existing investment in gathering and processing facilities.

Beyond the next two to three years, however, there must be some concern over TXO's ability to show good volume growth. It remains to be seen whether or not increased exploration by TXO and others will produce new reserves sufficient to allow volume growth for an extended period. However, for the intermediate term, in view of TXO's strong reserve position, given the demand conditions, deliveries can expand.

PRODUCTION AND EXPLORATION

TXO holds substantial producing and undeveloped oil and gas leases in the major producing areas of Texas and the Mid-Continent region. In addition, significant acreage is under lease in S.E. New Mexico, Colorado and Southern Wyoming. A five year summary of operating results and acreage holdings is presented on the following page.

	1976	1975	1974	1973	1972
Oil and Gas Revenues (000)	$71,150	$36,282	$24,041	$15,252	$11,858
Volumes Produced Annually:					
Natural gas (mmcf)	50,875	40,454	44,733	45,985	41,165
Oil & Condensate (BBLS 000)	1,193.5	938.6	932.7	1,027.2	853.5
Proved Reserves:					
Natural Gas (BCF)	*799.1	721.3	708.2	697.2	731.6
Oil & Condensate (BBLS 000)	*9,564	8,945	8,716	8,240	12,279
Reserve Life					
Natural Gas	15.7	17.8	15.8	15.2	17.8
Oil & Condensate	8.0	9.5	9.2	8.5	14.4
Undeveloped Acreage (000)	3,529	2,925	2,639	1,535	613

*1976 data includes proved undeveloped reserves, 1972-1975 data do not include proved undeveloped reserves.

It should be noted that the above reserve and production data is for those amounts owned by the company except for gas liquids a fraction of which is attributable to company owned leases. Similarly, the revenue figures include the amount generated by oil, condensate and gas production only. Revenue from gas liquids are included in gathering revenues.

Two significant factors emerge from the above data. TXO's production and reserve trends have been superior to that of the domestic industry where declining production and reserves have been the rule. Secondly, TXO has built its undeveloped acreage inventory from a modest level in 1972 to 3.5 million acres, one of the larger positions among domestic independent oil and gas producers. In addition, although its reserve life indices are down, TXO still enjoys a good reserve position in natural gas, the most important source of production revenues and earnings for TXO. Average realizations for company owned gas production came to $1.11 in 1976 up from 61¢ the year before. Similarly, average prices for crude production were $11.08 per barrel vs. $9.54, indicating a high proportion of upper tier and stripper production in the mix.

Earlier we mentioned TXO's bias toward exploration and development based on recent capital spending trends and book investment. Thus, of total capital spending in fiscal 1975 and 1976 of $111.5 million and $106.3 million, respectively, $70.6 million and $81.4 million was spent on oil and gas for the two years. In 1977, the company expects to apportion about 2/3 of its anticipated $150 million capital budget to oil and gas.

Some comments on TXO's approach to exploration are appropriate here:

1. Drilling prospects are heavily natural gas oriented.

2. Most of the exploration activity is in areas near TXO's gathering systems.

3. For the most part, the company drills low risk/low potential wells.

4. Consistent with the above, the company has avoided true wild-cat drilling which sharply reduces the odds of a major discovery.

5. The company participates in a large number of wells each year (394 gross wells and 231 net wells in 1976) and enjoys a high success ratio due to the semi-proven nature of the prospects drilled. Since 1971, the company's success ratio has ranged between 62% and 80%.

6. Finding costs are relatively high at around 64¢/mcf recently.

The company's approach has resulted in annual net reserve additions over the past few years and this is likely to continue. Further, TXO's drilling has been heavily concentrated in areas with access to well developed, high priced intrastate markets. As a result TXO's substantial 2,120,000 acres of undeveloped leases in Colorado, Wyoming, Kansas, Oklahoma, Arkansas and New Mexico are largely unexplored and may hold great future potential. We feel that sufficiently high prices for interstate gas (the current $1.44 interstate price may be enough) may lead to much enlarged activity on this part of TXO's acreage. Indeed, TXO recently formed a joint drilling agreement with a unit of Northern Natural Gas covering about 190,000 acres of TXO's leases in Kansas and another joint-venture with Columbia Gas for a 5 to 10 well program in New Mexico. Recognizing that predicting future exploration results for any company is problematical, TXO appears well positioned for good future exploration results.

Finally, production is clearly an important source of earnings for TXO and, although it does not report the earnings contribution from its production, we feel it necessary to make an independent estimate of its contribution. First let us present what is known and our other operative assumptions as they relate to fiscal 1976 results and expected 1977 results.

1. We know production volumes for oil, condensate and gas production and revenues for oil, gas and condensate.

2. We know average oil and gas prices for 1976 as well.

3. Management has forecast a gas volume increase of at least 10% in 1977.

4. We know that total 1976 DD&A amounted to $30.6 million and that depletion alone came to $17.7 million.

5. A 40%-50% pre-tax profit margin is often attained by pure oil and gas producers.

6. By deducting revenues from oil and gas obtained from the volume and price figures given, we can derive revenues from condensate and drilling arrangements from company owned leases.

The above factors form the basis for the estimates presented on the following page.

Revenues: (000,000)	1976	1977
Gas (1976, 50.9 BCF @ $1.11/MCF; 1977, 57.9 BCF @ $1.35)	$56.5	$78.2
Oil (1976, 863,229 BBLS @ $11.08; 1977, 800,000 BBLS @ $11.75)	9.6	9.4
Condensate (1976, 330,553 BBLS @ $10.50E; 1977, 350,000 BBLS @ $11.20)	3.5	3.9
Other	1.5	2.0
	71.1	93.5
Depletion, Depreciation, etc.	20.0	28.0
Operating Expenses	14.0	16.0
Earnings Before Interest & Taxes (EBIT)	$37.1	$48.5
Oil & Gas % of Total EBIT	43.8%	45.8%
Oil & Gas % of Total Cash Flow Before Interest & Taxes	50.3%	52.5%

The above indicated cash flow and EBIT estimates are imprecise and should be viewed as a rough approximation of the real situation. Nevertheless, it seems clear that TXO's production is an important source of earnings and cash flow.

CONTRACT DRILLING

The wholly owned FWA Drilling owns and operates 25 shallow and medium depth drilling rigs. FWA is used captively to a considerable extent but generated $19 million of revenues in 1976 and produced 3% to 5% of earnings in recent years. FWA may prove invaluable to TXO's exploration and development program over the next few years. Signs of a widely anticipated future rig shortage are already appearing in some areas and TXO could use FWA 100% if need be (the previous peak use of FWA by TXO was 38% in FY 1975). Furthermore the rig availability represented by FWA may create a number of attractive farm-out opportunities to TXO.

RECENT OPERATING TRENDS AND OUTLOOK

Fiscal 1976 was another in a long string of strong earnings years. Reflecting rapidly rising energy prices and strong growth in company owned production, total revenue advanced 55% to $389.3 million. Strong profit margin expansion in oil and gas production allowed pretax earnings to increase about 47% and, after accruing federal income taxes at a 32.3% rate versus 17.3% in 1975, net income and EPS were each up approximately 20%.

During the first quarter of the current fiscal year earnings accelerated largely because of very strong gains in production profits. First quarter results are summarized on the following page.

SUMMARY FOR THE QUARTER ENDED NOV. 30

	1976	1975	% Change
Revenues (000):			
Gas gathering	$103,640	$55,834	+85.6%
Oil & gas	23,079	13,090	+76.3
Drilling	5,832	4,690	+24.3
Total	$132,733	$73,782	+79.9
Expenses			
Costs of Gas	83,727	39,039	+114.5
Other expenses	27,878	21.012	+ 32.7
Total Costs	111,604	60,051	+ 85.8
Income Before F.I. Taxes	21,128	13,731	+ 53.8
Federal Income Taxes (rate)	7,246 (34.3%)	3,059 (22.3%)	+136.9%
Net Income	$13,882	$10,672	+ 30.1
EPS	$0.71	$0.54	+ 31.4

The first quarter results did demonstrate the temporizing effects on TXO's gathering business of the ample supply situation in its markets. While gathering revenues increased by nearly $48 million or 86%, cost of gas rose by a faster rate of 115% or about $45 million. As a result, although deliveries were up 29.9% from the depressed year ago level, the gross gathering differential increased a more modest, but still healthy, 18.5%. After the dramatic increase in TXO's gross gathering differential (GGD) in recent years, which reflected gas shortage and rapidly rising well head prices; a slowdown in growth is to be expected. High prices for gas led to increased drilling and reserves available to the Texas and Oklahoma intrastate markets eliminating for the time being the "sellers market" of 1973 to 1975. While national decontrol of new gas prices may well create a new "sellers market" f . XO, in the absence of decontrol TXO's gathering business figures to grow more in line with volume growth than it has in recent years. Traditionally, the gas gathering business has been a fixed spread (or differential), rate of return type of business. The character of the business is reflected in TXO's gathering contracts which, with some variation, allow the company to recover the cost of gas and other costs plus enough additional revenues to provide it with a return on investment. Indeed, 33% of 1976 deliveries were made under straight "cost of service" contracts permitting TXO a rate of return on investment of not less than 8%. New reserves dedicated to TXO from wells contiguous to its gathering system are, for the most part, not obligated to existing purchasers so that TXO was able to substantially improve its GGD and rate of return on new contracts during the recent period of rapidly rising gas prices. Most likely, TXO was able to upgrade some older contracts in return for additional supplies as well.

The foregoing discussion of gathering trends notwithstanding, TXO should be able to maintain a respectable rate of growth in its gathering business in the future. Population and industrial growth in Texas and Oklahoma should be well above average leading to continued growth in demand for natural gas in TXO's markets. TXO has the reserve position to satisfy increased demand and considerable unused capacity to leverage its volume growth.

OPERATING FORECAST
(000)

Revenues	1976A	1977E	% Change
Gathering	$298,611	$433,600	+45.2%
Oil & Gas	71,150	93,000	+30.7
Drilling	18,757	22,500	+20.0
Miscellaneous	781	800	---
Total	$389,300	$549,900	+41.3%
Expenses			
Cost of Gas	224,134	354,120	+57.9%
Operating & General	28,125	37,970	+35.0
Operating Taxes	7,647	12,000	+60.1
Depreciation, Depletion, etc.	28,857	40,000	+38.6
Drilling	15,818	20,500	+29.6
Interest Charges (net)	13,510	14,500	+ 7.3
Earnings Before Taxes	71,208	91,310	+28.2
Federal Income Taxes	23,000	31,960	+39.0
Net Income	48,208	59,350	+23.1
EPS	$2.46	+3.03	+23.2

FINANACIAL AND ACCOUNTING

At November 30, 1976, TXO's capitalization was:

CAPITALIZATION: NOVEMBER 30, 1976
(000)

Long Term Debt	$201,901.6	42.8%
Deferred Credits	33,437.0	7.1%
Common Equity	236,357.9	50.1%
Total	$471,696.5	100.0%

Given the character of TXO's business, the company is strongly capitalized. The first quarter annualized return on capital was 11.8% and a healthy 23.5% on equity. Further, interest charge coverage came to a solid 6.2X on a pretax basis - worthy of the company's "A/A+" rated debt. Though capital spending in fiscal 1977 is targeted to rise sharply to $150 million from $106 million last year, net internal cash generation should be in the range of $125-$130 million including deferred taxes, or some 32% greater than last year. Nevertheless, bank loans under the company's long term line of credit were up to $64 million recently. Hence, and partially because of relatively attractive long term interest rates, TXO recently sold $75 million 8¼% First Mortgage Bonds. Capital ratios will remain strong, however, since retained earnings will come to about $53 million this year and we expect TXO to apply a significant portion of the proceeds from the bond offering to retirement of bank borrowings.

Longer term, whether or not capital ratios will strengthen further will be determined by management's perception of the attractive investment opportunities available to TXO, and the strong desire to maintain an "A" rating on the company's debt. More to the point, we strongly suspect that firmly established high interstate prices for natural gas would lead to an acceleration of capital investment by TXO with some attendant increase in financial leverage.

The principal accounting methods employed by TXO include:

1. "Full Cost" method for oil and gas properties.
2. Straight-line depreciation.
3. Interest is capitalized for all major investments and improvements.
4. Flow through of the investment tax credit.
5. Deferred Taxes are charged to earnings to reflect the difference in taxes paid between tax and book accounting.

FINANCIAL SUMMARY

	1977E	1976	1975	1974	1973	1972	1971
Operating Data (000)							
Revenues	$549,900	$389,300	$250,514	$167,104	$88.731	$65,717	$43,869
Pre-Tax Earnings	91,310	71,208	48,512	25,881	16,501	12,520	8,945
Income Taxes	31,960	23,000	8,400	—	—	—	—
Net Income	59,350	48,208	40,112	25,881	16,501	12,520	8,945
Operating Ratios							
Pre-Tax Margins	16.6%	18.3%	19.4%	15.5%	18.6%	19.1%	20.4%
Tax Rate	35.0	32.3	17.3	—	—	—	—
Net Margins	10.8	12.4	16.0	15.5	18.6	19.1	20.4
Return on Equity	23.6	23.9	25.2	20.5	15.7	14.9	14.8
Per Share Data							
EPS	$3.03	$2.46	$2.05	$1.32	$0.84	$0.65	$0.51
Dividends	0.20	0.20	0.0125	0.0125	0.0125	0.0125	0.0125
Shares Outstd. (000)	19,600	19,601	19,599	19,593	19,601	19,137	17,617
Price Range		28-13	22-12	21- 8	39-14	39-24	26-14
P/E Range		11- 5	11- 6	16- 6	46-17	60-37	51-27
P/E Relative		0.84	0.80	1.21	1.65	2.82	2.28

RR-77-40

–Research Department–

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White, Weld & Co.
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Thomas C. Pryor
Executive Vice President (212) 285-2666

Harold W. Janeway
Director of Investment Policy (212) 285-2060

Jerome P. Kenney
Director of Research (212) 285-2020

Richard A. Kimball
Director of Marketing (212) 285-2374

Frank J. Ritger
Senior Vice President (212) 285-2120

A. Gary Shilling
Chief Economist (212) 285-2670

Basic Industries		
George H. Cleaver	Metals & Mining	(212) 285-2012
Frederic S. Coffman, Jr.	Forest Products, Paper	(212) 285-2748
Betty M. Fagan	Pollution, Publishing, Capital Goods	(212) 285-2054
F. Robert Mayforth	Chemicals, Environmental Controls	(302) 656-7741
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Consumer Products & Services		
William R. Gill, Jr.	Retail Trade	(212) 285-2070
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Milton Schlackman	Consumer Electronics, Air Conditioning, Appliances	(212) 285-2024
Daniel E. Somers	Beverages, Fast Food, Lodging	(212) 285-2076
Energy		
A. Hager Bryant, 3rd	Gas Pipelines and Distribution	(212) 285-2696
Philip L. Dodge	Oil, Gas	(212) 285-2043
John H. Hayward, Jr.	Oil Services & Related	(212) 285-2032
John L. Kalmbach	Natural Gas, Resources, Diversified	(212) 285-2065
Richard L. Davisson, Jr.	Oil Consultant	(617) 482-7767
Financial Services		
A. James Donohue	Banks, S&L's, REIT's, Mortgage Insurers, Misc. Real Estate	(212) 285-2010
Gerald E. Lewinsohn	Insurance	(212) 285-2000
Health Care		
Michael M. Harshbarger	Drugs	(212) 285-2698
L. John Wilkerson	Hospital Products	(212) 285-2695
Market Analysis		
H. Carroll Mackin	Computer Support–Performance Monitor	(212) 285-2056
Peter J. Canelo	Computer Support–Performance Monitor	(212) 285-2256
John A. Mendelson	Technical Analyst	(212) 285-3753
Technology		
Stover L. Babcock, Jr.	Special Situations	(212) 285-2026
James C. Blair	Computers, Office Equipment	(212) 285-2045
Craig W. Fanning	Electrical Equipment	(212) 285-2030
Anthony G. Langham	Instrumentation, Semiconductors	(212) 285-2047
Jack K. Smith	Computers	(302) 656-7741
Utilities		
Marjorie M. Jones	Electric, Telephone	(212) 285-2040
Edward A. Pescatello	Electric, Telephone	(212) 285-2066

Support Services		
Emily K. Baldt	Research Assistant	(302) 656-7741
Jeanne M. Gallagher	Editor	(212) 285-2075
Robert Margolis	Art Director	(212) 285-2319
Ellen L. Miller	Librarian	(212) 285-2085
Mary M. Rieser	Assistant to Director of Research	(212) 285-2020
Ann T. Stott	Institutional Marketing	(212) 285-2064

ONE LIBERTY PLAZA, NEW YORK, N. Y. 10006

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White, Weld & Co.
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Progress Report

MANAGEMENT CONTACT

Philip L. Dodge
(212) 285-2043

April 4, 1977

GULF OIL (GO)

Price (NYSE)		Dividend		EPS (December)		P/E
Current:	28	Rate:	$1.80	1977E:	$4.50	6.3X
1977 Range:	31-27	Yield:	6.3%	1976:	$4.19	6.8X
				1975:	$3.60	7.9X
Market Value:		$5,530 million		Return on Average 1976 Equity:		12.2%
Average Shares Outstanding:		195 million		Book Value Per Share (12/31/76):		$35.64

OPINION

We have been generally avoiding international oil stocks for new investment, and would continue to. Relative multiples have moved up about 30 percentage points over the past 2½ years to levels which are historically above average, and overseas operations appear to face chronic margin pressure. In our opinion, Gulf will moderately underperform the market over the next year and is attractive only for its generous and well-covered yield. We expect the dividend to be raised modestly in 1977.

FIRST QUARTER

Gulf Oil expects to report lower first quarter earnings per share. We are currently estimating $0.80 versus $1.02 a year ago. However, we continue to look for an increase to $4.50 for the full year. By line of business, we believe the comparisons will be roughly as follows:

	First Quarter			Year		
Earnings Per Share	1976	1977E	Incr./ (Decr.)	1976	1977E	Incr./ (Decr.)
United States						
Petroleum	$ 0.57	$ 0.40	$(0.17)	$ 1.88	$ 2.25	$ 0.37
Chemicals	0.14	0.08	(0.06)	0.48	0.50	0.02
Nuclear	(0.01)	(0.01)	-	(0.05)	(0.05)	-
Minerals	(0.01)	(0.01)	-	(0.06)	(0.03)	0.02
Subtotal	$ 0.69	$ 0.46	$(0.23)	$ 2.26	$ 2.67	$ 0.41
Canada						
Petroleum	$ 0.17	$ 0.15	$(0.02)	$ 0.52	$ 0.60	$ 0.08
Chemicals	0.01	0.01	-	0.04	0.05	0.01
Minerals	-	0.02	0.02	0.02	0.07	0.05
Subtotal	$ 0.18	$ 0.18	$ 0.00	$ 0.58	$ 0.72	$ 0.14
Overseas						
Petroleum	$ 0.06	$ 0.12	$ 0.06	$ 1.11	$ 0.87	$(0.24)
Chemicals	0.09	0.05	(0.04)	0.24	0.25	0.01
Nuclear	-	-	-	(0.01)	(0.01)	-
Other	-	-	-	0.01	-	(0.01)
Subtotal	$ 0.15	$ 0.17	$ 0.02	$ 1.35	$ 1.11	$(0.24)
Total	$ 1.02	$ 0.81	$(0.21)	$ 4.19	$ 4.50	$ 0.31

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U.S. petroleum (45% of 1976 profits) has been hurt in the first quarter by narrower refining and marketing margins. This negative comparison has been aggravated by an artificial element of product price controls. Under Federal Energy Administration rules, cost changes cannot initially be reflected in price adjustments until the month following incurrence. In early 1976, the $2.00 a barrel crude oil import duty had been removed, and profits were temporarily inflated for as much as a month until appropriate price alterations (or reductions in banked costs) were necessary. This year, however, the cost of imported oil has been rising sharply because (1) quantities are higher, (2) spot prices were already moving up toward the end of 1976, and (3) OPEC increased official prices 5–10% on January 1, 1977. Gulf imported about 36 million barrels of crude during the first quarter of this year, up 8 million barrels from 28 million barrels in the same period of 1976, and import costs probably rose $145 million on a year-to-year basis, or $0.35 a share after income tax offset. Although product prices rose, full cost recovery has not yet been possible.

Domestic refining profitability has also been impaired by product market shifts during the recent frigid winter which required maximizing fuel oil yields. In the "distillate mode", refineries manufacture a combination of products having a lower aggregate value, and this seasonal dip was magnified by the greater need for heating fuels last winter. In January-February, Gulf's U.S. distillate sale rose 5% compared with a 2% increase in total product volume.

On the production side, domestic petroleum trends have been better thus far in 1977. The company's U.S. crude oil price averaged about $7.90 a barrel in the first quarter, up from $7.08 a barrel a year ago. This comparison was helped considerably by a decline in lower-price "old" oil to 67% from 75% offtotal crude output. Oil production itself dropped to about 330,000 BD from 337,000 BD, but revenues rose by an indicated $18 million, or about $0.05 a share after taxes.

	Estimated First Quarter U.S. Crude Production	
	1976	1977
	(barrels daily)	
Lower-Tier	253,000	221,000
Upper-Tier	84,000	109,000*
Total	337,000	330,000

*Includes 26,000 barrels a day of stripper crude.

Gulf's U.S. natural gas production during the first quarter of this year averaged an estimated 1,750 million cubic feet a day, equal to last year. The average wellhead price was roughly 52¢, up from 39¢. On this basis, domestic natural gas revenues rose by about $19 million, or $0.05 a share allowing for the tax offset. About 15% of the company's natural gas sales are covered by Federal Power Commission Order 770-A, suggesting an annual revenue benefit of about $40 million. Thus far, Gulf has reserved roughly half of this amount, pending the outcome of court proceedings. Although production commences from four new

Gulf of Mexico natural gas fields during 1977, much of the additional volume, ultimately 240 million cubic feet a day, is contractually committed to Texas Eastern Transmission at a fixed price of 21¢ per MCF, or a marginally profitable level. (Even so, Gulf's 1977 U.S. wellhead price of natural gas should average about 55¢, up from 45¢.)

The first quarter U.S. petroleum comparison will be helped moderately by absence of a March 1976 $11 million ($0.06 a share) after tax expense for the Rio Blanco oil shale project.

In overseas petroleum (26% of 1976 earnings), Gulf has been particularly squeezed by the January 1, 1977 OPEC price increase. All of the company's OPEC crude stream comes from countries which have raised prices approximately 10%. About two-thirds of total OPEC crude is from ten percenters. Purchases, including modest equity liftings by Gulf from OPEC countries, total about 1,100,000 barrels a day, of which about 400,000 barrels a day moved to the U.S. On this basis, the overseas cost increase during the first quarter would be about $75 million (90 days X 700,000 barrels a day X $1.19 a barrel). The company's European oil product realizations averaged about $17.00 a barrel in the first quarter of 1977, up $0.77 from $16.23 a barrel in the fourth quarter of 1976. If European experience was representative, overseas operations absorbed about $25 million ($0.13 a share) of unrecovered crude oil cost increases during the first quarter. Nevertheless, the first quarter overseas comparison should be modestly favorable, partly because early 1976 was so weak.

Chemical operations (18% of 1976 earnings) have been hurt by volume declines of 10-15% from levels of a year ago. In addition, start up costs at the new Cedar Bayou, Texas olefins plant have had a negative influence.

FULL YEAR

Despite the lower first quarter, we continue to estimate that Gulf will earn about $4.50 a share in 1977, up from $4.19 last year. U.S. natural gas production should rise 7-8% and average prices by 20-25%. Domestic crude oil prices are likely to be up about 10%, and volume down only modestly. Refining-marketing margins in the United States may show significant recovery as early as the second quarter. U.S. petroleum product supply is snug in a background of rising demand, and refinery utilization east of the Rocky Mountains is stretched at the seams. On the whole we expect Gulf's U.S. petroleum operations to show year-to-year improvement during the final nine months of 1977. Our current year U.S. petroleum estimate allows for exploration expenses to rise $30 million.

The slip in chemical volumes also appears to be temporary, particularly in the United States where economic expansion should continue at least into next year. Later in 1977, Gulf should benefit from greater use of new olefins facilities at Cedar Bayou, Texas. This plant has annual capacity for 1,200 million pounds of ethylene and 800 million pounds of polypropylene and other olefins. However, full year U.S. chemical comparisons will be hurt by the absence of a $40 million ($0.21 a share) investment tax credit recorded in 1976. The chemical segment should account for the total estimated decline in i.t.c. to about $50 million from $92 million in 1976.

Although overseas operations have become less important in recent years, Gulf may continue to experience margins pressure over the balance of 1977, and we presently expect a negative twelve month comparison. Quarterly variations from this pattern are of course possible. For example, if a further OPEC price increase is anticipated on January 1, 1978, the final months of 1977 may again benefit from abnormally high volumes. Overseas exploration expenses are estimated to rise by about $40 million in 1977.

Gulf has an excellent position in uranium. However, production from the Mt. Taylor (New Mexico) mine, which has estimated reserves of more than 100 million pounds, is not likely to begin until 1981. Minerals operations as a whole are not likely to have a major impact on 1976-1977 comparisons.

CAPITAL EXPENDITURES

Budgeted 1977 outlays in relation to actual 1976 spending are shown below:

	1976	1977E
	($ Millions)	
Exploration and Development	744	1,000
Refining, Marketing, Transporation	306	250
Chemicals	150	240
Minerals	70	100
Other	92	110
Total Capital Expenditures	1,362	1,700
Exploration Charged Against Income	364	450
Total Outlays	1,726	2,150

Retained cash flow should approximate $1,400 million in 1977, indicating a $300 million drawdown in cash holdings during the year. This reduction should be entirely tolerable. Gulf held cash and marketable securities totaling $1,989 million ($10.20 a share) at the end of 1976, compared with current liabilities of $1,562 million. We also expect an increase in the quarterly dividend to $0.47½ or $0.50 a share from the current $0.45 during 1977.

RR-77-59 —Research Department—

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White, Weld & Co. Incorporated

Progress Report

A. Hager Bryant, 3rd
(212) 285-2696

December 15, 1976

UNITED ENERGY RESOURCES (UER)

Price (NYSE)		Dividend		EPS (Dec.)*		P/E
Current:	25 1/4	Rate:	$1.32	1977E:	$5.10	5.0X
Range (1976):	25-14	Yield:	5.2%	1976E:	$4.70	5.4X
				1975A:	$3.48	
Shares Outstanding:		11.5 million*		Return on June 1976 Equity:		21.8%*
Market Value:		$286 million		Book Value Per Share 6/30/76:		$21.11*

*Pro-forma for Cotton Merger

SUMMARY

United Energy Resources, formerly United Gas Pipe Line, has just acquired Cotton Petroleum through the issuance of 0.75 shares of United for each share of Cotton, an acquisition value of $36.6 million. The earnings, shares, ROE and book value above reflect the pro-forma results. Cotton, which will now operate as a subsidiary of United Energy, is engaged in oil and gas exploration, development and production. In addition, it operates or owns interest in 600 oil and gas wells, owns interest in 62,000 net undeveloped acres and also organizes and manages oil and gas drilling programs. Another subsidiary, United Gas Pipe Line, is an interstate transmission system which owns 100% of United Texas Transmission, an intrastate pipeline in southeast Texas, and a 50% interest in Sea Robin Pipeline, an offshore pipeline system in the Gulf of Mexico.

United's pipeline operations are projected to have a large positive cash flow over the next few years that would tend to reduce its leverage significantly, barring acquisitions. The acquisition of Cotton, however, will bring to United a full exploration staff and opportunities to better utilize the cash flow. Cotton, in turn, will benefit from its affiliation with United by gaining access to a solid future cash flow at a time when tax law changes are reducing the appeal of drilling programs, formerly Cotton's primary source of funds. On a pro-forma basis 8% of earnings will come from Cotton's operations in 1976. This portion should increase to 10% in 1977 and grow further in the years beyond.

Currently, natural gas transmission companies are selling at 8.5 times earnings and yielding about 5.1%. United, at only 5.0 times 1977 estimated earnings, is selling on a 5.2% yield basis, but on a dividend that represents a payout of only 29% versus an average pipeline industry payout ratio of 41%. The uncertainties associated with pending litigation resulting from gas delivery curtailments beginning several years ago and the interstate

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pipeline systems' low inventory of gas reserves are largely responsible for UER's low P/E. We believe UER, at 5.0 times our 1977 estimate, is adequately discounting the legal contingencies and the low reserves/production ratio and consider it attractive for investors seeking reasonable yie' '5.2%) together with the possibility of above average dividend increases as more suitable payout ratios are achieved and modest earnings growth materializes.

THE COMPANY

United Gas Pipe Line (50% of pro-forma earnings), which was spun off to Pennzoil shareholders in 1974, is an interstate pipeline that transports gas gathered in the Texas and Louisiana Gulf Coast areas for resale to distributors in the Gulf South, to other pipelines or direct to users. In 1975, United sold 872 Billion Cubic Feet of gas and transported 51 BCF for others. Of these gas sales, 541 BCF (62%) were to other pipelines, 192 BCF (22%) were to distribution systems for resale to the public and the balance were direct sales to industry for use. United Gas Pipe Line purchases its entire gas supply from independent producers. Reserves dedicated to the system at the beginning of 1976 amounted to 4.3 Trillion Cubic Feet which represented a reserve life index of only 4.9 years. United Gas Pipe Line is attempting to rebuild the reserves and appears to have three major prospects for near-term success. First, advance payments have been made to producers in return for the right to purchase their gas production; second, as part of the divestiture agreement from Pennzoil, United has the right to purchase most new gas developed by Pennzoil and/or its affiliates; and, third, United has a 20% interest in the HIOS line which, when completed in late 1977, will provide access to gas being developed in offshore Texas areas. United is also exploring possibilities of purchasing Alaskan Gas or importing LNG for use in the system in the 1980's. Earnings improvement over the near-term, however, will be limited to those produced by the company's ability to obtain rate increases from the F.P.C. to maintain earnings on level or declining sales volumes and the ability to maintain direct sales volumes. A $21 million rate increase became effective October 9, 1976.

The intrastate system, **United Texas Transmission** (32% of pro-forma earnings), gathers and resells gas wholly within Texas. In 1975, 251 BCF of gas was sold and 79 BCF was transported for others. Of 1975 gas sales, 113 BCF was to Houston Lighting & Power for electric generation and 73 BCF was to Entex for resale to high priority gas consumers; the remaining 26% was sold to industrial customers in the Gulf Coast for their own use. United Texas sales volumes have continued to rise (since intrastate gas supplies are in surplus) and the system's reserves/production ratio is about 10.4 years based on 1975 year-end reserves of 2.6 TCF. Earnings of the intrastate system have improved over the past two years as a result of upgrading direct sales contracts from fixed price to price plus cost of gas; however, since almost all contracts have now been renegotiated, earnings may flatten out beyond 1976 unless additional sales or transportation contracts can be negotiated.

Offshore Pipelines: (11% of pro-forma earnings) Sea Robin, which is 50% owned with Southern Natural Gas, operates an interstate pipeline system in the Gulf of Mexico offshore Louisiana. Sea Robin has a capacity of 1.2 BCF per day and, in the first half of 1976, operated at 792 Million Cubic Feet per day (66% of capacity). Sea Robin provided 16% of United's interstate system supply in 1975. Sea Robin, in conjunction with the HIOS and UTOS systems to be completed late in 1977, will give the interstate system access to those several leases on which United has made advance payments and to those blocks being developed by Pennzoil

and its affiliates. Sea Robin earnings will hold about level but earnings from HIOS and UTOS will boost offshore pipeline EPS in 1976 ($3 million tax credit) and in 1977 ($6 million tax credit).

Cotton Petroleum: (7% of pro-forma earnings) is engaged in oil and gas exploration, development and production and is also in the business of organizing and managing oil and gas drilling programs. Most recently, oil and gas sales contributed 83% of revenues while management fees, service charges and other income sources provided the balance. Daily average production rates for the first half of 1976 were 1,464 barrels of oil and 15.7 MMCF of gas, the prices for which were $10.56 per barrel and $0.86 per MCF, respectively, at mid-year. At August 1, 1976, oil and condensate reserves amounted to 3.34 million barrels of oil and condensate and 56.1 BCF of gas. At a valuation of $3.50 per barrel and $0.50 per MCF, these reserves equal about $40 million. Cotton's earnings have improved recently owing primarily to increased oil and gas production (and somewhat to higher prices) deriving from growing success of the exploration activities related to its drilling programs. Cotton's revenues and income for the past five years are summarized below.

COTTON PETROLEUM

OPERATING RESULTS

	1971	1972	1973	1974	1975	6 Months 1976
Average Daily Production:						
Crude Oil & Condensate (Bbls.)	380	785	825	1,010	1,349	1,464
Natural Gas (Mils. Cubic Feet)	3.2	8.7	11.1	12.9	15.0	15.7
Revenues (Mil.)						
Oil & Gas Sales	$0.62	$1.48	$2.50	$4.61	$7.15	$4.43
Other	0.41	0.44	0.62	1.18	1.75	0.93
Total	$1.03	$1.92	$3.12	$5.79	$8.90	$5.36
Income from continuing operations before extraordinary items (mil.)	$0.11	$0.35	$0.73	$1.58	$2.77	$1.75

EARNINGS

Following is a summary of the earnings of each division as derived from the Cotton/United merger prospectus for the 12 month results through September 30, 1976 together with our estimates of 1976 and 1977 earnings.

COMBINED PRO-FORMA EARNINGS RESULTS

	12 Months September 30, 1976		Estimated Earns. Per Share	
	Net Income (mil.)	Earns. Per Share	1976	1977
United Gas Pipeline	$26.64	$2.32	$2.35	$2.35
United Texas Transmission	16.80	1.46	1.45	1.50
Offshore Pipeline Systems	5.66	0.49	0.50	0.75
Cotton Petroleum	3.71	0.32	0.40	0.50
Total	$52.81	$4.59	$4.70	$5.10

FINANCES

Capital spending by the United system will probably amount to $40 million in 1976 compared with internal generation of $82 million consisting of $40 million from retained earnings, $35 million of depreciation and $7 million of deferred taxes. Rather than reduce leverage, United will now have a staff of highly competent geologists and exploration experts to profitably invest the cash flow in the exploration for new oil and gas reserves and thus help diversify UER's operations.

CAPITALIZATION 6/30/76

Pro forma for Merger

	Amount (Mil.)	Ratio
Short-Term Obligation	$ 12.4	2.7%
Long-Term Debt	199.4	43.9
Preferred Stock	None	-
Common Equity	242.1	53.3
Total	$453.9	100.0%

DIVIDENDS

After being spun-off from Pennzoil in March 1974, United paid its initial dividend of $0.15 on July 1, 1974, an annual rate of $0.60. The payment was boosted 20% to $0.72 on July 1, 1975 and 83% to $1.32 on April 1, 1976. The present rate represents a payout of 29% of current EPS of $4.59 per share; the average pipeline industry payout is 41%. We see no reason why UER should not, eventually, payout about the same percentage of earnings as other gas pipelines with their own production and look for another dividend increase in 1977.

LITIGATION

United is a defendent in several lawsuits alleging damages resulting from forced curtailments of natural gas deliveries and alleged violations of antitrust laws. United's counsel believes that applicable judicial decisions, F.P.C. orders, tariffs and contracts, and industry practices should furnish adequate defenses to the claims for damages. However, the ultimate outcome cannot be determined and investors in UER should be cognizant of the uncertainties created by the lawsuits which, together, request damages aggregating $1.15 billion.

RR-76-181 —Research Department—

Within the last three years we managed offerings of 50 million debentures.

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White, Weld & Co. Incorporated

Progress Report

A. Hager Bryant, 3rd
(212) 285-2696

January 10, 1977

TEXAS GAS TRANSMISSION (TXG)

Price (NYSE)		Dividend		EPS (Dec.)		P/E
Current:	47	Rate:	$2.00	1977E:	$6.50	7.2X
Range (1976-77):	49-29	Yield:	4.3%	1976E:	$5.65	8.3X
				1975:	$4.39	–
Shares Outstanding:		10.3 Million		Return on Avg. 1975 Equity:		14.2%
Market Value:		$484 Million		Book Value Per Share (9/30/76):		$37.34

SUMMARY

Based on a recent review of the company's operations with management, we are raising our earnings estimates for Texas Gas from $5.45 to $5.65 for 1976 and from $5.70 to $6.50 for 1977. The principal areas of change are in the gas pipeline division (to reflect the tax credit and allowance for funds related to HIOS) and the trucking division (to reflect the acquisition of All-American Transport on October 1, 1976).

Natural gas pipelines in general are currently selling about 7.5 times estimated 1977 earnings; however, natural gas producers sell at higher P/E's than the general market while major trucking companies are priced at 8-9 times current EPS with higher earnings expected in 1977. On the basis of the trucking (TXG is now one of the ten largest truckers in the U.S.) and pipeline operations, together about 54% of earnings, TXG appears appropriately priced. There are no valid market comparisons for TXG's inland waterways division. However, in comparison with gas producers, TXG appears slightly behind the market. Accordingly, we rate TXG a strong hold in growth oriented accounts and suitable for purchase by investors seeking some yield and good dividend growth.

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NATURAL GAS TRANSMISSION (41% of 1976 earnings)

TXG sold or transported 672 billion cubic feet of gas in 1975, down 15.7% from peak deliveries in 1972. For 1976, the available gas supply is projected at 624 BCF of which 6% will be system produced gas, 35% purchased from onshore fields, 35% from offshore producers and the remaining 24% from other pipelines. For 1977, the addition of new gas supplies from several offshore blocks should help offset delivery curtailments from onshore sources and from other pipelines resulting in level volumes for the first time since 1972. Volumes are projected to hold at 1976 levels or slightly above through the remainder of the 1970's, especially after the HIOS line connects additional offshore Texas production in late 1977 or early 1978.

An F.P.C. rate increase collected since April 1, 1976 has been settled with a 13% return on a $174 million equity base which equates to $22.7 million earnings or $2.20 per share. Additional earnings in the pipeline division will be generated by the 10% investment tax credit on TXG's $70 million share of the $353 million High Island Offshore System (HIOS) scheduled for completion by early 1978 and by the allowance for funds used during the construction of HIOS; together these two items are expected to add close to $0.20 per share to earnings in 1976, $0.85 in 1977 and $0.10 in 1978. HIOS will be accounted for on an equity basis.

OIL & GAS EXPLORATION AND PRODUCTION (22% of 1976 earnings)

At the end of 1975, Texas Gas Exploration's reserves amounted to 280 BCF of gas and 9.7 million barrels of condensate and crude oil; assigning a conservative valuation to these reserves of $0.35 per MCF and $3.00 per barrel, the asset value equates to about $12 per share. In 1975, Exploration sold 36.7 BCF of gas (mostly old gas), 1.1 million barrels of oil and 175 million gallons of liquids (at F.E.A. controlled prices). Commencement of deliveries of gas from Ship Shoal Blocks 247 and 271 in the second quarter 1976, from Vermilion Block 256 in the third quarter 1976 and from Eugene Island Block 292 sometime around mid-1977 should boost gas production to over 40 BCF in 1976, between 45–50 BCF in 1977, and over 55 BCF by 1978. Oil production should be about level in 1976, but the addition of Eugene Island Block 292's oil output of 1,000 BPD in November, 1976 will hike 1977 oil production by over 25%. The higher production of oil and gas coupled with higher gas prices of $1.44 per MCF authorized by F.P.C. Order 770-A should help boost earnings significantly.

INLAND WATERWAYS (24% of 1976 earnings)

Coal remains the major commodity carried by the barging operation followed by grains downriver and liquids upriver. Earnings in the first half 1976 benefitted from the absence of flooding conditions although second half earnings were depressed owing to shallow water levels and narrow channels (a result of dry weather in the upper midwest) which reduced the size of the tows. For 1977, barging earnings could be up modestly given a return to normal river conditions although Jeffboat, the shipbuilding affiliate, may show some weakness as less of its output will be sold to other barge operations.

TRUCKING (12% of 1976 earnings)

The addition of All-American Transport on October 1, 1976 makes Texas Gas one of the ten largest trucking concerns in the U.S. The AAT acquisition will be treated as a pooling of interest and its contribution to earnings should amount to about $0.40 per share. The acquisition is antidilutive in that net income for the first nine months of 1976 equated to $4.77 for each of the 650,000 TXG shares issued versus $3.88 for TXG for the same period.

Terminal Transport earnings are sharply ahead of last year because of the recovering economy and new management techniques established earlier this year. Further improvement is foreseen in 1977 assuming an up economy. Commercial Carriers is also up sharply in line with the stronger auto output versus last year; however, in view of the recent slowing of the growth in auto sales, we are expecting only level earnings through 1977.

CAPITAL SPENDING

Outlined below are capital outlays by division through 1976 together with our estimated spending for 1977 and 1978:

CAPITAL SPENDING
(Millions)

	1974	1975	1976E	1977E	1978E
Pipeline	$21.1	$19.9	$14	$ 15	$ 15
Waterways	21.7	17.9	32	35	30
Trucking	15.2	3.1	10	12	10
Expl. & Prod.	23.6	22.7	35	45	50
Total	$81.6	$63.5	$91	$107	$105

The HIOS line will be built and financed as an independent pipeline and therefore does not appear in the capital expenditures forecast. The barging operation's terminal for coal to be received from Burlington Northern starting in 1979 will cost about $26 million and is spread $7 million in 1976, about $10 million in 1977 and the rest in 1978.

FINANCING

Texas Gas accomplished the following financings in 1976:

a. $28.5 million private placement loan agreement with insurance companies to finance advance payments.

b. $37.8 million U.S. Gov't Guaranteed Ship Financing Bonds to finance barges and towboats.

c. $50.0 million Debentures for the acquisition of additional gas supplies and repayment of short-term obligations.

For 1977 we project retained earnings at $35 million, depreciation at $63 million and deferred taxes of $25 million for total internal generation of $123 million excluding cash on hand from the 1976 financings. The $107 million capital outlays plus $25 million sinking fund and debt maturity needs will about match the internal funds. No major external financing is anticipated other than another ship financing issue of about $40 million to further reduce short-term borrowings.

CAPITALIZATION
(9/30/76)

	Amount (mil.)	%
Short Term Obligations	$ 26.7	3.8%
Long Term Debt	323.7	46.0
Preferred Stock	10.5	1.5
Common Equity*	342.2	48.7
Total	$703.1	100.0%

* Includes $2.7 million Convertible Preference Stock

EARNINGS

Outlined in the following table is our forecast of TXG earnings by division. For 1977 the two main sources of the estimated $0.85 EPS increase are in the gas pipeline area ($0.46 per share) and oil and gas production ($0.45 per share). The gas pipeline earnings increase is based on the investment tax credit and AFUDC associated with HIOS and are not *true* earnings entitled to a full P/E multiple valuation. For 1978, only a modest 3% earnings improvement is forecast since the disappearance of a portion of the HIOS items will offset gains in oil & gas production and waterways. Over the longer term, pipeline earnings growth will be modest, trucking earnings about in line with the economy, waterways should grow faster than the economy owing the incremental growth of coal hauling and the appeal of this inexpensive shipping mode, and oil & gas production growth should continue well above average as long as the energy shortages persist.

QUARTERLY EARNINGS PER SHARE BY DIVISION

	Gas Pipeline	Oil & Gas	Waterways	Trucking Division: Comm'l Carriers	Trucking Division: Terminal Transp.	Trucking Division: AAT	Total Company
1974							
1Q	$ .51	$ .39	$ .20	$ .03	$ .05	–	$1.18
2Q	.47	.39	.39	.03	.10	–	1.3
3Q	.44	.34	.21	–	(.01)	–	.99
4Q	.62	(.06) [a]	.32	–	.02	–	.93
Yr.	$2.05	$1.03	$1.13	$ .08	$ .16	–	$4.45
1975							
1Q	$ .63	$ .21	$ .31	$ (.03)	$ (.03)	–	$1.09
2Q	.33	.25	.34	.01	.01	–	.94
3Q	.32	.30	.31	(.02)	.01	–	.93
4Q	.73	.35	.32	.08	–	–	1.48
Yr.	$2.02	$1.06	$1.28	$ .03	–	–	$4.39
1976[c]							
1Q	$ .75	$ .27	$ .38	$ .03	$ .02	$ .08	$1.53
2Q	.56	.26	.48	.06	.05	.09	1.50
3Q	.18[b]	.32	.26	–	–	.14	.90
4Q E	.85	.40	.25	.07	.05	.10	1.72
Yr.	$2.34	$1.25	$1.37	$ .16	$ .12	$ .41	$5.65
1977E							
1Q	$ .80	$ .40	$ .35	$ .05	$ .05	$ .10	$1.75
2Q	.65	.40	.40	.05	.05	.10	1.65
3Q	.45	.45	.25	–	.05	.10	1.30
4Q	.90	.45	.25	.05	.05	.10	1.80
Yr.	$2.80	$1.70	$1.25	$ .15	$ .20	$ .40	$6.50
1978E							
1Q	$ .85	$ .45	$ .40	$ .05	$ .05	$ .10	$1.90
2Q	.65	.45	.40	.05	.05	.10	1.70
3Q	.35	.50	.30	–	.05	.10	1.30
4Q	.80	.50	.30	.05	.05	.10	1.80
Yr.	$2.65	$1.90	$1.40	$ .15	$ .20	$ .40	$6.70

[a] Includes ($0.42) non-recurring year-end adjustment.

[b] Includes ($0.15) non-recurring reserve set up for possible coal gasification plant write-off.

[c] Based on 10.3 million shares outstanding throughout the year.

DIVIDENDS

During the five years 1971 to 1975 the payout ratio averaged 43% and the dividend was raised annually effective with the June 15th payment. The present $2.00 rate represents a payout of only 35% of our estimated 1976 earnings and 31% of our 1977 estimate. We believe the payout ratio may trend back toward 40% gradually and that an increase to $2.20-2.36 effective in June, 1977 is possible.

VALUAT'ON

Assig ning a P/E multiple to Texas Gas is difficult because there are few comparable b.rging co npanies; however, we have outlined possible multiple values in the following formula:

TEXAS GAS VALUATION

Division	Est. 1977 EPS		P/E Value		Worth
Pipeline	$2.80	x	6.5	=	$18.20
Oil & Gas	1.70	x	11.0	=	18.70
Waterways	1.25	x	8.0	=	10.00
Trucking	0.75	x	7.0	=	5.25
Total	$6.50	x	8.0	=	$52.15

Despite the recent move in the price of TXG we feel the company remains a hold at current levels for growth oriented investors and is suitable for purchase if some yield and good dividend growth is desired.

TEXAS GAS INSTITUTIONAL OWNERSHIP

Category	Number	Shares Held	% Outst. Shares
Banks*	21	1,035,647	10.1%
Investment Cos.*	16	817,200	7.9%
Insurance Cos.**	33	482,260	4.9%
Total	70	2,335,107	22.7%

Source: *Spectrum
**A.M. Best

RR-77-9

–Research Department–

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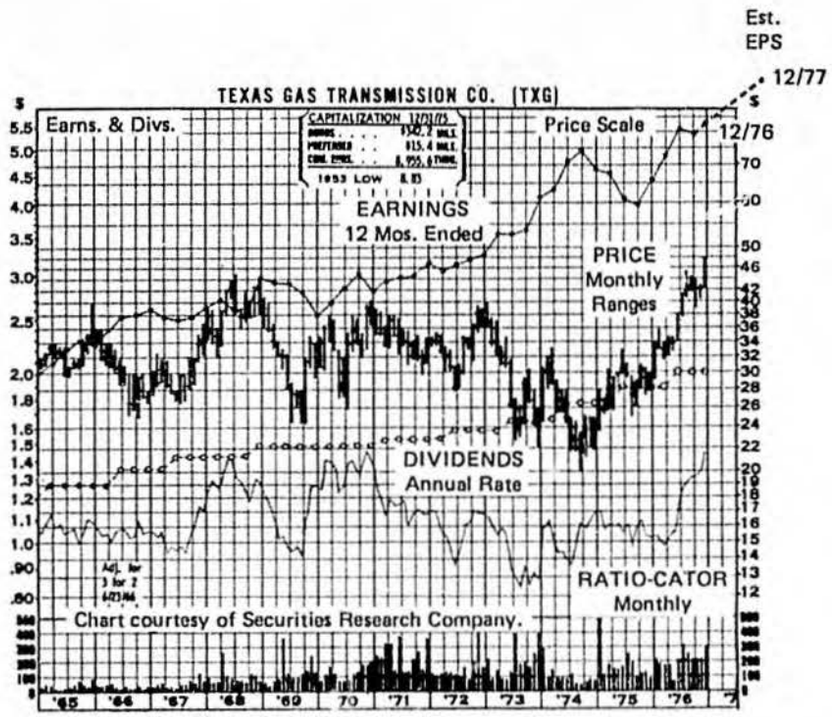
TEXAS GAS TRANSMISSION CO. (TXG)
Earns. & Divs.
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Est. EPS 12/77
12/76
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Ranges
DIVIDENDS
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Thomas C. Pryor
Executive Vice President (212) 285-2666

Harold W. Janeway
Director of Investment Policy (212) 285-2060

Jerome P. Kenney
Director of Research (212) 285-2020

Richard A. Kimball
Director of Marketing (212) 285-2374

Frank J. Ritger
Senior Vice President (212) 285-2120

A. Gary Shilling
Chief Economist (212) 285-2670

Basic Industries

George H. Cleaver	Metals & Mining	(212) 285-2012
Frederic S. Coffman, Jr.	Forest Products, Paper	(212) 285-2748
Betty M. Fagan	Pollution, Publishing, Capital Goods	(212) 285-2054
F. Robert Mayforth	Chemicals, Environmental Controls	(302) 656-7741
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John A. Jensen, Jr.	Consumer Products, Household Products	(212) 285-2074
Brenda Lee Landry	Photography, Cosmetics, Household Products	(212) 285-2080
Milton Schlackman	Consumer Electronics, Air Conditioning, Appliances	(212) 285-2024
Daniel E. Somers	Beverages, Fast Food, Lodging	(212) 285-2076

Energy

A. Hager Bryant, 3rd	Gas Pipelines and Distribution	(212) 285-2696
Philip L. Dodge	Oil, Gas	(212) 285-2043
John H. Hayward, Jr.	Oil Services & Related	(212) 285-2032
John L. Kalmbach	Natural Gas, Resources, Diversified	(212) 285-2065
Richard L. Davisson, Jr.	Oil Consultant	(617) 482-7767

Financial Services

A. James Donohue	Banks, S&L's, REIT's, Mortgage Insurers, Misc. Real Estate	(212) 285-2010

Health Care

Michael M. Harshbarger	Drugs	(212) 285-2698
L. John Wilkerson	Hospital Products	(212) 285-2695

Market Analysis

H. Carroll Mackin	Computer Support–Performance Monitor	(212) 285-2056
Peter J. Canelo	Computer Support–Performance Monitor	(212) 285-2256
John A. Mendelson	Technical Analyst	(212) 285-3753

Technology

Stover L. Babcock, Jr.	Special Situations	(212) 285-2026
James C. Blair	Computers, Office Equipment	(212) 285-2045
Craig W. Fanning	Electrical Equipment	(212) 285-2030
Anthony G. Langham	Instrumentation, Semiconducters	(212) 285-2047
Jack K. Smith	Computers	(302) 656-7741

Utilities

Marjorie M. Jones	Electric, Telephone	(212) 285-2040
Edward A. Pescatello	Electric, Telephone	(212) 285-2066

Support Services

Emily K. Baldt	Research Assistant	(302) 656-7741
Jeanne M. Gallagher	Editor	(212) 285-2075
Robert Margolis	Art Director	(212) 285-2319
Ellen L. Miller	Librarian	(212) 285-2085
Mary M. Rieser	Assistant to Director of Research	(212) 285-2020
Ann T. Stott	Institutional Marketing	(212) 285-2064

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Basic Report

BUY RECOMMENDATION
January 10, 1977

A. Hager Bryant, 3rd
(212) 285-2696

FLORIDA GAS COMPANY (FLG)

Price (NYSE)		Dividend		EPS* (Dec.)		P/E
Current:	20 3/8	Rate:	$1.00	1977E:	$2.75	7.4X
Range (1976-77):	21-14	Yield:	4.9%	1976E:	$2.50	8.2X
				1975:	$2.31	–
Shares Outstanding:		6.37 Million		Return on Avg. 1975 Equity:		11.1%
Market Value:		$130 Million		Book Value Per Share (9/30/76):		$24.40

*Fully Diluted

SUMMARY

Florida Gas is gradually changing from a pure natural gas pipeline and distribution company into an oil and gas producer with land operations and, possibly, a petroleum products pipeline. The success of an early diversification move into land development was hampered by the collapse of the Florida land market, although the market value of the properties still exceeds their cost; the Florida real estate market is finally beginning to recover, and proceeds from land sales can be used to develop future oil and gas production prospects. The company's oil and gas exploration program has been uncommonly successful in its early phases both offshore and onshore and production is just becoming a major earnings factor. Earnings declined 15% from the first quarter 1975 to the first quarter 1976 as a result of lower volumes of wet gas passing through the hydrocarbon extraction plant and a foreign exploration write-off. This contraction is now fully reflected in results and per-share earnings growth has resumed. Furthermore, the dividend is likely to be raised (probably 10% to a $1.10 rate), effective with the June, 1977 payment.

At current prices, FLG is yielding 4.9% and selling at 7.4 times 1977 estimated EPS based on a market price of only 84% of book value. Other gas pipeline companies typically offer similar yields and sell about the same multiple but are priced at 25-30% over book value. Despite the recent strength of FLG and the rest of the natural gas pipelines we believe Florida Gas is an attractive purchase for growth oriented investors for the following reasons:

a) the company's base is a solid natural gas pipeline whose volume deliveries will be turning up again starting in 1977;

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b) a recovering real estate market for Florida land holdings should allay fears of possible writedowns and help boost the market-to-book ratio closer to industry norms;

c) continued success in the oil and gas exploration and production area could gradually move the P/E valuation toward the multiples generally accorded oil and gas producers;

d) a major oil or gas discovery could be more significant to FLG than to most other pipelines owing to the leverage of a small number of shares;

e) longer term earnings growth should average at least 10% annually; and

f) consistent annual dividend increases are expected in line with or faster than earnings growth.

THE COMPANY

Florida Gas' principal earnings source is Florida Gas Transmission, a natural gas pipeline stretching from the Rio Grande Valley of South Texas to Miami, Florida. Also, retail natural gas distribution systems are operated in Miami, Jacksonville, Orlando-Winter Park, St. Petersburg and Daytona.

Diversification activities are concentrated in three principal areas; extraction of liquid hydrocarbons from the pipeline stream; land development in Central Florida; and oil and gas exploration, development, and production. An additional proposal calls for conversion of a portion of the existing gas transmission line into a petroleum products pipeline. Outlined in Table 1 is a breakdown of 1975 divisional results.

Table 1

DIVISIONAL BREAKDOWNS

	1975		Earnings Before Interest & Taxes 1975			
	Revenues (mil.)	Margins	Total (mil.)	% of Total	1976E (mil.)	1977E (mil.)
Pipeline	$101.5	36.7%	$37.2	79%	$39.0	$40.5
Distribution	27.4	13.6	3.7	8	4.5	5.0
Hydrocarbons	13.8	42.5	5.8	12	2.0	1.0
Land	0.9	N.M.	(0.9)	(2)	(0.5)	–
Oil & Gas	4.7	28.5	1.3	3	3.0	5.0
Other	(20.8)*	N.M.	(0.1)	–	(0.5)	(0.5)
Total	$127.5	36.9%	$47.0	100%	$47.5	$51.0

* Includes intercompany eliminations

N.M. --Not meaningful

OPERATIONS

Natural Gas Pipeline Division – (79% of 1975 EBIT–Earnings Before Interest & Taxes)

The entire natural gas pipeline industry until recently has been suffering from a common problem: diminishing supplies of natural gas, the result of restrictive F.P.C pricing practices which have discouraged the search for and development of new gas sources. Although the recent move of the F.P.C. toward higher prices at the wellhead will certainly stimulate increased interest in exploring for natural gas, the possible refund liability still serves to discourage the commitment of new reserves to interstate markets. Until deregulation legislation is proposed by President-elect Carter and enacted by Congress, the prospect of natural gas shortages may continue to plague the industry.

Florida Gas Transmission, incorporated in 1957, is a natural gas pipeline system which extends from the Rio Grande Valley of South Texas to a point 20 miles south of Miami, Florida traversing the States of Texas, Louisiana, Mississippi, Alabama and Florida. The pipeline provides the only natural gas service available in peninsular Florida and serves 33 gas distribution systems and 40 industrial customers. Because of the mild winters and absence of hefty heating loads, the primary markets are commercial and industrial consumers. The largest customer group is twelve electric generating systems of which Florida Power & Light and Florida Power Corp. are the biggest. Gas distribution utilities are the next largest followed by food processors, FLG's liquids extraction plant, pulp and paper plants, and citrus processors.

At the end of 1975 Florida Gas Transmission had 1.34 trillion cubic feet of natural gas dedicated to its system under long-term purchase contract, equal to a reserves/production ratio of 11.2 years based on 1975 sales of 120 billion cubic feet. During 1975 only a small portion of the gas sold was replaced with new reserves and deliverability diminished, a trend expected to be reversed after 1976, since new offshore production committed through its exploration efforts will result in a higher natural gas delivery level.

In 1975, 222 billion cubic feet of gas were delivered to Florida by the pipeline system, including 124 BCF under transportation contracts with Florida Power & Light and Florida Power Corp., 72 BCF sold to distribution utilities for resale, and 26 BCF sold directly to industrial customers for their own use. (Twenty-one BCF were also sold in Texas or Louisiana or used by the system.) Gas sales for industrial use are made on an interruptible basis and curtailments of these deliveries enables the pipeline to meet peak firm requirements.

Table 2

NATURAL GAS SALES VOLUMES

	Trillions of BTU					% Change
	1974	1975	1976E	1977E	1978E	1976 to 1978
Distribution System	23	23	24	26	27	12.5%
Pipeline System						
For Resale	51	49	51	55	58	13.7
For Use	54	26	11	9	6	(45.5)
Transportation Deliveries	124	124	124	124	124	–
Company Use & Other	37	21	9	9	9	–
Total	288	243	219	223	225	2.7%

Most new supplies of pipeline gas will be produced from offshore acreage and as offshore production increases, higher gas deliveries appear likely in the late 1970's. The first major volumes from offshore began flowing in early 1976 from Grand Isle Block #76 in which Florida Gas Exploration has a small working interest.

Until recently, Florida Gas Transmission had several overlapping rate cases pending before the Federal Power Commission; however, a settlement agreement with customers and the F.P.C. staff was reached in the summer of 1976 which will resolve all pending rate matters when finalized by the F.P.C.

As a result of revenue increases, gas transmission earnings were up slightly in 1974 and again in 1975. A rate increase, effective April 15, 1976 included in the recent settlement was designed to provide a 13% return on equity and helped improve earnings in 1976 while in 1977 pipeline income will rise to record levels helped by higher volumes.

Gas Distribution Operations – (8% of 1975 EBIT)

Systems which distribute natural gas at retail to residential, commercial and small industrial consumers are operated by FLG in Miami, Jacksonville, Orlando-Winter Park, St. Petersburg, Daytona, Lakeland and several smaller communities. Together, these systems purchase about one-third of the pipeline system's sales for resale. At year-end 1975, the distribution system was serving about 92,000 customers with natural gas while 9,000 potential customers located beyond the present limits of the distribution lines were served with bottled gas. A warm 1975 winter heating season produced a revenue increment insufficient to offset inflated operating costs and 1975 distribution earnings were down about 16%. The 1976 winter season was slightly colder than normal and this, coupled with a $2.6 million rate increase in August, 1976, should produce a sharp recovery (up 22%) in earnings. For 1977, we anticipate another good earnings improvement (up 10%) under normal weather patterns owing to carry-over benefits of the rate increases, cold weather to date, and somewhat higher volumes of gas.

Oil & Gas Operations – (1% of 1975 EBIT)

The direction of future corporate development is best outlined by Florida Gas' capital expenditures (see Table 4) that suggest management believes its most promising future earnings prospects lie in oil and gas production. Net investment in this sector totaled approximately $40 million at the end of 1975, of which $29 million was invested in offshore and $11 million in onshore properties. Despite the success of the exploration programs to date, oil and gas operations continued to show a loss through 1975 because development of the fields has been slow, and overhead and interest costs are expensed. However, the contributions to earnings are expected to develop rapidly as more of the newly discovered fields come into production. Florida Gas Exploration, a subsidiary of Florida Gas, is financed independently of Florida Gas Transmission, the pipeline, and hence, all profits flow to the stockholders. Oil and gas earnings before interest and income taxes should rise rapidly from $1.3 million in 1975 and an estimated $3.0 million in 1976 to a projected $5.0 million in 1977 and $8.0 million in 1978.

In the onshore area, four exploration programs are operated: one in New Orleans; one in Jackson, Mississippi; one in Houston, Texas; and the newest in Midland, Texas. During 1976, Florida Gas participated in 28 wildcat wells (12 successful) and 19 development wells (12 completed as producers.) Efforts in Southern Louisiana have been very successful in locating oil and gas reserves, and results have been exceptional in Mississippi, where FLG has discovered several significant new gas fields. Production from onshore discoveries has been growing for the past two years and is now at a daily rate of about 400 barrels of oil and 12 million cubic feet of gas.

Table 3

OIL AND GAS EXPLORATION AND DEVELOPMENT

			Estimate		
	1974	1975	1976	1977	1978
Daily Production Rate (Year-End)					
Oil (barrels)	250	325	400	500	600
Gas (Million of Cubic feet)	6.3	10.9	21.0	30.0	40.0
Proved Reserves (all Onshore)					
Oil (000 barrels)	457	521	–	–	–
Gas (Billions of Cubic feet)	20.8	20.7	–	–	–

In the offshore area, Florida Gas has interests in fifteen prospects for which it paid $23.4 million. Seven of these leases located offshore Florida with a cost of $3.8 million were abandoned and put into the full cost accounting pool early in 1975. FLG has usually participated in offshore lease activities in partnership with Shell Oil. Presently the most promising offshore exploration areas are:

1) Grand Isle Blocks 75 and 76, where FLG has a 12.5% working interest and a call on 50% of all gas. Natural gas production began in April 1976 and is running about seven million cubic feet per day.

2) Vermilion Block 22, in which Florida Gas has a 4.17% working interest and a one-sixth call on gas, is scheduled to begin production around mid-1977; and

3) the Cognac Prospect (which cost the Shell group $214 million) in which FLG has a 4.17% working interest and a call on 25% of any gas found.

Consideration was given to selling the Cognac Prospect because of the large capital investment but it retained its interest and was rewarded when the promising seismic data was confirmed by the discovery of several feet of oil and gas bearing sands in the first four wells. Cognac is an exciting development based on its prospects for major earnings contributions for FLG shareholders as well as being a potential long-range gas supply source. A drilling platform the height of the Empire State Building has been ordered for Cognac, one of the deepest water prospects in the Gulf of Mexico, and production should begin in 1979. Various estimates of probable Cognac reserves indicate that Cognac is a significant oil and gas discovery.

Land Development – (minus 2% of 1975 EBIT)

Florida Land Company, the company's land subsidiary, now has most of the 1974 and 1975 problems behind. Demand for housing was weak due to overbuilding, inflation, and high interest rates; however, a dramatic curtailment of building activity has reduced housing inventories and a positive recovery is underway. The land development properties of Florida Gas are well situated to participate in the longer term growth of Central Florida, especially the growth that may be derived from Walt Disney World's proposed new World Trade Exposition schedule for operation in 1980. The Exposition would increase Disney employees from 13,000 to 29,000 by 1985 and support an increase in attendance from 12 million in 1975 to an estimated 22 million in 1980, 25 million in 1985, and 30 million by 1990. These land holdings are a valuable asset, but a sustained improvement in Florida's residential construction industry is necessary before an earnings contribution can be realized. Management considers the present near-term growth prospects insufficient to justify further major capital investments in land development and intends to gradually reduce its total $45 million investment in this area. The Company is unlikely to undertake any new development projects and may, in fact, use the cash flow generated by property sales as a source of funds for future oil and gas exploration activities. Sales of the various parcels are not likely to produce material losses. The five major properties in which Florida land currently has interests are:

Orangewood, a 4,500-acre development located between Orlando and Disney World where two major tourist attractions, Sea World and the Stars Hall of Fame, bought land and are developing their activities. Florida Land has completed development of its first commercial and residential section and further development will be undertaken when a stronger recovery in the land market becomes evident.

Winter Springs, a 2,250-acre venture northeast of Winter Park has been developing and selling lots to builders for four years. Half the project has been sold.

Greenwood Lakes, is a 1,500-acre development north of Orlando. Further development has been deferred until a pickup in land operations begins. A new NCR plant has just started operations adjacent to Greenwood Lakes and will employ some 1,500 workers.

Sugar Mill, is a new golf resort community located near New Smyrna Beach, north of Cape Kennedy. Several lots adjoining an appealing golf course have been laid out, and construction is underway or completed on nearly fifty townhouse villas which have sold well.

University Park, is a 450-acre development near Orlando across from Florida Technological University which commenced operations in 1970 and has grown remarkably since. The property has been zoned primarily for garden-type apartments and condominiums to be used by or rented to students and faculty. The property is being held for future development although one tract has been sold.

Hydrocarbons – (12% of 1975 EBIT)

Florida Hydrocarbon's natural gas liquids extraction plant at Brooker, Florida processes the pipeline system's mainline gas stream, removes liquid hydrocarbons and redelivers the gas

stream to the pipeline. The liquid hydrocarbons are then processed into propane, butane and natural gasoline; a blending facility produces motor fuel. With the connection to the pipeline system of new gas supplies from the Jay Field in northwest Florida in 1972, the liquid hydrocarbons in the gas stream increased substantially, resulting in significantly greater liquids output. Following the start of our nations' energy crisis in late 1973, prices for extracted products rose sharply and operating earnings rose from less than $1.0 million in 1972 to over $12.0 million in 1974. The Jay Field producers, however, started operating field extraction facilities in May, 1975, and the extraction of liquid hydrocarbons has since declined from a peak annual rate of 109 million gallons in 1974 to the present annual rate of about 32 million gallons.

Production volumes may decline gradually in the future as new gas reserves attached to the pipeline system are delivered in a dry form, the liquids already having been extracted by the vendor, and earnings may decline further from $2.0 million expected in 1976 to $1.0 million in 1977 and beyond. However, the energy shortage has boosted prices for extracted products and over the longer-term, earnings should remain positive.

TransGulf Pipeline —(Potential new earnings source)

The natural gas transmission system is operating at less than 80% of capacity and FLG has applied to the F.P.C. for approval to convert a substantial portion of the original 24-inch pipeline to a petroleum products pipeline which would involve completing the remaining loops of the parallel interconnecting 30-inch pipeline thereby permitting full deliveries of natural gas into Florida to continue. The products portion of the line would extend approximately 890 miles from near Baton Rouge, Louisiana, to Fort Lauderdale, Florida, and would transport gasoline, jet fuel, diesel oil, kerosene, light heating oil and other refined products which presently enter Florida only by truck, railroad tank car, barge or tanker. TransGulf would have an initial delivery capacity of approximately 200,000 barrels a day, about one-half of the current consumption of these products in the Florida market. The initial system is projected to cost $135 million which includes $32 million to purchase the existing 24-inch pipeline system, and the balance for commercial terminals at various locations in the state. Florida Gas Transmission will spend $20 million to complete looping the 30-inch pipeline.

If the F.P.C. approves TransGulf, operations could commence by 1979, at which time the average daily delivery capacity of the natural gas pipeline system would be reduced from 705 million cubic feet to 625 million cubic feet. If it were assumed that the new products pipeline system would be financed with an initial 10% common equity contribution from the parent company and that the return on that equity would be substantially higher than the present return on equity, the earnings contribution could be in the area of $0.50-0.75 per share.

FINANCIAL

Construction

Capital expenditures totaled $19.1 million in 1975, were projected at $22 million for 1976, and for 1977 may be in the $40 million area. If F.P.C. approval is received, construction of

the TransGulf pipeline conversion project could be accomplished mostly in 1978; capital spending for 1978 in Table 4 excludes any TransGulf outlays.

Table 4

CAPITAL EXPENDITURES
(millions)

	1974	1975	1976E	1977E	1978E
Division					
Pipeline	$ 7.7	$ 2.8	$ 3.0	$ 9.0	$ 5.0
Distribution	4.1	3.6	4.0	5.5	6.0
Land	14.5	4.1	1.5	2.5	3.0
Oil & Gas	22.5	18.5	13.0	22.0	30.0
Hydrocarbons & Other	0.3	0.1	0.5	1.0	1.0
Total	$49.1	$19.1	$22.0	$40.0	$45.0

Financing

Florida Gas has a $10 million revolving credit agreement (most of which was taken down by the end of 1976) and $30 million bank line; no major permanent financing was undertaken during 1976 except for a $30 million, six and a half year term loan entered into in conjunction with the revolving credit agreement. In 1977, capital spending of $40 million will be funded by $12 million of retained earnings, $31 million from depreciation and depletion and $8 million of deferred income taxes making any permanent long-term financing unnecessary except special project type financing, if suitable. The 5¾% debentures are not likely to be exercised (conversion price $23.41) until the common stock dividend reaches $1.35 per share, a rate we foresee about mid-1979, the same year the debentures initially becomes callable. We do not see the need for equity financing over the next few years.

Table 5

FINANCING AND CAPITALIZATION

	1974	1975	1976E	1977E	1978E
Uses					
Capital Spending	$ 49.1	$ 19.1	$ 22.0	$ 40.0	$ 45.0
Dividends	5.5	6.1	7.0	7.0	8.0
Sinking Funds and Maturity	16.7	22.7	16.0	23.0	40.0
Total Uses	$ 71.3	$ 47.9	$ 45.0	$ 70.0	$ 93.0
Sources:					
Internal:					
Depreciation	$ 16.6	$ 20.7	$ 28.0	$ 31.0	$ 34.0
Deferred Taxes	4.9	9.9	7.0	8.0	9.0
Net Income	17.6	16.2	18.0	19.0	21.0
Miscellaneous	(17.2)	(0.9)	(12.0)	–	–
Internal Total	$ 21.9	$ 45.9	$ 41.0	$ 58.0	$ 64.0
External:					
Short-Term Debt	$ 9.6	$ (0.7)	$ (26.0)	$ 12.0	$ (1.0)
Long-Term Debt	39.8	2.7	30.0	–	30.0
Preferred Stock	–	–	–	–	–
Common Equity	–	–	–	–	–
External Total	$ 49.4	$ 2.0	$ 4.0	$ 12.0	$ 29.0
Total Sources	$ 71.3	$ 47.9	$ 45.0	$ 70.0	$ 93.0
Abreviated Balance Sheet:					
Net Plant	$380.3	$375.4	$369.0	$378.0	$389.0
Capitalization					
Short-Term Obligations	$ 36.4	$ 35.7	$ 10.0	$ 22.0	$ 21.0
Long-Term Debt	204.3	185.7	200.0	177.0	167.0
Preferred Stock	9.0	8.4	8.0	7.0	7.0
Convertible Debentures	14.5	14.5	14.0	14.0	14.0
Common Equity	138.0	148.2	159.0	171.0	184.0
Total	$402.2	$392.5	$391.0	$391.0	$393.0

Earnings—1975

In 1975 Florida Gas earned $2.31 per share, fully diluted, down 8% from the $2.51 earned in 1974. Natural gas transmission and distribution operations and the loss in real estate operations held about at 1974 levels while oil and gas exploration operations reversed from a loss to a modest profit. Although the combined earnings from these three divisions rose, FLG's consolidated 1975 results were down as a result of the anticipated reduction in earnings from Hydrocarbons. The May 1975 start-up of the liquids extraction plant in the Jay Field greatly reduced the product recovery by FLG's plant, and hence, net income from the hydrocarbons subsidiary declined $0.46 per share during 1975. Also, a first quarter modification of an exploration program increased net earnings by $0.09 per share, while in the fourth quarter, FLG chose to write down its foreign oil and gas exploration operations which reduced earnings by $0.06 per share.

Earnings – 1976

Earnings for the first nine months of 1976 were $1.88 per share (fully diluted), 4% over the $1.80 earned in the same 1975 period.

Table 6

QUARTERLY EARNINGS COMPARISON
(Fully Diluted)

Quarter	1974	1975	1976	1977E	1978E
March	$0.74	$0.83a	$0.72	$0.80	$0.90
June	0.67	0.54	0.54	0.60	0.65
September	0.52	0.43	0.62c	0.65	0.70
December	0.58	0.51b	0.62E	0.70	0.80
Year	$2.51	$2.31	$2.50	$2.75	$3.05

(a) Includes $0.08 non-recurring income from exploration program modification.
(b) Includes $0.06 earnings reduction owing to write down of foreign oil and gas exploration investments.
(c) Includes $0.09 income from non-recurring producer refunds.
E – Estimated.

For the full year 1976 we expect gas transmission and distribution operations to contribute greater profits than in 1975, land operations to have bottomed and maybe even show a modest improvement while earnings from oil and gas exploration operations, reflecting initial production from Grand Isle Block 76 and an increase in daily offshore production, should improve strongly. The earnings weakness at Florida Hydrocarbons continued through the first five months of 1976 but, starting in June, production of liquids at the extraction plant was on a basis comparable with 1975; we expect earnings comparisons for the balance of the year were favorable. For the full year 1976, fully-diluted earnings near $2.50 per share are estimated, for Florida Gas.

Table 7

INCOME STATEMENT
(Millions)

	1971	1972	1973	1974	1975	1976E	1977E	1978E
Operating Income Before Interest And Income Taxes								
Pipeline System	$39.0	$33.5	$36.8	$37.0	$37.2	$39.0	$40.5	$41.0
Distribution Systems	3.0	3.9	3.9	4.4	3.7	4.5	5.0	5.0
Hydrocarbons Extraction Plant	–	0.4	3.8	12.4	5.8	2.0	1.0	1.0
Oil and Gas Exploration	(1.7)	(0.8)	(1.0)	(0.5)	1.3	3.0	5.0	8.0
Real Estate	(0.1)	0.2	0.6	(1.4)	(0.9)	(0.5)	–	0.5
Other	(2.3)	0.2	(1.0)	(0.6)	(0.1)	(0.5)	(0.5)	(0.5)
Total	$37.9	$37.3	$43.1	$51.4	$47.0	$47.5	$51.0	$55.5
Fixed Charges	$16.7	$16.1	$17.0	$20.7	$18.1	$16.0	$15.5	$15.0
	$21.2	$21.2	$26.1	$30.7	$28.9	$31.5	$35.5	$39.5
Interest Capitalization and AFUDC	1.0	1.0	1.8	2.3	1.5	1.1	1.0	1.0
	$22.2	$22.2	$27.9	$33.0	$30.4	$32.6	$36.5	$40.5
48% Income Tax	10.7	10.7	13.4	15.8	14.6	15.7	17.6	19.5
	$11.5	$11.5	$14.5	$17.2	$15.8	$16.9	$18.9	$21.0
Miscellaneous and Flow Through Items	0.1	1.2	1.3	0.4	0.4	0.5	0.5	–
New Income	$11.6	$12.7	$15.8	$17.6	$16.2	$17.4	$19.4	$21.5
Preferred Dividends	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.4
Earnings for Common	$11.0	$12.1	$15.2	$17.1	$15.7	$16.9	$18.9	$21.1
Shares Outstanding	6.25	6.33	6.33	6.33	6.34	6.37	6.37	6.37
Earnings Per Share; Primary	$1.76	$1.91	$2.40	$2.69	$2.47	$2.65	$2.97	$3.31
Earnings Per Share; Fully Diluted	$1.65	$1.80	$2.24	$2.51	$2.31	$2.49	$2.77	$3.08
Dividends Per Share	$0.60	$0.624	$0.65	$0.78	$0.875	$0.975	$1.075	$1.175
Payout Ratio	36%	35%	29%	31%	38%	40%	40%	40%

Earnings – 1977 and Beyond

Less unfavorable quarterly earnings comparisons at Hydrocarbons coupled with higher volumes of natural gas transmitted and sold, increasing oil and gas production and higher prices, and a further recovery of land operations should produce earnings of at least $2.75 per share fully-diluted in 1977.

Over the longer term we expect earnings per share growth to continue at an annual rate of 10% or better assuming increasing profits from oil and gas production, the gradual marketing of land holdings, and (starting in 1979) a profit contribution from TransGulf Pipeline (if approved). In 1980 initial production from the Cognac prospect could add significantly to earnings. By 1980, the mix of earnings before interest and taxes, assuming possible per share earnings that year of $4.00, could be 62% pipeline, 23% oil and gas, 9% products pipeline, 8% distribution, and the remainder land and hydrocarbons.

Dividends

After the original pipeline system started in 1957, nearly ten years passed before cash flow was sufficient to pay the first common stock dividend in 1967. Because of the brief dividend record, there is no firm payout policy; however, management has increased the rate annually since dividends were instituted, a policy we believe will continue. The dividend was increased to $1.00 per share effective with the June 15, 1976 payment. We estimate the dividend could reach $1.40 per share by mid-1980, a 35% payout of that year's possible earnings assuming dividend increases of $0.10 per share each year.

Table 8

FINANCIAL SUMMARY
(Millions)

	1971	1972	1973	1974	1975	1976E	1977E
Operating Data							
Revenues	$109.2	$109.5	$124.7	$135.5	$127.5	$ –	$ –
EBIT	37.9	37.3	43.1	51.4	47.0	47.5	51.0
Fixed Charges	15.7	15.1	15.2	18.4	16.6	14.9	14.4
Income Taxes	9.8	9.5	12.2	15.4	14.2	15.2	17.1
Net Income	12.4	12.7	15.8	17.6	16.2	17.4	19.4
Earnings for Common	11.8	12.1	15.2	17.1	15.7	16.9	18.9
Capitalization							
Debt (Long & Short Term)	$219.4	$213.4	$217.0	$240.7	$221.3	$210.0	$199.0
Preferred and Converts	25.3	24.7	24.1	23.5	22.9	22.0	21.0
Common Equity	107.9	116.5	125.9	138.0	148.2	159.0	171.0
Total	$352.6	$354.6	$367.0	$402.2	$392.4	$391.0	$391.0
Ratios							
Operating Margin	34.7%	34.1%	34.6%	37.9%	36.9%	–	–
Pretax Coverage	2.4X	2.5X	2.8X	2.8X	2.8X	2.9X	3.5X
Effective Tax Rate	44.1%	42.8%	43.6%	46.7%	46.7%	46.6%	46.8%
Return on Investment	8.0%	7.8%	8.4%	9.0%	8.4%	8.5%	8.7%
Return on Avg. Equity	12.1%	10.8%	12.5%	13.6%	11.0%	11.0%	11.5%
Common Equity Ratio	30.6%	32.9%	34.3%	34.3%	37.8%	40.1%	43.7%
Per Share Data							
EPS (Fully Diluted)	$1.77	$1.80	$2.24	$2.51	$2.31	$2.50	$2.75
Dividends	$0.60	$0.624	$0.65	$0.78	$0.875	$0.975	$1.075
Book Value	$16.85	$18.14	$19.89	$21.80	$23.40	$24.96	$26.84
Average Shares (Mil.)	6.25	6.33	6.33	6.33	6.34	6.37	6.37
Price Range	30-20	24-17	22-11	16-7	16-9	–	–
P/E Range	17-11X	13- 9X	10- 5X	6-3X	7-4X	–	–
Average P/E	14.1X	11.3X	6.9X	4.5X	5.6X	–	–
P/E Realtive to S&P500	82%	66%	53%	49%	53%	–	–

VALUATION

Natural gas pipeline companies continue to sell at a price/earnings multiple discount from the market averages. Within the pipeline group, Florida Gas had generally sold at a slight discount based on its P/E multiple and market-to-book ratio; however, the increasing earnings contribution from oil and gas operations should eventually boost the P/E to a premium within the group (natural gas producers typically sell at 11–12 times estimated 1977 EPS), while the market-to-book ratio should also improve as land sales recover. (Florida Gas has sold substantially below book value to recent years, a discount which we attribute to investors' concerns that weak real estate markets may have required a write-off of a portion of the high cost land investments, thereby reducing book value per share.) Based upon a P/E multiple valuation about equal to or only slightly greater than other gas pipelines, Florida Gas appears particularly attractive at current levels for a combination of increased earnings, a modest but gradual upgrading of the P/E and solid dividend growth.

Table 9

FLORIDA GAS INSTITUTIONAL OWNERSHIP

Institutional Category	Number Holding	Shares Held	% of Outstanding Shares
Banks*	9	374,474	5.9%
Investment Companies*	9	516,000	8.1%
Insurance Companies**	5	382,500	6.0%
Total	23	1,272,974	20.0%

Source: * Spectrum –June 30, 1976
** A.M. Best –1976 Edition

RR-77-8 –Research Department–

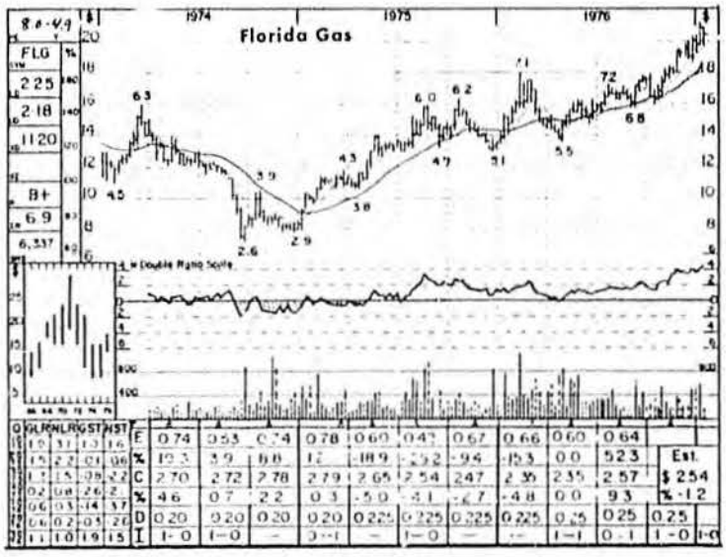

Chart courtesy Mansfield Stock Chart Service.

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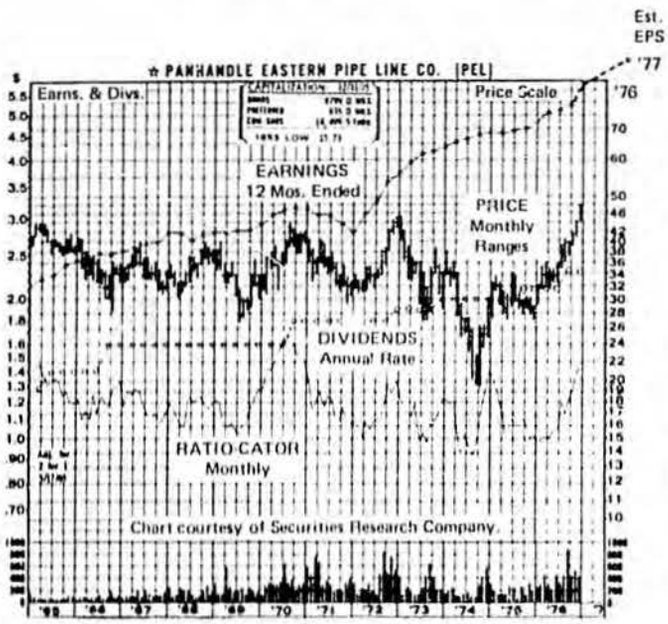
White, Weld & Co.
Incorporated

Company Outline

PANHANDLE EASTERN PIPE LINE CO. (PEL)

Price (NYSE)		Dividend		EPS		P/E
February 3, 1977:	47	Rate:	$2.30	1978E:	$7.25	6.5X
Range (1976-1977):	49-29	Yield:	4.9%	1977E:	$6.40	7.3X
				1976A:	$5.58	

Common Shares Outstanding:	16.7 million	Return on Average 1975 Equity:	16.6%
Market Value:	$785 million	Book Value Per Share (9/30/76):	$34.02
% Owned by Institutions:			
31 Banks	18.7%		
22 Investment Companies	9.2%	Number of Brokers Covering	
31 Insurance Companies	3.3%	PEL (Nelson):	13



DESCRIPTION

Panhandle and its subsidiary, Trunkline Gas, buy gas in the Gulf Coast, in the Anadarko Basin, and in Rocky Mountain areas for resale in Michigan (36% of sales), Indiana (19%), Illinois (18%) and Ohio (17%). Energy production related subsidiaries include: Anadarko Production—which produces oil and gas from onshore and offshore sources; Pan Eastern—which is a drilling fund that sells the gas from reserves formerly owned by the pipeline; Y&O Coal—acquired mid-1976, which mines underground coal and sells it for electric generation; and Century Refining—an oil refinery and marketer in the Great Plains. Other operations include offshore drilling, dividends from National Distillers and Chemical Co. and sales of liquids extracted from the gas stream.

CONCEPT

As recently as a year ago, investors believed natural gas pipelines were a declining business. They were incorrect.

Natural gas pipelines began to search for gas themselves in the late 1960's when their supplies dwindled as traditional producers searched for other energy sources whose unregulated prices offered greater profitability prospects. The shift to their own gas exploration and production is paying off much more handsomely than previously thought due to a better than six-fold increase in gas prices since then and is giving the gas industry a significant new earnings dimension which should last for years to come.

Panhandle Eastern, one of the first to identify this need for vertical integration, acquired interests in several offshore leases as early as 1970, which are just coming into production and developing into a significant new earnings source. Moreover, earnings prospects for PEL's traditional pipeline operations have also improved due to higher anticipated gas volumes transmitted through the Trunkline system. Overall, we believe PEL can sustain EPS growth of 11% per annum into the early 1980's.

The combination of growing production income and expanding pipeline earnings suggests that PEL could command a P/E ratio a bit closer to natural gas producers. Currently, pipelines as a group are selling at 7.7 times estimated 1977 EPS and yielding 4.8%, while gas producer multiples range from 9 to 12 times 1977 estimates. PEL should continue as one of the principal beneficiaries of investors' increasing recognition of changing pipeline fundamentals. We continue to recommend purchase.

POSITIVES

1. Natural gas deliveries by the pipeline system will rise in 1977 after declining in each year since 1972.
   a. Trunkline has connected new Gulf of Mexico production and its volumes will rise sharply in 1977.
   b. Panhandle volumes will drop only slightly due to new deliveries from Trunkline; most of its gas supply now comes from areas with active intrastate markets.

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c. Stingray's location positions the pipeline systems to contract for new Gulf reserves as developed.
d. Delivery curtailments in 1977 should be down by 20% for Trunkline.
e. Higher volumes mean earnings growth will be less dependent upon rate increases.

2. Earnings from energy production materializing rapidly.
   a. Purchase of Y&O Coal Co. in August 1976 adds steam coal as an earnings base and gives PEL coal expertise for the future.
   b. Pan Eastern's gas search program has been extended through 1986. Pan Eastern uses the proceeds from the sale of old gas at the prevailing F.P.C. national rate to develop additional gas reserves. Since customers provide the funds, the new gas will be sold at discount prices.
   c. Anadarko Production has a long history of production in the Hugoton and Anadarko Basins, traditional gas supply area of the Panhandle system. Anadarko is also PEL's entry into the exciting offshore areas.
   d. Anadarko's offshore leases include 86,388 acres offshore Louisiana; 72,577 acres offshore Texas; and 22,772 acres in the Baltimore Canyon offshore Atlantic.
   e. Platforms have been installed on four Louisiana blocks and three Texas blocks, two of which are producing, one will start flowing by mid-1977 and four others by 1978.
3. Other Panhandle ventures provide diversified opportunities for earnings expansion.
   a. PEL owns 3,000,000 shares of National Distillers & Chemicals, a $74 million investment carried on the books at only $7 million.
   b. PEL is a partner in a proposed LNG project that would import an average of 420 million cubic feet daily from Algeria using five LNG tankers.
   c. Archon, which in December 1976 announced plans to acquire Dixilyn Corp., an offshore contract driller, now owns a two-thirds interest in two semi-submersible rigs.
4. Financing needs are modest.
   a. Capital outlays of approximately $200 million are expected for 1977 and a slightly higher $220 million in 1978 (versus $200-245 million in 1974-76).
   b. Internally generated funds are rising from an average $145 million per year for 1974-1976 to a projected $185 million average per year for 1977-1978.
   c. The acquisition of Y&O Coal in August 1976 for stock raised the equity ratio from 36% to 40%, obviating any future need to sell new common equity to the public. Other acquisitions for stock (such as Dixilyn) will serve to boost the equity ratio further.
5. Earnings growth should benefit materially from higher gas volumes carried by Trunkline and the rising production income from Anadarko's offshore acreage.
6. Payout ratio was 45% for the period 1971-76.
   a. The present $2.30 dividend is only 36% of 1977 estimate.
   b. We believe the greater risks of oil and gas exploration may mandate a payout lower than 45% but probably not below 40% of earnings. Maintenance of 40% payout could produce 10-12% dividend growth.
7. In an economy that is likely to be energy-short well into the future, we believe those companies producing energy will tend to increase their relative P/E ratio while the heavy energy-consuming industries should experience a further decline in their P/E's relative to the market.

CONCERNS

1. There has been some concern as to the soundness of certain diversification efforts. While each could be questioned as an isolated move, together they provide exposure to the development of new energy resources.
   a. PEL acquired Y&O Coal despite reserves nearly all being high sulfur steam coal offering little prospect for growth and weak spot markets. Furthermore, coal gasification feasibility still appears years away.
   b. The Dixilyn acquisition is being achieved while offshore drilling companies are running into excess capacity, reducing rig rates and shrinking profits.
2. The stock price is about 65% above its 1976-1977 low and some are questioning the degree of remaining upside potential. However, in view of the still modest 6.5 multiple on estimated 1978 EPS, the current yield of 4.9%, and favorable EPS and dividend prospects, we believe PEL will continue to outperform the market.

Earnings per Share by Division

	1975	1976E	1977E	1978E
Pipeline				
Panhandle	$0.71	$0.90	$0.90	$1.40
Trunkline	1.78	2.15	2.30	2.00
Stingray	0.41	0.20	0.20	0.20
Total	$2.90	$3.25	$3.40	$3.60
Energy Production				
Anadarko	$0.62	$0.95(x)	$1.45	$1.95
Pan Eastern	0.36	0.50	0.50	0.60
Y&O Coal	-	0.10	0.25	0.30
Pan Western	0.04	0.05	0.05	0.05
Century Refining	0.19	- (x)	0.15	0.15
Total	$1.21	$1.60	$2.40	$3.05
Other Sources				
Archon	$0.13	$0.15	$0.05	$0.10
National Distillers	0.25	0.25	0.25	0.25
National Helium	0.09	0.10	0.10	0.05
Other (Miscellaneous)	0.25	0.25	0.20	0.20
Total	$0.72	$0.75	$0.60	$0.60
Earned Per Share	$4.83	$5.58	$6.40	$7.25

E = Estimated (1976 division results are estimated, total EPS actual).
x = 1976 writeoffs incl. $0.29 in Century; $0.27 in Anadarko.

RS-77-8

A. Hager Bryant, 3rd
(212) 285-2896

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White, Weld & Co.
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RESEARCH WIRE

28 February, 1977

George H. Cleaver
(212) 285-2012

Non-ferrous outlook

Copper industry trouble; strike too
Coal strikes hurt--trouble making in
Washington--aluminum 1st quarter low--
but long run better--molybdenum strong
Nickel, zinc, copper weak--company briefs

If there is a long U. S. copper strike earnings in 1977 of the copper companies will be less than shown here. Some will be less affected since not all labor agreements end June 30. Chance of a strike is good.

If coal strikes and slow downs are severe this year, companies with coal properties may have lower earnings than shown here.

Trouble from Washington

A courts' decision that Atlantic Richfield could take over Anaconda, though the FTC opposed it, may have wider significance. It may open the way for other large companies to acquire U. S. metals companies. On the other hand, some of these metals companies are in coal, oil, gas or uranium. Noises in Washington suggest the government is considering prevention of horizontal integration of companies in the energy industries. This would inhibit exploration for and development of energy resources. Washington might even decide to disintegrate those now integrated. This could hit Amax--partly via St. Oil of California's some 20%, but Amax also is in coal, oil and gas. St. Joe Minerals is in coal, oil and gas. Utah International is in coal, oil and gas, and it has an "independent" uranium company. It is possible the Utah (General Electric) pattern might satisfy Washington's need to make things difficult for the economy--require separate and outside boards for each energy industry operation.

Freeport Minerals is in oil and gas and is getting into uranium. Newmont is in oil and gas and indirectly coal, and now will be more directly in coal.

Washington I think will hold hearings on these matters in April or May. I guess all the anti-growth, anti-business types will be there. More reasonable people tend to be discouraged by such things and are dis-inclined to testify. In addition it is always assumed they are biased--rarely is it realized how important are the ideological biases of the pro-government interventionists. Dis-integration would not necessarily reduce total market value. In fact, two separate companies might be worth more than one.

1977 a poor year

Heavy over-supply in most metal industries, but also much greater costs associated with pollution abatement; will mean a poor year for many of these

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companies. Extremely high wages in recent years will make strikes and slow-downs more practical, and termination of labor agreements this year will most likely lead to widespread strikes. Aluminum will do well; over-supply is disappearing, and molybdenum markets are strong and will probably strengthen further. Lead prices have spurted owing to heavy Russian demand evidently following plant break downs, and a long strike of an Asarco-smelter in Missouri Lead might ease later. Zinc and nickel are quite weak, and copper is not quite a disaster; it is for some companies.

Aluminum looks good

I felt two ALUMINUM price increases would occur in 1977--one would be the elimination of price discounts and the other would be a regular price increase. Most prevalent has been the view there would be two of the latter. That is possible but even without it, with a shipment rise to about 13.6 billion pounds, the companies will do much better in 1977-- and 1978 will be better still--the latter is the year for fancy earnings in aluminum. The notion there would be regular price increases early in 1977 was slapped by David Reynold's remark that RLM would have a small increase after setting new wage agreements. This means probably in mid-year. It is still possible the companies would do it twice in 1977 though. U.S. shipments in 1976 were about 12.8 billion pounds and that is far ahead of 1975's some 9.9 billion, but well under 1973 and 1974's two year average of about 14.3 billion. That though included some 2.6 billion from the now denuded U.S. stockpile.

The most recent set of aluminum and aluminum product price increases went through only partly and certainly the primary producers backed in buyers at less than full list on many products. The weakest as usual have been soft aluminum extrusions used widely in the building industry but elsewhere too. Wire and cable products have also been soft and prices may be even lower than those of a year ago. The slowness in the building industries and in utilities is largely responsible. The probable pick-up in residential construction will help aluminum in 1977.

The companies expect 1977 shipments of about 14 billion pounds.

First quarter low earnings

Fourth quarter 1976 shipments were low and the early part of the first quarter of 1977 also looks low. Some of the aluminum companies will have a <u>bad first quarter.</u> The second and rest of 1977, shipments and prices will probably be

very good. New orders during the first six weeks were high; they averaged 14.6 billion pounds annual rate. Product prices are firming and flat rolled products are getting tight. Power caused output cuts will probably further price firming. About a third of U.S. primary aluminum capacity is in the North-west. About 10-12% of that capacity is now down owing to power problems. It will likely remain down all year--and a little more may be added. Alternative power sources look less good now than a month ago.

A peculiar accident has cut out some capacity at Alcoa's Indiana smelter. Evidently frozen and wet coal was put into boilers--the boiler tubes then sprang leaks; I don't know how long production will be down. Natural gas based plants of Alcoa and Reynolds remain closed--only intrastate gas could be found for these and the power costs per pound of aluminum would be about 20¢--so I think they will remain closed. Kaiser's eight lines at Louisiana (the ninth is being opened) get gas I think at 64¢ per MCF and that probably means a power cost of about 6-7¢ a pound of aluminum--and that is not bad.

You ought to own some aluminums.

Nothing but trouble for copper

Copper wire bar prices charged by U.S. merchants were ½¢ above the producers' 68.6¢ a pound February 24. London spot was about 65.8¢ and three months 66.8¢. As we get closer to the U.S. copper strike July 1 further small increases are likely and they could lead the U.S. producer price to 70¢ and possibly even higher. Some U.S. mines will continue to lose money at 70¢. If there is no strike, all copper prices will probably fall considerably this summer. World excess copper inventories are about equal to one year's U.S. copper mine output, about 1.4 million tons. There is a notion around that much of that copper in inventory is of such poor quality it can't be used. Well, that is a lot of b.s. Much of it can't be used to make wire, but it is plenty good for other uses and it can be swapped to non-wire makers for 1¢ off, or some such. There is over capacity in the world copper industry and the higher cost mines may have to close. Some already have.

ZINC prices were folded back 3¢ a pound to 37¢ a few months ago. When they were raised in August it seemed a hopeless move. Nickel is soft while lead is better and molybdenum is much better.

Company briefs

ALCAN's fourth was better than I expected and in part reflected the great price

improvement especially out of N. America. But it has become more obvious that the Quebec political victors are against the free sector and want to expand the coercive sector. Will Alcan try to get protection via increased investments in Quebec? Its plants badly need rehabilitation.

Directly or indirectly the Quebec government (or Canadian government) might get a measure of control. Put people on the board, and or get "workers" on the board? It could thus "force" Alcan's development and expansion in Quebec, even if other places are better. Remember Texasgulf--30% owned by a Canadian government agency. Why did Texasgulf back away from the Peabody Coal deal? Need it put more of its development into Canada? What would prevent a law requiring "public" representation on boards' of larger companies?

ALCOA's fourth quarter diluted was 89¢ before adding 20¢ per share from FASB #8, well off from the third. Shipments fell to 396,000 from 441,000. Will close another line at Vancouver. The industry in the N. W. will be 11% closed. If steel has really developed a steel can top Alcoa will feel it most; some 20% of its metal goes into can tops most of it on steel cans.

AMAX's strong position in molybdenum is paying off. If no strike this July, Amax's moly sales will be about equal to those of 1976 when 12 million pounds were sold from inventory. Production will be up in 1977. Its other goody is coal which will provide increased income in future years. In 1976 coal earnings A/T were down perhaps $2 million from 1975's $40 million, though sales were up 3 or 4 million tons. It is having some trouble getting sales contracts for the additional coal it can produce. I don't think it has been able to get some expiring contracts renewed either. A 4% tax rate helped much in 1976. That rate will rise to 15-20% in 1977.

ASARCO's best is the 49% owned M. I. M. in Australia. For various reasons much of its other stuff is of doubtful value. In a good economic year it will do very well though. It has probably been increasing its custom smelting income. Lead price increases will help it and others.

COPPER RANGE - Louisiana Land seems prepared to buy CPX for $50 million.

CYPRUS MINES' hopes hang on the 50,000 ton Bagdad copper expansion. The copper price it needs for that is probably 85¢. Getting cash from Peru's govern-

ment. Anvil is coming back into full production. It is a good lead-zinc mine. Marcona's problems are being reduced, but not eliminated.

ENGLEHARD MINERALS did 90¢ in the fourth, about as expected. Philipp Bros. division in 1976 did slightly less than in 1975, but the other two divisions were at a record. Replacement cost accounting would hurt ENG less than other companies.

FREEPORT MINERALS made 41¢ in the fourth. It lost 8¢ PS on its copper property. Sulphur earnings were low and will probably remain low as the fertilizer industry lags. Gas and oil financing costs will hurt earnings. Its by-products uranium production may produce 50-70¢ PS by 1979-80 assuming the plant will work.

GENERAL CABLE needs improvement in building and utility activity. A diversification move by getting 93% of Sprague Electric for $19.50 per share--about $63.5 million--seems wise. For the first nine months Sprague made about 41¢ per GK share, about half as much as GK made. Sprague's integrated circuit subsidiary, Mostek, seems rather juicy.

INSPIRATION CONSOLIDATED COPPER will be helped by the January copper price rise. But it needs more.

INCO made 82¢ in the fourth. With a ballooning of nickel sales and some good earnings from other things one would have expected a better quarter. Nickel prices remain weak. It is starting up Indonesian nickel--where can it sell the metal? It already has a heavy inventory. Indonesian costs I think will be high.

KAISER would have shown $4.76 PS for 1976 except for $2.62 of write-downs. But 75¢ was from FASB #8. Before write-down it made $1.52 in the fourth quarter. There were some inventory profits. The first quarter will be low. But the long run fundamentals for aluminums are very good.

KENNECOTT appears to be selling Peabody Coal to a Newmont group for a present value of some $925 million, about $27 per KN share. That will give it considerable cash. Will it pass out some of it? I expect the FTC to accept the proposal. KN is too cheap to sell in part because its replacement value is at least twice its share value. It lost 15¢ PS in the fourth.

NEWMONT MINING was hit in the fourth by lower U.S. and foreign copper prices. But its dividend is not in danger. It will evidently get 35% of Peabody Coal.

It paid high for that! It will probably sell to Utah Power, from Peabody, one of the major losers. Peabody may be a cash drain for Newmont. Are long term buyers of coal in the drivers' seat? They are being offered much coal by many miners. Made 35¢ PS in the fourth, partly with portfolio sales.

PHELPS DODGE's fourth was a bust. From copper mining and manufacturing it made only about 15¢ PS. From aluminum it got 11¢ and 22¢ from ITC; wrote down 41¢ PS. Though PD is better off than other U.S. coppers, the industry situation is just too bad. Though it may get 60¢ PS from aluminum, I doubt it will get any dividends this year. Conalco has some heavy capital expenditures ahead.

REVERE COPPER moved from about $11 to $21 as Martin Marietta and National Steel appeared interested in acquiring part or all of the company. The improving aluminum situation will help Revere but its brass mill operations will likely remain a drag. It hopes to get over $80 million from OPIC for its closed Jamaican operations.

REYNOLDS METALS' made 94¢ PS in the fourth and sold 293,000 tons aluminum down 5% from the 3rd and 9% from the 2nd. Though prices are firming, the first will be low largely owing to weather problems; but also a large FASB #8 loss. RLM's Canadian smelter and 40% owned hydro power plants are in Quebec--that is not good, but it would be stupid for Quebec to antagonize industry anymore than it has.

ST. JOE MINERALS made 87¢ in the fourth; this was helped by a large amount from subsidiaries. Earnings from zinc, iron ore and coal were rather low. Lead has been good and prices are high. Earnings for the first will be well under the 75¢ of 1976's first.

TEXASGULF made but 35¢ in the fourth quarter. Low prices and volume for its products suggest little improvement. Improving lead prices will help a little. With 30% ownership by the Canadian government, I wonder how much freedom management has to put investments outside Canada? Who killed Texasgulf's participation in the Newmont Peabody Coal deal?

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Industry Outline

Coal Industry
Presentation by William N. Walling 3/10/77

Recommendation: Accumulate Coal Stocks Between Now and Mid-Year

I. Industry Fundamentals
- A. Steam Coal (80% of industry volume)
  - 1. Demand
    - a. for electric utilities (70% of industry volume)
      - (1) demand for electricity
        - (a) demand has historically doubled every 10 years (about 7.2% per annum growth) with gains of 2-3% in "bad years"
        - (b) 1974-75 hiatus in demand growth reflected the deep recession, steep price increases, and conservation
        - (c) 1976 kilowatt-hour production gain was 6.5% but demand was up about 10% in the October 1976-February 1977 period
        - (d) expect long term kilowatt-hour growth of at least 5% per annum in future (other estimates are more optimistic--6%)
      - (2) demand for steam coal by electric utilities
        - (a) coal gaining market share with increase in demand for steam coal in 1976 of 9.4%, about 50% greater than increase in electricity usage
        - (b) expect long-term ratio of steam coal demand/electricity usage of about 1.3/1 giving average annual growth of over 6% for steam coal demand
        - (c) FPC forecast sees 90% increase in steam coal use by 1985
        - (d) lead times of 5-8 years in the construction of generating capacity gives unusual visability to future demand forecast
    - b. for industrial markets (10% of industry volume)
      - (1) demand characteristics -- inherently quite cyclical reflecting changes in industrial production
      - (2) market share trends -- FPC policies call for shift from natural gas to coal
      - (3) outlook -- expect 4% per annum average growth over next 5 years, given the potential for some cyclicality
    - c. overall demand - steam coal should grow about 6% per annum over next several years
  - 2. Productive capacity -- expected to grow at about 5% per annum between now and 1980
  - 3. Prices -- expected to improve in 1977 (coal sells at 50¢ BTU discount to oil), if not in 1978 as well
- B. Metallurgical Coal (20% of industry volume)
  - 1. Demand
    - a. used almost exclusively for steel production
    - b. expect 2 1/4% annual growth for steel demand in U.S. over next 5 years vs 1 1/2% historic rate
    - c. look for slowdown in overseas demand growth from 5%, but rising real income and population growth should provide continued forward momentum - economic development in OPEC countries should provide an additional increment to demand
    - d. expect overall per annum growth of 4% during next 5 years

1765

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2. Productive capacity of high-grade met coal -- expect per annum growth to approach 4% through 1976-1980 (though much faster in 1977-1978) but, with older mines being increasingly depleted, growth will slow after 1980 and shortages should appear
3. Prices -- expected to show significant improvement in 1978 for first time since 1974

II. Investment Considerations

A. Important Events in 1977

1. Announcement of Carter energy program -- April 20, 1977
   a. do not expect a complete presentation (may be less dramatic than some expect), but rather a gradual unfolding of the policy over time
   b. it is doubtful that coal stocks will react sharply to the speech in the absence of major proposals, but some buying could occur if investors perceive a real (and realistic) energy policy taking shape
2. United Mine Workers election -- mid-June 1977
   a. expect hard-fought election and 1-2 weeks of production should be lost to wildcat strikes (sporadic strikes have already occurred)
   b. investor interest in coal stocks should pick up after conclusion of election disruptions, especially as 1978 general economic outlook, which we expect to be favorable, becomes clearer
3. UMW contract expiration -- December 6, 1977
   a. expect strike resulting in 2-5 weeks of lost production
   b. strike should be fully anticipated and is not likely to have a significant negative impact on coal equity prices from current levels
   c. reduced supply should improve price environment in 1978 and set the stage for an even better market performance for coal stocks

B. Valuation

1. Price/earnings multiple
   a. a P/E of 8.0 (based on 1977 projections) for the 8 coal and coal-oriented stocks we follow versus 9.1 for S&P 500 implies the upside-down situation of the market awarding higher multiples to issues which will be fighting higher fuel prices than to those likely to benefit from higher fuel prices
   b. expect coal stock multiples to improve and align with the general market multiple over time
2. Yield
   a. average yield of 3.5% for coal stocks is lower than the 4.0% return for the S&P 500 but represents a payout of only about 25% of earnings versus a 41% payout for the S&P 500
   b. as cash flows should exceed capital needs, significant dividend increases are likely over the next few years
3. Market performance outlook
   a. expect annual EPS growth of 10-15% over next 3-4 years -- combined with an improvement in P/E multiples relative to the market (advance to market multiple would be 14%) and a 3.5%+ current yield -- to give a total return in the area of 20% per year
   b. coal stocks should outperform the overall market averages over the next few years

III. Company Recommendations

A. Metallurgical Coal Issues - a play on a recovery in the steel industry

1. Pittston - 90% of earnings derived from met coal
2. Eastern Gas & Fuel - 50% of earnings derived from met coal
3. Westmoreland Coal - relatively small capitalization makes EPS and stock more volatile; vast bulk of earnings come from met coal

B. Steam Coal Issues - beneficiaries from changes in overall fuel mix and availability, electricity growth, and Carter energy program

1. Falcon Seaboard - renewals of contracts over the next 3 years could result in a doubling of prices for its low-sulphur coal while the possession of 250 million tons of lignite deposits improves the outlook beyond 1980; non-union, surface producer
2. North American Coal - as a producer of relatively high sulpher coal (a negative) with longer-term potential tied to development of coal gasification in the mid-1980's, the rich price/earnings multiple for NC appears a function of its very small float and possible takeover (chronic--although we know of none currently being discussed)

C. Coal-Oriented Issues

1. Occidental Petroleum (coal will account for 50% of earnings) - leveraged company with high grade coal deposits and increasing production of North Sea oil; shipped 18 million tons in 1976
2. Continental Oil (coal accounts for 40% of earnings) - second largest coal producer in U.S. (50 million tons; 87% steam, 13% met) with oil and gas production in uptrend (growing North Sea operations an important factor)
3. MAPCO (coal accounts for 40% of earnings) - 16 consecutive years of EPS growth at average 20% rate and superior coal operation (non-union and productivity triple that of coal industry) are reflected in premium multiple relative to other coal stocks, produced 3.8 million tons in 1976 - expect 9.0 million tons 1980

	Price	EPS		P/E	Indicated	
	3/10/77	1976	1977E	1977	Div.	Yield
Continental Oil (CLL)	33 3/4	$4.38	$4.75	7.1X	$1.20	3.6%
Eastern Gas & Fuel (EFU)	25 7/8	3.01	3.10	8.3	.80	3.1
Falcon Seaboard (FSD)	38 3/4	4.16	4.50	8.6	1.00	2.6
MAPCO Inc. (MDA)	42 5/8	3.00	3.70	11.5	1.10	2.6
North American Coal (NC)	53 3/4	4.37	4.50	11.9	.90	1.7
Occidental Petroleum (OXY)	25 7/8	2.26	3.25	8.0	1.00	3.9
Pittston Co. (PCO)	33 7/8	3.92	3.75	9.0	1.25	3.7
Westmoreland Coal (WMOR	50 1/4	7.07	5.00	10.1	1.70	3.4

Paul J. Resnik
Sales/Research Liaison

SRL-77-18

White, Weld & Co.
Incorporated

Progress Report

John H. Hayward, Jr.
(212) 285-2032

December 10, 1976

HALLIBURTON COMPANY (HAL)

Price (NYSE)		Dividend		EPS (Dec.)		P/E
Current:	65 3/4	Rate:	$0.80*	1977E:	$5.85	11.2X
Range (1976):	70-44	Yield:	1.2%	1976E:	$5.20	12.6X
				1975E:	$3.84	17.1X

Average Shares Outstanding:	58,572,361	Return on Average 1975 Equity:	22.8%
Market Value:	$3,763 Million	Book Value Per Share (9/30/76):	$22.31

*Includes the special dividend of $0.24 declared 11/18/76.

SUMMARY & CONCLUSION

Halliburton's outlook over the next several years is for earnings growth in a range of 12-15%, with 1977 earnings gains estimated to be at the lower end of this range due to the long-anticipated slowdown of marine construction activities. However, new orders for offshore development, either second round North Sea fields or new discoveries offshore the U.S., are a likely prospect in 1977-78, and should limit investor concern about the current slowdown. Additionally, Halliburton Oilfield Services is expected to have superior performance, due to strong drilling, especially for gas in the U.S. and development work in the North Sea and Middle East.

Halliburton stock is selling at the low end of its multiple range for the past five years and thus should not be adversely affected by the slower earnings growth in prospect for 1977. (EPS have expanded at a 37.3% rate over the past five years. We expect a 12.5% rise in 1977). Earnings gains in future years should again move up; the company's financial position is greatly strengthened; and rapid dividend increases are likely. We regard the issue as one which will outperform the market over the next several years.

THIRD QUARTER RESULTS

Halliburton's third quarter results of $1.56 versus $1.17—a 33% gain—were ahead of our estimate ($1.35) and were the result of a surge of margins in the company's Oilfield Service and Engineering and Construction groups.

1. **Oilfield Service** revenues increased 26% to $275 million; operating income jumped 38% as margins went from 23% to 25%. Management indicated that these margin gains resulted from continuing efficiency increases, better trained crews and

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continued high operating rates. Revenues also benefited from market share gains. Halliburton believes it is capacity short, therefore, despite its market share gains, it may still be losing some business to competitors—a potential area for continued improvement.

2. **Engineering and Construction** margins increased to 9.5% versus 7.1% in the year ago period, which accounted for the 34% gain in operating income despite a $10 million decline in revenues (to $934 million). This decline was primarily the result of the sale of Ebasco Services early in the quarter. We estimate Ebasco had revenues of about $45 million in last year's third period. Thus, net Ebasco, E&C Group revenues increased moderately. A strong platform outfitting business in the North Sea was a major component to strong Marine Construction operating income and margins.

3. **Specialty Products** showed a good improvement, reflecting strong rail car component business (which should continue next year). **Highlands Insurance's** (not consolidated) net income increased reflecting better investment income despite continued underwriting losses. All in all, it was a strong quarter, reflecting Hallibruton's excellent position in the U.S. oilfield service sector, and continued good results in marine construction.

FOURTH QUARTER OUTLOOK

We are projecting fourth quarter earnings for Halliburton of $1.35 (a range of $1.30 to $1.40)—an increase of 31% over last year's fourth quarter. We expect revenues to increase by about 3% to $1.1 billion. Thus, for the year we have raised our estimate by $0.35 to $5.20 (in a range of $5.15-5.25). During the fourth quarter, Oilfield Services should continue the strong trends of the year with revenues increasing by 21% to $295 million and margins remaining strong at 24.5%. Engineering and Construction revenues should encounter their usual seasonal decline to about $750 million—primarily industrial construction activities in the USA, but also Northern Hemisphere marine construction. On the other hand, work on the High Island pipeline project in the Gulf of Mexico by the BAR-347 should extend into December, boosting marine revenues. Margins should remain strong; we are estimating margins of 8.7% for E&C in the quarter.

1977 PROSPECTS

In 1977 we estimate Halliburton will earn about $5.85 (in a very broad range of $5.50-6.15), an increase of 12.5% versus 1976; revenues are expected to post a 7.5% gain to roughly $5 billion. The outlook is for strong drilling activity in the U.S., benefiting Halliburton's oilfield service group, a response to increasing oil prices, and higher interstate gas prices. We expect Oilfield Service revenues to increase substantially. Marine Construction revenues, on the other hand, despite high levels of activity in the Gulf of Mexico and the Middle East, may be flat to down, reflecting a decline in North Sea and South East Asia activity. We have taken a conservative tack on estimating Engineering and Construction results in 1977, despite continued revenue increases from engineering, power plant construction, and industrial construction.

HALLIBURTON COMPANY
CONSOLIDATED FINANCIAL STATEMENTS–DIVISIONAL
($ in Thousands)

	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	Year 1975	1st. Qtr.	2nd Qtr.	3rd Qtr.	Est. 4th Qtr.	Year 1976E	1977 Estimate Ranges Low	Medium	High	% Change on Med. 1976–77
Revenues														
Oilfield Services	$188,500	$ 207,000	$ 218,600	$ 244,000	$ 864,942	$ 237,600	$ 256,100	$ 275,500	$ 295,000	$1,064,200	$1,320,000	$1,320,000	$1,320,000	24.0%
Engineering/Construction	691,000	838,000	943,500	780,000	3,254,742	928,400	878,100	933,600	750,000	3,450,100	3,500,000	3,500,000	3,900,000	0.2
Specialty Services	21,600	24,400	21,800	22,000	89,918	26,300	30,200	25,700	26,000	108,700	122,000	122,000	125,000	12.2
TOTAL	$901,159	$1,069,439	$1,183,936	$1,046,068	$4,209,602	$1,192,797	$1,164,276	$1,234,950	$1,071,000	$4,663,023	$5,014,000	$5,014,000	$5,345,000	7.5
Operating Income														
Oilfield Services	$ 40,650	$ 44,500	$ 50,200	$ 56,800	$ 192,189	$ 56,900	$ 61,200	$ 69,200	$ 72,280	$ 259,580	$ 317,000	$ 323,400	$ 331,300	24.6
Engineering/Construction	32,650	62,600	66,610	54,800	216,719	52,100	68,600	89,000	65,250	274,950	245,000	274,950	300,100	0
Specialty Services	2,750	3,500	2,700	2,600	11,549	4,400	4,900	4,300	4,300	17,900	20,200	20,200	20,600	12.8
TOTAL	$ 76,041	$ 110,647	$ 119,513	$ 114,256	$ 420,457	$ 113,316	$ 134,835	$ 162,412	$ 141,830	$ 552,393	$ 582,200	$ 618,550	$ 652,000	12.0
Operating Margins														
Oilfield Services	21.5%	21.5%	23.0%	23.3%	22.2%	23.9%	23.9%	25.1%	24.5%	24.3%	24.0%	24.5%	24.5%	–
Engineering/Construction	4.7	7.4	7.1	7.0	6.7	5.6	7.8	9.5	8.7	7.9	7.0	7.8	7.7	–
Specialty Services	12.7	14.3	12.4	11.8	12.8	16.4	16.2	16.7	16.5	16.5	16.5	16.5	16.5	–
Interest Expense	$ (4,196)	$ (7,424)	$ (7,697)	$ (7,880)	$ (27,197)	$ (7,504)	$ (7,149)	$ (7,411)	$ (7,400)	$ (29,464)	$ (29,000)	$ (29,000)	$ (29,000)	(1.6)
Interest Income	2,083	2,825	2,911	3,619	11,438	3,603	2,634	4,813	5,000	16,050	20,000	20,000	20,000	24.6
Other Inc. (Exp.) (Net)	742	(867)	(1,459)	2,779	1,195	(1,839)	1,868	550	500	1,079	1,500	1,500	1,500	39.0
Income Before Taxes & Equity Items	$ 74,687	$ 105,181	$ 113,268	$ 112,774	$ 405,893	$ 107,576	$ 132,188	$ 160,364	$ 139,930	$ 540,058	$ 574,700	$ 611,050	$ 644,500	13.1
Margin	8.3	9.8	9.6	10.8	9.6	9.0	11.4	13.0	13.0	11.6	11.5	12.2	12.1	–
Provision For Taxes	34,685	46,615	48,298	51,725	181,323	49,407	58,241	71,962	62,969	242,579	261,490	278,030	293,250	14.6
Tax Rate	46.5%	44.3%	42.6%	42.1%	44.9%	45.9%	44.1%	44.9%	45.0%	44.9%	45.5%	45.5%	45.5%	–
Inc. Before Equity Items	39,985	58,566	64,970	61,049	224,570	58,169	73,947	88,402	76,960	297,478	313,210	333,020	351,250	12.0
Minority Interest	$ 61	$ (441)	$ (267)	$ (292)	$ (939)	$ (1,641)	$ (336)	$ (512)	$ (550)	$ (3,039)	$ (3,000)	$ (3,000)	$ (3,000)	(1.3)
Net Income–Highlands Ins.	1,915	907	1,875	(377)	4,320	2,128	1,740	2,542	2,000	8,410	9,500	9,500	9,500	13.0
Other Companies	705	997	1,292	402	3,396	754	544	1,133	600	3,031	3,500	3,500	3,500	15.5
Amortization of Goodwill	(497)	(7,453)	(443)	(442)	(8,835)	(441)	(442)	(221)	(111)	(1,215)	(440)	(440)	(440)	(63.8)
Net Income	$ 42,169	$ 52,576	$ 67,427	$ 60,360	$ 222,512	$ 58,969	$ 75,453	$ 91,254	$ 77,889	$ 304,665	$ 322,771	$ 342,580	$ 360,810	12.5
EPS	$0.73	$0.91	$1.17	$1.03	$3.84	$1.01	$1.28	$1.56	$1.35	$5.20	$5.51	$5.85	$6.16	12.5

OILFIELD SERVICES AND PRODUCTS

This group's revenues should increase substantially (by about 24%). The current high level of drilling activity in the U.S. is expected to extend into 1977 (after a normal seasonal decline in the winter months, February through April). The significance of enlarged natural gas development programs to Halliburton is that greater stimulation sales result from gas completions. Stimulation, a good profit business, could accelerate revenues by more than just the additional number of wells drilled. However, as Halliburton Services believes it is still restrained by capacity limitations from achieving its normal market share, 1977 growth could be limited by the rate of capacity additions. The company has budgeted more than half of its 1977 capital expenditure commitments for the oilfield services and products group, i.e., about $140 million, a significantly larger percentage than in the past five years. The variance in our operating earnings estimate indicates a range of increase from 22% to 25%. We are tentative about margins for several reasons: 1. Margins are at an historical peak from which further gains are less likely. While activity may show a strong increase, the rate of gain may not be as steep as in recent years. 2. Equipment operating rates have been unusually high. Some older equipment may be due for replacement and personnel have been working at above sustainable levels. On the other hand, the experience gained over the past several years has resulted in efficiency increases as workers went down the learning curves, and the company's equipment has been more optimally located to service customers. Over the longer term we expect HAL's oilfield service group to record above average results as the positive trends for higher natural gas prices continue to accrue to the company's benefit. If massive hydraulic fracturing is developed to the point where the technique is more broadly utilized to release gas from tight reservoirs, (more a question of fluids and propping agents used in specific reservoirs than HAL's pumping technology) revenues could expand dramatically.

IMCO's drilling mud sales, which have been soft in 1976, a result of softer drilling activity and a shift of drilling to simpler wells, should improve in 1977 due to increased drilling of difficult, deep wells and the general uptrend in U.S. drilling. Otis' sales continue on a par with the group as a whole.

ENGINEERING & CONSTRUCTION

Forecasts of Halliburton's Engineering & Construction activities are, by the nature of the business, normally subject to greater error, both in revenues and margins. 1977 is no exception, and due to the decline of pipeline work in the North Sea—the area of greatest expansion over the past five years—even more difficult to call. 1977 could be a year when total revenues grow modestly, margins decline somewhat from recent peaks as operating rates of marine equipment decline (especially in the North Sea), and hence operating income may range between modestly down (our conservatism—management expects flat results) to moderately upwards. Much may depend upon *bread and butter* marine projects taken on a short term basis, capital spending on industrial plants in the U.S., and enlargement of engineering work. Backlogs continue at high levels (primarily power plants and industrial projects) and totaled $7.2 billion as of September 1976.

Nevertheless, 1977 could be a period of improving marine backlogs—perceived as well as signed. As the first round North Sea development projects is brought to completion, the oil industry's cash flow will improve as production comes on stream. While we would expect

that second round development will have a more leisurely pace, the volume could be substantial as there could be more medium sized fields, each needing production systems and, at least, gathering pipelines. Thus, as volume of work completed declines, the offset, at least in regard to investor expectations would be new orders for future work.

An example is the award of the Statfyjord *B* platform engineering and management project to HAL's Brown and Root group, a member of a consortium that includes Norwegian firms. Similarly, B&R is a member of another Norwegian consortium bidding on the Statfjord oil pipeline project. Other recent contracts to Brown & Root have included a several hundred million dollar gas processing plant in Canada and the construction portion of a contract for a $4-500 million petrochemical complex for Exxon in Baytown, Texas. Discovery of commercial hydrocarbon reserves offshore the U.S. East Coast (exploratory drilling should start in early 1977) or the Gulf of Alaska could initiate another major marine development phase.

SPECIALTY PRODUCTS

This small, but profitable group, sells spinoffs of Halliburton's oilfield products to general industry. In addition, its manufacturing facilities have been used to augment Halliburton's Oilfield Group's plants when their capacity was strained. In 1977, we expect another fine year, particularly in rail car construction, helped by government guarantees.

FINANCES–DIVIDEND POLICY

Halliburton's financial structure has been improving substantially. Funds generated by operations in 1976 will exceed uses by about $130 million compared to a negative figure of $8 million in 1975. This figure's increase will amount to over $190 million in 1977. Long term debt of $315 million, was 18% of total capitalization (as of 9/30/76) as compared to 21% at the end of 1975. Cash and equivalents stood at $440 million on 9/30/76 versus $195 million on 12/31/75.

The 1977 capital budget commitment recently announced was for $262 million (when the 1976 budget was first announced it was for $250 million but grew to $317 million as the year progressed). Thus, judging from prior events the 1977 budget commitments should expand as well.

We expect capital spending in 1977 to total about $335 versus $350 million in 1976 and $336 million in 1975. More than half of 1977 expenditures will be used for the expansion of Halliburton's Oilfield Service capabilities; other major projects include modification of Brown and Root marine construction barges and a new launch barge for platform installation. On November 18, 1976, the company announced a special dividend of $0.24–making the total dividend payment for the year $0.80. Given the company's strong cash flow and financial position, we would expect the regular dividend rate to be raised to at least $0.80 for 1977, (a payout ratio of only 14-17%) and perhaps even higher to $1.00, thus 1977 total payment ought to exceed total dividend payments in 1976. In our 1977 source and application of funds analysis we have assumed a dividend rate of $0.80.

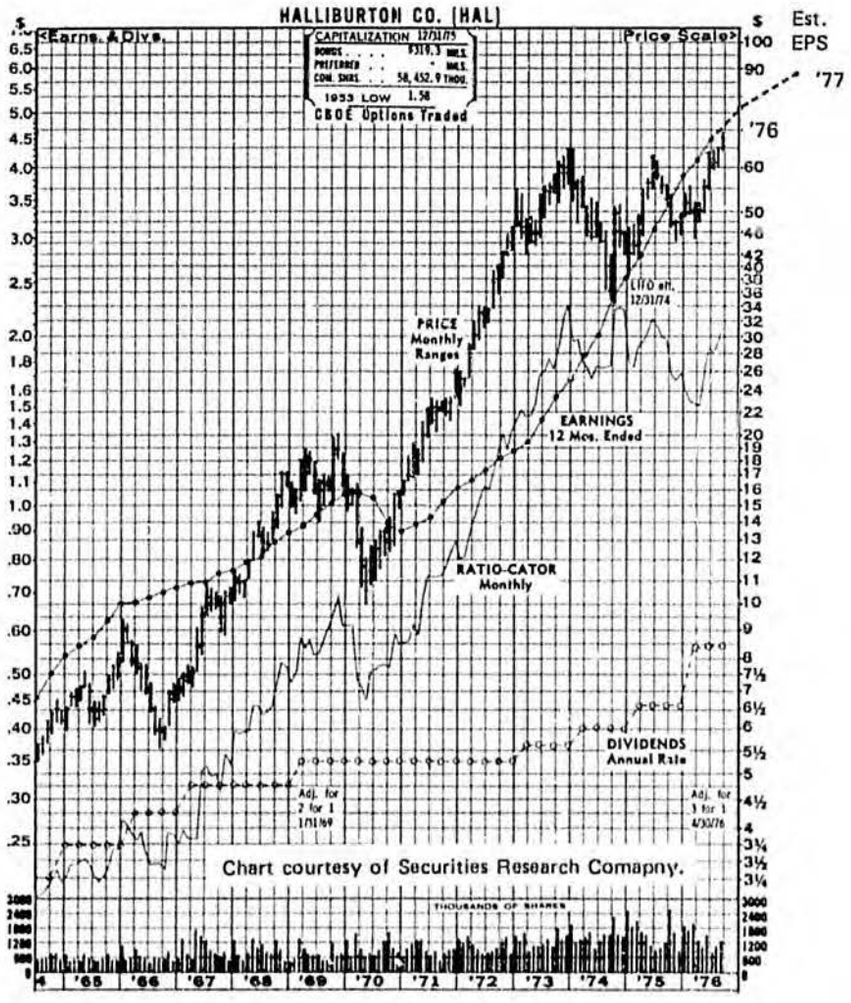
HALLIBURTON COMPANY
SOURCES & APPLICATIONS OF FUNDS
($ in Thousands)

	1975	1976	1977E
Operating Sources (Uses)			
Net Income	$222,513	$304,665	$336,000
D, D&A	116,437	167,000	175,000
Book Value of Equip. Retired	6,308	9,000	10,000
Deferred Taxes & Other	50,369	58,000	55,000
Sources - Subtotal	$395,627	$539,000	$576,000
Capital Expenditures	$(335,568)	$(350,000)	$(335,000)
Other (Net)	(838)	–	–
Dividends	(25,460)	(46,880)	(47,000)
Investment & Advances to Related Companies & Other	(41,288)	(13,000)	–
Uses - Subtotal	$(403,154)	$(410,000)	$(382,000)
Net Operating Sources (Uses)	$ (7,527)	$129,000	$194,000
Non-Operating Sources (Uses)			
Stock Issued - Net	$ 28,385	$ 170	–
New Long Term Debt	150,785	5,000	–
Less Repayments	(33,841)	(4,700)	(5,000)
Goodwill & Net Property of Subsidiary Sold	–	53,752	–
Net	145,329	54,222	(5,000)
Working Capital Increase	$137,802	$183,222	$189,000

INSTITUTIONAL HOLDINGS

Halliburton's stock is broadly held by institutions. On september 30, 1976, investment company's and bank trust departments held about 30.8% of Halliburton's stock (18.1 million shares). With institutions more yield conscious, and given HAL's relatively low current yield, this could be a problem. On the other hand, Halliburton's strong cash flow, increasing capability for dividend increases and above average expected growth rate should coalesce for a better than average stock performance.

RR-76-178 —Research Department--



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HALLIBURTON COMPANY

CAPITALIZATION (9/30/76)

	Amount (000,000)	Percent
Long Term Debt	$ 314.9	18.0%
Deferred Taxes	131.3	7.5
Common Equity	1,306.9	75.5
Total Capital	$1,753.1	100.0%

STOCK OWNERSHIP

	Amount (000)	Percent
Management	460	0.8%
Institutions	18,054	30.8
Other	40,058	68.4
	58,572	100.0%

FINANCIAL SUMMARY

Fiscal Year	1971	1972	1973	1974	1975	1976E	1977E
Operating Data (000,000)							
Revenues	$1,299.4	$1,422.3	$2,131.0	$3,098.4	$4,209.6	$4,663.0	$5,014.0
Depreciation	41.8	51.0	65.4	86.6	116.4	170.0	160.0
Pretax Income	97.6	114.6	152.5	271.8	405.9	540.0	611.1
Taxes	41.7	48.6	62.0	120.2	181.3	242.6	278.0
Net Income	55.9	66.0	90.4	146.2	222.5	304.1	342.6
Operating Ratios							
Pretax Margin	7.5%	8.1%	6.9%	8.8%	9.6%	11.6%	12.2%
Tax Rate	42.7%	42.4%	42.4%	44.2%	44.9%	44.9%	45.5%
Net Margin	4.3%	4.8%	4.2%	4.7%	5.3%	6.5%	6.7%
Equity Turnover	3.6X	3.4X	4.2X	3.8X	4.3X	3.8X	3.3X
Receivables/Sales	13.8%	16.7%	16.9%	15.4%	14.5%	–	–
Return on Average Equity	15.4%	15.9%	17.8%	18.1%	22.8%	24.7%	22.4%
Per Share Data							
EPS	$1.08	$1.26	$1.68	$2.54	$3.84	$5.20	$5.85
Dividends	0.35	0.35	0.375	0.40	0.44	0.80*	0.80
Price Range	26-15	47-22	65-41	64-34	63-38	70-44	–
P/E Range	24-14	38-18	39-25	26-14	16-10	13-8	–
Average P/E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Shares Outstg. (000's Avg.)	51,963	52,791	53,817	57,606	57,879	58,583	58,650
Balance Sheet Data							
Working Capital	143.3	187.0	226.7	336.1	473.9	660.0	–
Current Ratio	1.7X	1.8X	1.7X	1.8X	1.8X	1.9X	–
Long Term Debt	99.0	203.2	113.6	201.2	318.2	312.0	307.0
Common Equity	389.9	438.1	749.7	876.1	1,103.3	1,363.5	1,652.0
Total Capitalization	489.0	641.3	863.3	1,563.8	2,092.1	2,500.0	–

*Includes special dividend of $0.24 per share.

White, Weld & Co.
Incorporated

ANALYST NOTES

February 3, 1977
John H. Hayward, Jr.

BAKER INTERNATIONAL
HIGHLIGHTS OF MEETINGS WITH MANAGEMENT
Baker Corporation – January 17, 1977
Reed Tool Co. – January 14, 1977

POLITICAL ENVIRONMENT OF OIL INDUSTRY – E. H. Clark Jr.

OPEC–still foresee 25% crude price increase between 12/76 and 12/78. Clark sees North/South Conference as being more important than Mid-East Peace as there is concern over loans to less developed countries (to pay for oil). Oil discovery rate falling in some OPEC states–the more finite the total reserves the higher the price–this might lead to rationing in the late 70's due to lack of ability of some OPEC countries to absorb capital.

Foreign Exploration & Production–exploration drilling in international waters expected to remain in doldrums in 1977. Risk is takeover after many years of negative cash flow during exploration and development. Risk is too great for private oil companies–but development of existing fields is healthy and international workover market is beginning to show it's head. E&P spending outlook flat in foreign markets by private companies.

U.S. Outlook–feel Carter is O.K. on Natural Gas–but see no deregulation during his first term (N.B.–this was before the current gas shortage). Problem is to change attitude of American people–can't be done just by leader's exhortations. Also foresee relief on old/new oil problem. U.S. oil company cash flows in best shape for a long time–conclusion of North Slope and North Sea cash drain. See U.S. E&P up 20%+ in 1977–Next 5 years in 15-25% corridor (8% inflation assumption–so this is 7-17% real growth).

Old oil price and entitlements hurt remedial work in U.S.–14% growth expected in 1977 versus 20% for total E&P. With incentives for remedial work as they are, some find it better to leave oil in ground and import foreign crude. A backlog though for the future.

BAKER INTERNATIONAL–CORPORATE DEVELOPMENTS

Baker Oil Tools Group (Clark)–prior to marketing restructure in 1976, product line had grown too broad for one man to sell all products effectively. In fact, product grouping had already taken place on a defacto basis. Found that sales organizations could be split up without great overhead penalty as margins of Sales Units with $600,000 to $2 million in volume about same. Reorganization reduced customer confusion and focus attention on unit which could now be held more accountable. Benefits–after reorganization sales of Bakerline primary cementing tools about tripled in 1976. Baker Packers have lost market share to Otis over past 7-8 years as Otis expanded into Baker's market, but Baker has taken market share from Otis' traditional area–downhole flow control and safety equipment, in same time frame.

Drilling Services Group (Joseph Sheldon)–mud sales should increase at a good rate in 1977–but inability to pass on cost increases due to lower prices of independents (U.S., U.K., and Norwegian) will keep profit gain well below corporate average. Don't see price pressure off until late 1977. Barite (the weighting agent in mud) reserves are much more satisfactory at Milchen (Baker) now than when purchased in 1971. Have as good sales/reserve ratio as any in industry–but Dresser's Macrobar still by far the largest total reserves. New high quality reserves help in blending. Smaller mud companies get bentonite and barite from the majors (Macrobar, Baroid [National Lead], Milchen, and IMCO [Halliburton]).

Exploration Logging (Mud Logging)–revenue growth rate much faster than wireline logging–but total market only a *very* small fraction of total wireline revenues.

Reed Tool (Clark–1/16/77)–(Sidney A. Shuman–1/14/77)–Reed–the great disappointment of 1976. Market share loss due to less hard rock and deep drilling (Reed's strong suit). Quality control was poor in 1975 and early 1976 as old Reed management pushed all the bits it could out the door. BKO management rapidly worked to eliminate this problem soon after the acquisition–and instituted double quality control checks. Hurt Reed's image short-term–management does not believe it will hurt on a long-term basis.

Clark looks to good 1977–deeper drilling–a less than normal seasonal decline in activity–a trend back to premium bits. Clark feels problems at Reed–manufacturing, quality, cost and inventory control–are on their way to being solved by new people at Reed. All this has already helped Reed's margins in BKO's first fiscal quarter. Growth in late 1970's could be limited by U.S. rig availability.

Management does not fear overcapacity–real five year growth of 5% should fully utilize capacity (even new Security [Dresser] plant by 1979.) (Present capacity worldwide of *nominal* bit production–HT–125,000 units, SII–100,000 units, Reed–70,000, Security–50,000 (plus 30,000

for new Louisiana plant in 1978). Marketing opportunities exist for Reed in geographical expansion—HT only one with 100% worldwide coverage. Reed still has its problems—but big ones behind it—earnings should improve dramatically in 1977—to *much* better than company did in 1975.

Tool Joint capacity increased by 30+%—Backlogs 16-18 months (about 30-35% of this may be hedge ordering). Does not fear Smith Tool entry into business.

Mining Clark—(Warren Kane)—Warren Kane, formerly President of Fluor Utah, but was on the Board of Baker since 1971, joined the company to head its Mining group in late 1976. His goal is to come up with a plan of attack for this area which offers good long-term potentials.

1976 was not a good year. Revenues were down 9%. Operating income down 24%. 1977 look for good revenue increase despite poor outlook for copper, iron ore and delays in coal development. Gain from instrumentation sales, better use of present facilities, more sampling of coal (as a basis for payment), and improved inventory control of Reed's mining bits.

Future concentration will be on coal—which is destined to be the big swing fuel as the energy problem hits in the 1980's.

CORPORATE STRATEGIES—Clark

Longer range *anticipation* of markets has been of key value to Baker (as opposed to companies who only have proprietary skills or technologies). Management's early warning systems enable them to *respond quickly* to problems and avoid getting too deep into a hole—especially important in acquisitions, for example: BKO was instituting major changes at Reed within several months of its acquisition.

BKO's current net margins and policy of 50% debt to equity ratio will finance a 22-24% growth rate. Future, as the past, will be a blend of acquisitions and developments of existing lines of business—Most acquisitions in current lines of business—but mining will be a stepout.

Earnings—Management would not quarrel with a $4.25 EPS estimate for 1977. Management suggested that quarterly progression could be as follows:

FY Ended 9/30	1976	1977E	% Change
1st Quarter	$0.85	$0.90A	5.9%
2nd Quarter	0.85	1.05	23.5
3rd Quarter	0.87	1.10	26.4
4th Quarter	0.95	1.20	26.3
Year	$3.52	$4.25	20.7%

RW-77-34

—Research Department—

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White, Weld & Co.
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RESEARCH WIRE

February 8, 1977
John H. Hayward, Jr.
(212) 285-2032

HALLIBURTON COMPANY (HAL)

Price		Dividend		EPS		P/E
2/7/77:	58 5/8	Rate:	$0.80	1977E:	$5.85	10.2x
1976-77 Range:	69-48	Yield:	1.4%	1976A:	$5.22	11.5x

1976 FOURTH QUARTER AND ANNUAL RESULTS

Halliburton reported earnings for it's fourth quarter of $1.37 per share - a gain of 33% the prior year period and in line with our estimate of $1.35 per share. Revenues increased 22% to $1,275 million. Earnings for the year were $5.22 per share versus $3.84 - a gain of 36% on a revenue increase of 15.6% to $4.86 billion, despite an increase in HAL's tax rate to 45.4% from 44.7% (ITC added about $0.30 per share to earnings versus $0.23 in 1975).

DIVISIONAL ANALYSIS

Oilfield Service revenues increased about in line with expectations (18% in the quarter to $289 million and 22.3% for the year to $1,058 million - see Table 1). However, while fourth quarter operating margins were expected to decline from the third quarter (a normal seasonal variation except in 1975) the drop to 22.3% (versus 23.3% in 1975 and 1976's third quarter margins of 25.1%) came as somewhat of a surprise.

Management indicates that some of this decline was due to year end adjustments, including extra compensation to U.S. Nationals employed abroad to make up for increased U.S. taxes due to the Tax Reform Act of 1976. However, this may not explain the entire decline. The company states that it has not experienced price or operating rate softness, and is currently working up detailed analysis of the Oilfield Services quarter. One factor that could have affected the quarter is a decline in reported U.S. well completions relative to a year ago (about 10-12% down) possibly reflecting the softness in the rig count in the late winter and spring of 1976. U.S. well completions for 1976 as a whole are expected to be up 5-6% versus the 14% gain reported through the first nine months (given the current rig count and other indicators we would expect 1977 to be a banner year). On the other hand, since revenue items were on target, some in the company suggest that the fourth quarter should not be construed to indicate a downward trend in margins, but rather HAL got caught by some material cost increases it did not pass on. The first quarter margins

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TABLE 1

HALLIBURTON COMPANY
CONSOLIDATED FINANCIAL STATEMENTS -DIVISIONAL RESULTS
($ In Thousands)

	WW Est. of 12/10/76		Actual		1977 Estimate Ranges			% Change on Med.
	1976 4th Qtr.	1976 Year	1976 4th Qtr.	1976 Year	Low	Median	High	1976-1977
REVENUES								
Oilfield Services	$295,000	$1,064,200	$288,800	$1,058,000	$1,320,000	$1,320,000	$1,320,000	24.0%
Engineering/Construction	750,000	3,490,000	960,900	3,701,000	3,500,000	3,500,000	3,900,000	0.2
Specialty Services	26,000	108,700	25,100	107,800	122,000	122,000	125,000	12.2
TOTAL	$1,071,000	$4,663,023	$1,274,800	$4,866,294	$5,014,000	$5,014,000	$5,345,000	7.5%
OPERATING INCOME								
Oilfield Services	$ 72,280	$ 259,580	$ 64,300	$ 251,600	$ 317,000	$ 323,400	$ 331,300	24.6%
Engineering/Construction	65,250	274,950	68,700	278,400	245,000	274,950	300,100	0
Specialty Services	4,300	17,900	3,000	16,600	20,200	20,200	20,600	12.8
TOTAL	$ 141,830	$ 552,393	$ 136,000	$ 546,600	$ 582,200	$ 618,550	$ 652,000	12.0
OPERATING MARGINS								
Oilfield Services	24.5%	24.3%	22.3%	23.8%	24.0%	24.5%	24.5%	-
Engineering/Construction	8.7	7.9	7.1	7.5	7.0	7.8	7.7	-
Specialty Services	16.5	16.5	12.0	15.4	16.5	16.5	16.5	-
Interest Expense	$(7,400)	$(29,464)	$1,874	$8,598	$(29,000)	$(29,000)	$(29,000)	
Interest Income	5,000	16,050			20,000	20,000	20,000	
Other Inc. (Exp.) (Net)	500	1,079			1,500	1,500	1,500	
Income Before Taxes & Equity Items	$139,930	$540,058	$137,874	$538,002	$574,700	$611,050	$644,500	13.1
Margin	13.0%	11.6%	10.8%	11.1%	11.5%	12.2%	12.1%	-
Provision For Taxes	$ 62,969	$242,579	$ 64,795	$244,405	$261,490	$278,030	$293,250	14.6
Tax Rate	45.0%	44.9%	47.0%	45.4%	45.5%	45.5%	45.5%	-
Inc. Before Equity Items	76,960	297,478	73,079	293,597	313,210	333,020	351,250	12.0
Minority Interest	$ (550)	$ (3,039)	$6,725	$11,883	$ (3,000)	$(3,000)	$ (3,000)	
Net Income -Highlands Ins.	2,000	8,410			9,500	9,500	9,500	
Other Companies	600	3,031			3,500	3,500	3,500	
Amortization of Goodwill	(111)	(1,215)			(440)	(440)	(440)	
Net Income	$77,889	$304,665	$79,804	$305,480	$322,771	$342,580	$360,810	12.4
EPS	$1.35	$5.20	$1.37	$5.22	$5.51	$5.85	$6.16	12.5

will be telling, especially since it's Oilfield Services that are expected to perform well over the next year or so while marine construction is in the doldrums.

HALLIBURTON OILFIELD SERVICE MARGINS

	1975	1976
1st Quarter	21.5%	23.9%
2nd Quarter	21.5	23.9
3rd Quarter	23.0	25.1
4th Quarter	23.3	22.3
Year	22.2%	23.8%

Engineering and Construction revenues were about $200 million higher than our estimate, but the variance was mainly low margin industrial construction items (i.e. customer supplied material). Marine construction revenues in the fourth quarter were about $65 million higher than last year's fourth quarter - after being about flat for the nine months (up 7% for the year as a whole to about $990 million), a result of the High Island project in the Gulf of Mexico, and continued good work levels in the North Sea. Operating income results were about as expected - though margins were below our estimates due to large amounts of customer supplied items and a low engineering content in industrial construction revenues.

Specialty Products margins down below earlier quarters in the year - operating income ran about $1.3 million behind our estimate for quarter. Highlands insurance profit for the quarter, $4.4 million, brought yearly results to $10.7 million (up 149% from 1975). Fourth quarter results were almost double next best prior quarter.

1977 OUTLOOK AND STOCK EVALUATION

We have not changed our estimate of $5.85 (in a range of $5.50-$6.15) for the current year. Though we will be watching first quarter Oilfield Service margins closely. We expect that given the current U.S. drilling activity and new F.P.C. gas prices (not to mention the possibility of decontrol), revenues in this area should be strong.

The stock at 58 5/8 is selling at 10.0x our median estimate, or a 6.4 premium to the S&P 500 multiples. Not a large premium for a company with a favorable long term outlook. On the other hand, with more institutional investments being made on an indexed basis, and with HAL comprising (as of 9/30/76) 0.88% of institutional holdings (Spectrum Banks & Investment companies) versus 0.56% of the S&P 500, institutional buying could be limited. In a time of flux regarding it's near term earnings outlook (the marine construction question - basically) - we are only neutral on the stock for the near term.

RW 77-35

White, Weld & Co.
Incorporated

Industry Survey

John H. Hayward, Jr.
(212) 285-2032

February 14, 1977

OFFSHORE DRILLING INDUSTRY

	Price 1/10/77	1976-77 Range	E.P.S. 1975	1976	1977E	1978E	P/E 1977	Div.	Yield
Ocean Drilling & Exploration (ODECO) (Dec)	26 3/4 bid	35-23	$3.24	$2.35[2]	$2.5[illegible]	$4.00	10.5x	$0.20	0.8%
SEDCO (June)	34 7/8	36-22	3.69	4.34	5.00	5.40	6.9x	0.30	0.9
Western Company of North America (Dec)	18	18-12	2.72[1]	2.46	2.80	[illegible] 25	6.4x	0.40	2.2

We believe that significant opportunity for capital appreciation exists in the offshore drilling industry. Specifically, we believe the common stocks of ODECO (26 3/4 bid), SEDCO (34 7/8) and (where appropriate) The Western Company of North America (18) are attractive.

We believe that the large over capacity problem that has hurt margins and earnings is on it's way to being worked off. We believe the period of greatest over capacity will occur in the present quarter (new rig additions are minimal after April), that with the broadening of the offshore drilling market (see below) spot day rates may have already reached their nadir and are rebounding. Consequently, operating rates should improve as the current year progresses. Therefore, margins, earnings and stock prices may move to anticipate this. By 1979 (if not 1978), normal operating rates (93%) are a possibility and hence, better day rates should return to the industry. The stocks of the offshore drilling companies have been battered over the past several years, and are selling at depressed levels both on an absolute basis (roughly 50% below their highs), and also relative to earnings, cash flow and book value.

Thus, it is timely to invest in offshore drilling contractors. The group is still out of fashion, but the outlook is improving. In addition, ODECO's oil and gas production and Western's stimulation services will be additional plusses to those companies.

[1] Operating Earnings - exclude earnings of $1.93 per share from sale of two offshore drilling rigs.

[2] Fully diluted earnings from operations - excludes gains totaling $1.05 per share from sale of 50% of company's interest in diving subsidiary and gain from excess of insurance proceeds over book value of drilling rig lost in 1975.

BACKGROUND

For the past several years, the offshore drilling industry has been in a period of cyclical decline. 1) Oil industry exploratory cash flows were strained by large capital investments in several projects of major proportions and yielded no current return (i.e. the development of the North Slope and the initial phase of development in the North Sea.) As these projects come on stream, available cash flows should expand. 2) Political uncertainties in many countries and changes in U.S. tax laws increased the risk of exploration in many parts of the world. 3) The deferral of U.S. frontier Offshore Continental Shelf lease sales and perhaps just as importantly, the discovery of only a few oil and gas formations of sufficient size to attract broad scale industry exploration activity. All these factors lowered the demand growth for mobile offshore drilling rigs.

While we estimate that Exploration and Production budgets worldwide have grown at a 26% rate between 1974 and 1977, most of these new funds have gone towards development, particularly the U.S. onshore, or been consumed by inflation. Between January 1975 and January 1977, active "competitive" offshore rigs increased at only a 19% rate (revenues grew somewhat faster due to the use of more expensive rigs and inflation) while "competitive" rigs available increased at a 29% rate, consequently, the fleet operating rate declined and was accompanied by an inevitable decline in rig day rates.

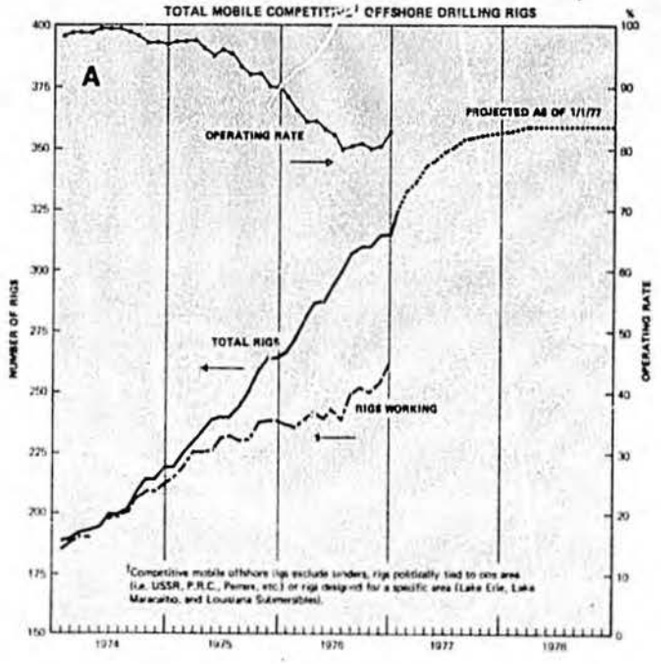
It is fair to say that the current problem of the Offshore Drilling Industry is not lack of demand (growth), but rather result of over capacity brought about by over building. Some would place the blame on new foreign entrants, many of whom had certain tax advantages. On the other hand, one could argue that the extraordinary returns available and the high operating rates would have attracted many new entrants even without tax breaks.

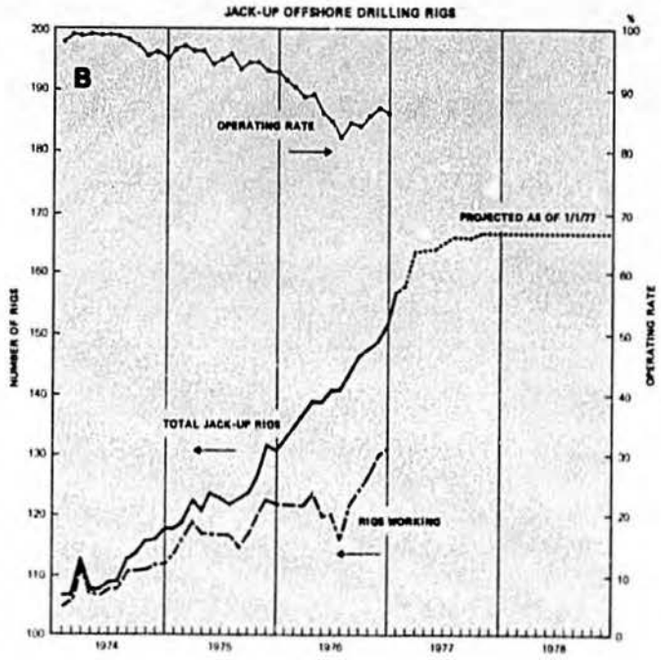
It should be noted that most of the established contractors stopped ordering rigs in early 1974 - unless a firm multi-year contract was in hand though others did not do so. Rig order rates in recent years were as follows:

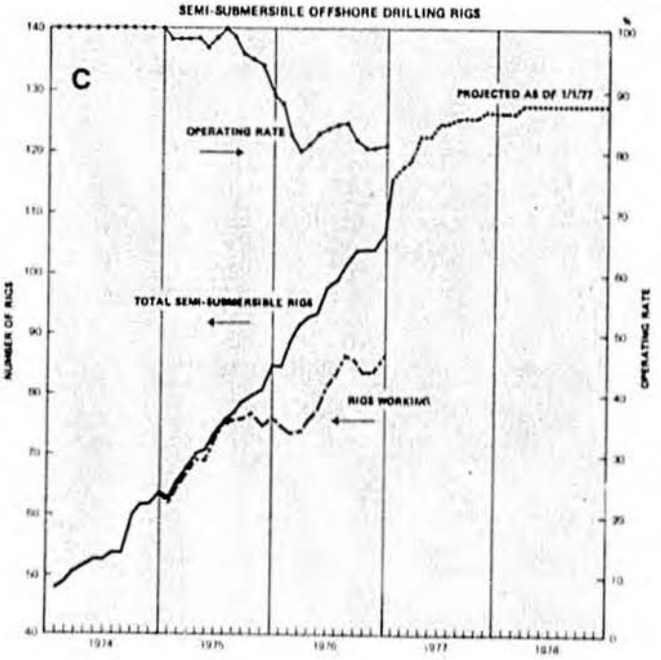
1973	1974	1975	1976
58	112	24	6

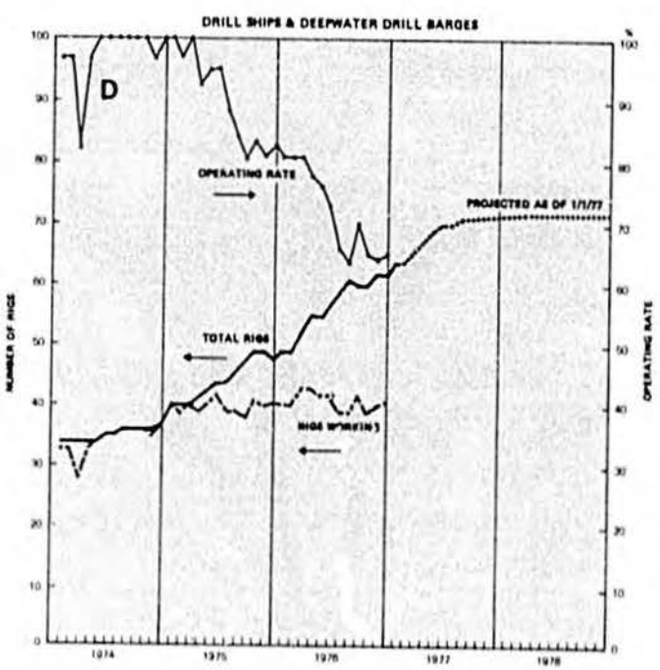
1976 saw only 6 new orders placed (four by national oil companies - U.S.S.R., Brazil, Abu Dhabi and U.K., and two jackups ordered by Rowan). If rig orders since late 1974 had not been made, the industry would be in equilibrium. However, at present, there are 65 units idle (no contract) out of a total of 435 (85% operating rate) and 56 units idle out of 316 so called "competitive" rigs (an 82% operating rate). These "competitive" rigs exclude tenders, rigs tied to one country (i.e. U.S.S.R., China, Pemex, etc...) and rigs designed for a specific area (i.e. Lake Maracaibo, Lake Erie, and the Louisiana Submersibles). It is in the total

competitive rigs that most of the new additions are being made, in Chart A we have graphed the total competitive rigs, rig additions, rigs operating and operating rates. Charts B, C, and D depict the supply/demand balance and operating rates of jackup rigs, semi-submersible rigs, and drill ships and deepwater drill barges respectively.









The effect of this over supply has now been felt. Contractors with idle rigs lowered prices to improve their competitive position - day rates plummeted. For example, a $30 million semi-submersible getting $40,000 per day in 1974 (about a third more than historical industry norm), might currently lease for between $20-25,000 per day.

The decline in rate was compounded by the thinness of the market - especially in mid 1976. As many of the oil company's already had the rigs under contract to drill thier programmed wells, the few new projects drew a host of competition. This situation is improving, as long term rig contracts entered into in 1974 and 1975 expire - the oil company is free to choose from many contractors. Thus, while there are more rigs idle than a year ago when ten rigs may have been bidding three contracts, today there may be 30 rigs bidding for 20 or 25 projects. The contractor knowing there are more jobs available may not be so desperate to cut price.

INDUSTRY OUTLOOK

Predicting demand for drilling rigs is a chancey art. The problem comes down to how one takes into account; political changes, incentives and government tax policies, acreage offerings, concession expiration dates, availability of cash for exploration.

Perhaps for short term projections, intuitive reactions are best. When all are saying there "isn't going to be over supply" sure enough there are too many rigs. When gloom and doom prevails - the market may turn up. However, we believe the bottom is at hand, the number of active offshore drilling rigs will continue to increase based on trends of the recent past. The Gulf of Mexico should continue strong, and gradual improvement will occur in overseas and U.S. frontier areas. The rate of this improvement will depend on several factors including: 1) fifth round licensing in the North Sea, 2) resolution of U.K. participation on present licenses (which could accelerate exploration work for the selection of the portion of past license tracts to be returned to the government in 1978), 3) U.S. OCS activity (new lease sales, successful exploration in frontier areas, and the rate of issuance of drilling permits in new areas).

The current quarter appears to be the one with the greatest oversupply. After this quarter, new fleet additions flatten out dramatically. A continued increase in operating rigs, will increase industry operating rates. Thus, we believe we have seen the low in "spot" day rates. Though contractors who are still operating under "old" long term contracts may see their rates decline but for the industry as a whole, one will see an improvement.

COMPANY COMMENTS

Ocean Drilling & Exploration Company, is the largest drilling contractor in terms of number of rigs (40), and has significant oil and gas interests. Oil and gas revenues in 1976 were $42 million (22% of the total), but are expected to climb to the $100 million area in 1978 - excluding ODECO's 7% interest in the Ninian Field in the North Sea (which could add about $80 million to the total by 1980).

Earnings from Operations declined in 1976, despite a good improvement in oil and gas results, due to a sharp decline in the company's rig operating rate (from 98.5% in 1975 to about 85.1% in 1976). The company had seven long term rig contracts expire all at once (July 1976). In the market environment it was difficult to put all these rigs back to work on a timely basis. However, today ODECO has work contracts on all but three of it's rigs and has mobilized several rigs into markets where the market outlook is better. We believe the worst may be behind, and given ODECO's good reputation in the oil industry, are looking for an improving situation from here.

While earnings could have been held to better levels by cutting back exploration efforts in 1976 a time of poor drilling earnings, ODECO continued it's aggressive exploration policy. Exploration costs increased from $14.5 million in 1975 to about $16 million in 1976 (The company conservatively expenses all unsuccessful wells). As management believes it must develop opportunities in which to invest the large cash flows expected from oil and gas operation in the late 1970's and early 1980's, we would expect ODECO to continue to maintain it's exploration effort at a high level.

Earnings in 1976 were boosted by about $1.05 per share due to the excess of insurance proceeds over the book value of a drilling rig lost in 1975 and the sale of 50% of ODECO's interest in it's diving subsidiary. Looking ahead, we project earnings in 1977 will be $2.50 per share fully diluted (a 6% convertible Preferred was issued in 1976) in a range of $2.00-3.00. The broad range is necessary due to uncertainties to the timing - and rate of the expected drilling turnaround. Earnings in 1978 are tentatively estimated at $4.00 per share in a broader range of $3.00-5.00.

FINANCIAL SUMMARY
OCEAN DRILLING & EXPLORATION COMPANY
($000's)

	1976	1975	1974	1973	1972
Operating DATA (Dec)					
Revenues	$212,800	$201,690	$131,615	$ 90,837	$ 71,1?1
Pre-Tax Net	NA	50,318	39,663	22,391	16,7?7
Net Income	41,000[1]	36,663	27,866	18,762	15,039
EPS	$ 3.40[1]	$ 3.24	$ 2.46	$ 1.66	$ 1.31
Balance Sheet Data	9/30/76				
Working Capital	$ 47,671	$ (110?)	$ 23,627	$ 28,175	$ 18,008
Current Ratio	1.6x	.9?x	1.3x	1.7x	1.4x
Long Term Debt	178,778	193,?68	199,952	71,080	51,295
Common Equity	275,920	204,408	170,036	145,764	129,295

1 Includes $14,291,000 gain from excess of insurance proceeds over book value of drilling rig lost in 1975 and sale of 42.5% of ownership (50% of ODECO's share) in diving subsidiary; without these items EPS would have been about $2.35.

SEDCO, the third largest offshore drilling contractor (25 rigs) has done an admirable job in keeping it's string of rising earnings untarnished in this difficult time for the drilling industry. Earnings over the past 5 years (through 6/76) have grown at a 33% rate. The pattern has been:

Year Ended June 30	EPS	% Change from prior year
1972	$1.39	15.8%
1973	1.75	25.9
1974	2.36	34.9
1975	3.69	56.4
1976	4.43	20.1
1977E	5.00+	12.9
1978E	5.40 ($4.50-6.00)	8.0 (.10% to 20%)

SEDCO's success can be attributed to several factors: 1) A strong marketing effort emphasizing the largest oil companies as customers. 2) Building new rigs under multi-year term contracts, not on speculation. Adding to earnings in 1978, SEDCO has two semi-submersibles coming into it's fleet in the first half of calendar 1977 (one has no contract but SEDCO is a 50% partner with Royal Dutch Shell). Also, two dynamically positioned drill ships and a semi-submersible service vessel are to be added to the fleet in late 1977. 3) It's land pipeline construction company turned in a strong performance in fiscal 1976 (22% of SED's pretax income in 1976, or $13.2 million vs. the $3.0 million reported in fiscal 1975). 1977 should be a continuation of this trend - but 1978 pipeline results will be dependent upon landing new contracts in the Persian Gulf area (principally Iran) - hence, the possibility of a slight decline in earnings for next year. 4) Foreign onshore drilling added to the drilling group's earnings consistency.

SEDCO's strong marketing effort has been aided by the fact it did not have more than a few rigs available at any one time. But considering that it's day rates tend to be at some premium to the going market, and it's operating rates are in excess of the industry average, we regard the record as outstanding.

Looking toward the long term future - SEDCO has several partnerships in which it is developing the technology for floating production systems, and deep sea mining. While the commercial viability of either is not yet known, we admire SEDCO's adventuresome prospects for developing long term new business opportunities.

FINANCIAL SUMMARY
SEDCO, INC.
($000's)

	1976	1975	1974	1973	1972
Operating DATA (June)					
Revenues	$337,437	$229,875	$169,715	$125,470	$127,407
Pre-Tax	58,947	43,256	29,463	18,847	14,714
Net Income	44,347	37,594	23,964	17,347	13,231
EPS	$ 4.34	$ 3.69	$ 2.36	$ 1.75	$ 1.39
Balance Sheet					
Working Capital	$ 38,170	$ 25,396	$ 33,318	$ 13,410	$ 7,921
Current Ratio	1.4x	1.3x	1.5x	1.4x	1.3x
Long Term Debt	210,346	157,190	148,320	134,605	90,086
Common Equity	251,383	208,661	171,629	148,447	100,573

The Western Company of North America is one of the newer entrants into the offshore drilling industry (1971), expanding from it's base of oilwell stimulation and cementing services in the southwestern U.S. Now about the 12th largest company in the business (8 rigs), it's overly rapid expansion almost put the company in a financial squeeze in 1975 when it sold two rigs to generate cash. Today, it's debt load (long term debt and present value financing of leases) is still high; as of 9/30/76 it stood at about 73% of total capitalization. We estimate interest and lease coverage to have been 1.7 times in 1976.

New management, installed last year, has recognized the danger of the balance sheet in our opinion. Their strategy has been to insure adequate coverage of drilling rig debt service by keeping it's rigs working - even if this meant aggressive pricing. This has resulted in a 23% decline in drilling operating profit in 1976 versus 1975 despite the delivery of two new rigs, and a full year's operation of two other rigs. In essence, the company has kept it's fleet working and intact awaiting better times. In late 1977 Western, with it's 50% partner Exxon, took delivery of the Alaskan Star - a new $50+ million semi-submersible. Western financed it's $26 million position entirely by debt (7 years @ prime plus 2%). Over the initial 6 year contract period with Exxon (which management indicates has broad escallation clauses), Western's cash flow will pay down 90% of its debt plus interest expenses. In 1977, we cal-

culate the Alaskan Star could add about $1.5 million to earnings. We expect Western's drilling groups to report operating income levels about equal with 1976 results of $9.2 million (1976's first quarter results were quite strong). The earnings gains will come from the company's petroleum services group.

Western's Petroleum Services Group (stimulation and cementing) is the fourth largest competitor in this sector of the oilfield services industry. Halliburton, Dowell, and Hughes - BJ are the others. We expect this area to prosper as oil and gas is developed in more difficult reservoir conditions. Growth over the 1972-76 period has been impressive (revenues and operating income at a 32% compound rate). The company has expanded it's geographical areas of operation, and eroded the market position of some of it's competitors (Dowell and BJ). With improved gas prices and a high incentive price for oil, we look for operations to grow at a 14-15% rate over the next 5 years - excluding geographical expansion. WSN's growth in 1977 should be about 14-17%.

We look upon Western Company of North America to be a risk situation due to it's high balance sheet leverage. However, its strong position in one of the more attractive oilfield service markets (stimulation services) and its apparent defusing of the risk inherent in it's too rapid offshore drilling expansion, awaiting better times, makes the stock attractive, in our opinion, at 6.4 times estimated earnings.

FINANCIAL SUMMARY
THE WESTERN COMPANY OF NORTH AMERICA
($000's)

	1976	197[illegible]	1974	1973	1972
Operating DATA (Dec)					
Revenues	$132,774	$ 99,646	$ 61,753	$ 40,439	$ 31,772
Pre-Tax Net[1]	12,028	15,151	5,167	3,589	2,683
Net Income[1]	10,086	11,186	2,961	2,372	1,744
EPS[1]	$ 2.46	$ 2.75	$ 0.71	$ 0.58	$ 0.48
EPS (as reported)	2.46	4.70	0.71	0.58	0.48
Balance Sheet DATA	9/30/76				
Working Capital	$ 16,950	$ 15,900	$ 8,184	$ 4,195	$ 3,929
Current Ratio	1.8x	1.7x	1.7x	1.5x	1.7x
Long Term Debt & Present Value of Leases	144,570	111,002	68,413	34,751	11,609
Common Equity	44,600	38,197	19,765	16,663	13,801

[1] Operating Earnings - exclude gains from sale of Offshore Rigs in 1975

RR-77-29 Research Department

This report has been prepared by the Research Department of White, Weld & Co. Incorporated. The author of this report is an immediate relative of a member of the Board of Directors of ODECO and has had for several years an investment position in shares of the Company's Common Stock. Information received by the director is confidential and will not be communicated to White, Weld & Co. Incorporated, its agents or clients.

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White, Weld & Co.
Incorporated

Economic
Comment

A. Gary Shilling

December 13, 1976

THE BUSINESS OUTLOOK *

Are Supercycles and Hyperinflation Dead or Alive?

Summary and Conclusion

Most forecasters continue to view the current U.S. business recovery as not only typical of those in the postwar period, but also as the prelude to a renewed supercycle with hyper-inflation. The recovery to date, however, has been anything but normal because it has been dominated and, in our view, will continue to be dominated by two quite different forces: first, the unwinding of inflation and other imbalances built up in the 1965-1975 decade, and second, by the reaction of conservatism and retrenchment to the turmoil and trauma of that period and the resulting distrust of the political process in general.

These factors suggest that despite the election of Jimmy Carter and the continuation of an overwhelmingly Democratic Congress, no massive economic stimulus is likely in coming years, and Federal government expenditures will continue to grow more slowly than the economy. Consumer and business spending growth is also likely to be restrained in the remainder of the 1970's as a reflection of continuing caution. The foreign area of the U.S. economy is also likely to expand only moderately in the years ahead because a similar attitude of retrenchment is being felt in major countries abroad, and because the rapid postwar rebuilding and catching up in Europe and Japan has been essentially completed. Furthermore, the use of import

* We apologize for the length of this paper, but many clients have requested a rather complete rundown on our business outlook, and the reasons why we continue to expect more stable growth and less inflation than most forecasters.

quotas and other barriers to free trade by industrialized countries are likely to continue for some time as they attempt to unload their unemployment problems on others by increasing their exports and reducing their imports -- much to the detriment of everyone's economic performance.

Between now and the end of the decade, the U.S. economy should be growing moderately but above trend, which implies gradual increases in the employment of men and machines. Continued caution throughout the nation should prevent speculative, unsustainable spending patterns and the resulting recession for a number of years. With the economy expected to stay below full utilization of resources in the foreseeable future, inflation rates are likely to decline to a norm of 2% to 3%. The failure of many basic industrial price increases to stick in recent months indicates that now, as in the past, inflationary momentum cannot sustain itself in conditions of economic slack.

With moderate spending growth, the current surplus of funds in the economy as a whole should continue. This, plus lower inflation rates implies still lower long-term interest rates, and our earlier, eventual target of 6% or less for quality bond yields still seems valid.

This seemingly rosy forecast is not without its caveats. First, contrary to our assumption, Washington may attempt to rapidly reduce unemployment through massive economic stimulus. Excess demand, renewed inflation, and another round of economic controls could well result late in the decade, but could be anticipated much earlier in price and wage actions and in security markets.

Second, a worldwide financial crisis could stem from the huge balance of trade deficits of the underdeveloped countries. These nations require a constant infusion of new money from international lending agencies, and also from the world's major commercial banks. Anything, such as a large increase in OPEC oil prices, that caused a number of them to default on international debt repayments could rapidly spread financial difficulties all over the globe.

This forecast of stable, sustainable economic growth in an atmosphere that is relatively free of inflation is not accepted by many, but it is this disbelief and caution which should prevent any near-term deterioration into exuberant economic speculation and the resulting problems of serious inflation and recession. We believe that hyperinflation and supercycles are dead for a number of years, but only because most people see them as very much alive.

In assessing the economy in 1977 and beyond, it is probably useful to ask, "where are we in the business cycle," or perhaps more properly, "what kind of cycle are we in?" Most forecasters view the business recovery, now 1½ years old, as a typical postwar expansion. Furthermore, they see this recovery as only one more step on a never-ending treadmill to disaster. Starting in the mid 1960's, they note, each recession has been more severe than its predecessor, and each recovery has started with a higher rate of inflation. Following this train of thought to its logical -- or perhaps illogical -- conclusion, the economic machine will suffer more and more volatile oscillations until ultimately it is shaken to pieces by these supercycles and hyperinflation.

This sort of outlook is to be expected inasmuch as most forecasts of the future really boil down to projections of the recent past. Most of the times this approach works -- tomorrow usually is like today only hopefully a bit better. There are, however, times when the economy is crossing a watershed, and then this approach simply doesn't work. Now, in our opinion, is one of those times.

The Recovery - Dominating Factors

This does not suggest that we see the last ten years as irrelevant to our forecast, but rather that we do not see the future as a straight-line projection of the past decade. Instead, we think that two factors, very much relating to the 1965-1975 period, have been dominating the recovery to date, making it anything but a typical postwar affair, and are likely to continue to dominate for the rest of the decade.

First, is the unwinding of inflation and other imbalances developed during the 1965-1975 era. The momentum of inflation was initially built by the excess demand created by Vietnam spending and Great Society programs in the late 1960's. This momentum got another kick in 1971-1972 from the monetary and fiscal stimulating efforts that accompanied Nixon's bid for reelection. The resulting long-term pattern of accelerating inflation had, by 1973, created the impression among businessmen that shortages and inflation were here to stay. These impressions became convictions with the oil embargo which came on the very eve of the 1973-1975 recession. Even further inflationary forces were unleashed when economic controls were completely removed in 1974 -- during the recession itself.

With this pattern of ever increasing inflationary momentum, it is small wonder that the worst recession since the 1930's did not wipe out inflation, and as a result, that recovery started with inflation rates far from the low levels that would reflect the unemployment and slack industrial capacity conditions that prevailed at the end of the business correction.

The second factor that has influenced the recovery so far, and is likely to continue to do so, is the reaction of the conservatism and retrenchment to the turmoil of the last ten years that is now seen throughout the nation. This, of course, is a logical response to the unpopularity of the Vietnam War, the campus unrest, the race riots, disappointments with the Great Society programs, and distrust of politicians at all levels. People now seem to feel that political leaders can't run much of anything, whether it is foreign policy after Vietnam, the economy after the last two recessions and near runaway inflation, or even the political process after Watergate. Furthermore, the time distance that has now been put between us and the depression, as well as the recent inflationary surges, have reversed people's priorities, and the majority now put inflation ahead of unemployment as their number-one concern.

This last decade, then, was a very disruptive, experimental, and ultimately disappointing one -- one that generations of yet unborn candidates for PhD's in economic history will probably be culling over long after we are all dead and gone. The idea that we are now reacting to it not only makes good sense but also fits in beautifully with the 50-year Kondratieff Wave, named after an otherwise obscure Russian economist who, in the 1920's, first studied these fifty-year cycles in industrial countries. As a result of his studies, Kondratieff correctly predicted difficult times for the capital countries in the 1930's, but he made a strategic blunder for a Russian by suggesting that the capitalist countries would survive. The Soviet government's reaction was predictable. Kondratieff spent the rest of his career in Siberia, and his experience does serve as a constant object lesson with regard to making forecasts that are unpopular with the powers that be.

The exact rationale for a fifty-year cycle is not at all clear, and one should be cautious about suggesting that we all should be retired by 1982 -- the equivalent of 1929. Parallels are, however, intriguing. Fifty years ago the trauma of the first World War, the worldwide commodity boom that followed, and the severe inventory correction in 1920-1921, were followed by a decade of retrenchment in the 1920's. Similar circumstances surrounded the Civil War, the nation's greatest trauma, fifty years before World War I, and the War of 1812 fifty years preceding the Civil War.

Even Watergate had its parallels in the Teapot Dome scandal of the Harding Administration, and the scandals of President Grant's time. The swine flu made an appearance fifty years ago, although this may be pushing the analogy too far. The best explanation we can find for the fifty-year nature of the cycle, is that in a half century, everyone who indelibly remembered the last one, is dead or retired so everyone is convinced it can't happen again. Given the relative constancy of human nature, this means that people's attitudes are then set up for a rerun.

It Ain't Typical

In any event, the dominance of these two factors -- the unwinding of inflation and other excesses developed during the 1965-1975 decade, plus the reaction of retrenchment to that period -- explains why the ongoing business recovery has been anything but typical of the postwar experience. Inflation rates, rates of wage increase, loan demand, and interest rates are all below the levels reached at the trough of the recession -- anything but normal recovery behavior. Cautious attitudes explain why corporate bond issues remain heavy this late in the recovery as businessmen continue to rebuild liquidity, and to try to get away from their friendly bankers who weren't so friendly in 1973-1974.

The atmosphere of retrenchment also helps explain why plant and equipment spending has undershot businessmen's planned levels for six consecutive quarters. In a typical recovery, they spend more, not less than they planned. These cautious attitudes, as well as the inventory excesses of the early 1970's explain why inventory liquidation lasted through a full year of recovery, much longer than normal, and why inventory rebuilding since then has been extremely moderate.

Political Evidence of Unwinding and Reaction

The legacy of the last decade -- the unwinding and reaction to it -- can be seen at work in a number of areas. In the political arena, a shift to the right first became visible in the summer of 1975. Then, despite a 9.2% unemployment rate recorded at the time, the President vetoed two obvious pump-priming bills -- a job-creating bill and a housing bill -- and both vetoes were sustained by Congress. This was, and still remains, extraordinary. When we first suggested in late 1973 that unemployment rates might top 8%, we were told "there is no way the government can possibly stand for it, there would be riots in the streets."

Further vetoes of spending bills, even in an election year environment, also suggests that the long, liberal swing starting in 1933 has ended. The same is true of the recent surprisingly conservative actions of many Congressmen, Senators and Governors who were elected in 1974 as flaming liberals in reaction to Nixon and Watergate.

Despite this evidence of a political shift to the right, many now fear that the election of Jimmy Carter and the continuation of an overwhelmingly Democratic Congress will touch off another round of massive economic stimulus from Washington, particularly in light of the current economic pause. We do not feel, however, that Carter is a burning New Deal liberal with a global if not cosmic economic strategy, but rather see him as a pragmatic businessman without any overriding economic philosophy, as indicated by the flexibility of his economic policy positions since last spring.

In the presidential primaries, a rather conservative economic policy, plus an anti-Washington image, allowed Carter to knock off the New Deal Senators and other assorted liberals. With the nomination acceptance speech, however, he shifted to the left and assumed the role of a traditional Democrat, obviously an attempt to win the liberal wing of the party, and avoid the McGovern mistake of winning the nomination but not the party's backing. In the summer, he shifted back to the right when the polls showed that three-fourths of the voters considered themselves moderates or conservatives. At that time, Carter was emphasizing unemployment and inflation as coequal problems. Late in the campaign, the economic pause afforded him an opportunity to advocate an economic policy that differed from President Ford's and that, plus an opportunity to appeal to low-income, traditionally Democratic voters were probably responsible for his emphasis on unemployment and slow economic growth.

Since the election, Carter's economic policy appears to have again shifted back to the right with his suggestion that it might be four years before unemployment drops below 6% -- hardly in line with the very liberal Humphrey-Hawkins bill targets.

It is true that Carter owes political debts to the big city mayors, the blacks, and the labor unions, but he will probably want to be President of all the people and win the backing of the 49.5% of the voters who preferred somebody else on election day. It is also true that if, contrary to our view, the economy goes nowhere between now and early next year, a tax cut or other form of economic stimulus will probably be proposed and whisked through Congress. This, however, would also probably be true under Ford or anyone else in the White House, including Goldwater. On balance, though, we expect no massive stimulating programs to be proposed by the Administration, but rather that Carter, with a businessman's background, will react to economic events as they unfold.

Congress may also prove to be surprisingly stable and moderate in its actions. Despite the pledges of cooperation with the Administration, there is considerable skepticism of Carter on Capitol Hill, and any radical proposals for substantial economic policy changes might lead to considerable confrontation. Furthermore, Congress is likely to be careful of what bills it sends to the new President for signature. Under President Ford, the Democratic majorities in Congress knew they could send anything to the White House knowing that dear old Jerry would veto it, but now Carter might just sign some of those bills, much to the embarrassment of everyone, including their Congressional sponsors. Furthermore, Congress has shown more independence in the last several years than since the New Deal began four decades ago.

The new budget-making process which not only gives Congress overall responsibility for federal government spending and receipts, but also pretty well locks in the budget for a full fiscal year ahead, is a prime example of this.

The Federal Reserve, the third element in the Washington economics triangle, should also continue to be an instrument for holding down economic stimulus, now that Chairman Burns has decided to stay at least until his current term expires in early 1978. Despite some signs of willingness to cooperate with Carter and Congress, and hence preserve the independence of the Fed, Burns' overriding concern still appears to be control of inflation.

Overall, then, we feel that Federal economic stimulus will continue to be moderate and Federal spending will continue to grow more slowly than the total economy. State and local spending which has also been underperforming the economy lately -- for the first time in decades -- is also likely to continue this slower rate of growth as a result of voters' continuing rejection of the vast majority of bond issues and the lack of any big spending needs such as were required when the postwar babies flooded the education system.

Consumers and Businessmen - Continuing Caution

With government spending at all levels expected to grow more slowly than the economy, the private sector must, of course, grow more rapidly than overall activity, but this does not imply runaway activity by consumers and businessmen. Quite the contrary, consumers will probably continue to remain cautious and only slowly reduce their saving rates as they build confidence and liquidity. Businessmen will probably continue to improve their balance sheets and liquidity as memories of the burning they took in the recession continue to dominate their thinking. Inventory-sales ratios in real terms are still about 10% higher than in the mid 1960's, and are likely to work lower as businessmen increase inventories more slowly than sales. Plant and equipment spending will probably continue to grow faster than the economy, but not at runaway rates as a result of excess capacity, and the desire to improve liquidity and balance sheets.

Foreign Problems

A final component in the economy, the foreign sector, is not a big one for the U.S., but is important to the thinking of all of us, particularly because of some rather significant problems abroad. Over a year ago, we argued that the period of much more rapid growth outside the U.S. was over, and that the lack of strong upward momentum implies periodic recessions in Europe and Japan, as well as in the U.S. in the years ahead. However, the current slowdown abroad, after only several quarters of economic recovery from the first major worldwide recession since the 1930's, is not exactly what we had in mind by "periodic recessions".

Economic revival in Europe, Japan and Canada started late last fall as a result of the spreading influence of the U.S. recovery, and an ending of inventory liquidation throughout the world and the resulting growth of real incomes and consumer spending. This spring, however, recovery gave way to much slower growth as a result of deceleration of the U.S. expansion, but also because of a number of coinciding factors abroad which acted principally to reduce growth and real incomes and, hence, consumption.

Governments in Europe and Japan, with their strong pro full-employment policies, have reacted strongly to the renewed economic weakness and rising unemployment rates. Fearing both already large budget deficits and the future inflation that may result from continued rapid monetary growth, their main emphasis has been on increasing exports and reducing imports in order to spur domestic economic activity.

Unfortunately, this foreign trade game is one that everyone can't win. Although quotas and other non-tariff barriers to trade are being used in place of tariff walls, current actions today do resemble the trade wars of the 1930's. It is interesting to note that those tariff walls were erected by people who we now regard at best as too stupid to realize that their actions were detrimental to trade overall and to economic growth to each individual country, and at worst as absolutely evil. However, human nature does not change rapidly, and we now see people reacting to similar circumstances in similar ways.

Examples of these barriers are rampant -- quotas have been put on everything from steel to turkey wings and legs. The European Common Market's zeal to restrain imports from Japan is particularly conspicuous. Even in the United States, hardly a week goes by that some industry does not ask for quotas or other measures to get relief from import pressures, or request the Treasury to commence an anti-dumping investigation.

These actions, sad but true, are to be expected in times of domestic unemployment in the world's major industrialized countries, and, unfortunately, are part of the general retreat from internationalism that has resulted mainly from rising domestic economic problems in the past ten years. Currency value declines in Mexico, Australia, New Zealand and Canada that look suspiciously like competitive devaluations are symptomatic of the same disease. Politicians are, after all, elected by their own constituents, not by international referendum, so when troubles develop at home internationalism goes by the boards.

True, economic recovery abroad is expected to resume as a result of improving U.S. demand, and rising real incomes and improving consumer spending should follow from receding inflation rates throughout the world. Nevertheless, no runaway expansion abroad is expected, and unemployment rates should remain high enough to continue the current aggressiveness in foreign trade in the foreseeable future.

The overall effects on the U.S. of foreign trade battles and lower growth in other major countries should continue to be small because of limited American exposure to foreign trade. U.S. imports or exports, as a percentage of GNP are about 8%, while in Europe the number runs to 50% and higher. Furthermore, the U.S., like other lands, is progressively moving toward isolationism, and cutting herself off from foreign exposure -- consider, in the contest of internationalism, the nationwide zeal to be independent of foreign energy supplies! Like in the 1920's, the last comparable period in a Kondratieff Wave sense to what we may be going through, the U.S. may well enjoy a period of stable and substantial growth, while the rest of the world is experiencing severe problems. Let's hope that any parallel stops there and doesn't extend to the militarism of the 1930's which eventually resulted from unemployment and economic unrest in a number of countries.

Floating exchange rates provide another buffer to foreign exposure. Despite universal declines in inflation rates, price increases are likely to remain smaller in the U.S. than in most other countries, as has historically been the case in periods of peace. The reason, in our view, is that the U.S. has the least commitment to maintain full employment. There is, after all, a trade-off between full employment and inflation-- the fuller the employment, the higher the inflation rate. Some fear that higher inflation rates abroad will spread to the U.S. domestic economy, but floating exchange rates are likely to offset these inflation differentials among countries, as we have seen so well illustrated by the U.K. and the value of sterling in the past year.

An improving value of the dollar is also likely to limit foreign borrowing in the U.S. despite the fact that interest rates will probably continue to be lower here than abroad. As recently seen with the collapse of the Canadian dollar, loans in U.S. dollars that appear to be less expensive than in the borrower's own currency can prove to be anything but cheap when that currency declines significantly. Furthermore, nervousness about foreign loans by U.S. lenders, as well as slower economic growth abroad than many earlier believed, are likely to limit borrowing in the U.S. by foreigners.

Key Forecast Elements -- Moderate Growth

In any event, the prospects for moderate growth abroad in the longer run as well as in the near future, coupled with moderate domestic expansion in the government and private sectors in the years ahead suggests that the U.S. economy is not likely to expand at runaway rates. We expect 5% growth in real GNP in 1977 and in the rest of the years of the decade. This is above the trend or supply-side growth of 3 1/2% to 4% per year, so

unemployment rates should gradually decline and industrial utilization rates should gradually increase, but emphasis is on the word "gradually." This is, after all, a moderate rate of recovery and expansion considering the depth of the recession the economy has just endured. The reason, of course, is caution and moderation in all areas of the economy.

But, Sustainable Growth

This expansion, however, will probably be more sustainable than most. We are not suggesting that recessions have gone out of style. Far from it -- another one is lurking out there somewhere in the underbrush, but is likely to be postponed longer than normal because of the tremendous caution that we expect to continue to dominate spending decisions.

Contrary to the fears of those who see the current pause deteriorating into renewed recession, history shows us that economic expansions end with a bang, not with a whimper--not because people simply stop spending, but because spending gets unsustainably strong. People get so far from the last recession that they forget about it and embark on an inventory building surge, a plant and equipment spending boom, or a consumer goods spending spree. This unsustainable spending then collapses into recession when either people run out of dough or the Federal Reserve steps in to call the party to a halt. Considering the severity of the past recession and the continuing caution that resulted from it and from the turmoil of the last ten years, more time than normal will probably pass before people again embark on speculative forms of behavior. We may very well have an expansion that will last not the more normal three years, but maybe five -- something like the extended growth phase of the early 1960's during which people were also cautious for an extended period.

No Early Return to Full Employment, and Implications for Inflation

Another consequence of our forecast is that full employment of men and machines is unlikely before the early 1980's, given the modest rates of economic expansion we expect to continue and the considerable amounts of excess resources that are currently available in the economy. This leads to a very important forecast -- lower rates of inflation.

History shows very clearly that even though the momentum of inflation can outlive the excess demand that created it, it cannot continue to feed on itself indefinitely in an atmosphere of considerable economic slack. Rather, the momentum sooner or later fades and inflation works down to the structure

or basic level which we believe to be 2% or 3%. This range could well be reached by late next year, and is likely to remain the inflation norm until excess demand appears again and generates renewed price and wage pressures.

These rates of inflation may sound ridiculously low, but they are actually extremely high by historical standards. If we strip Vietnam and its aftermath, as well as Korea, out of the postwar period, inflation rates during the remaining peacetime years averaged 1% as measured by consumer prices, and 1/2% on the Wholesale Price Index. 2% or 3%, then, is two or three times the rates of those earlier postwar years and should account, in our view, for any structural changes since then, such as pollution and energy costs whose inflationary effects have not yet fully worked their way through the system.

Inflationary Momentum - Evidence of Unwinding at Last

Up until recently, the historical precedent for unwinding inflationary momentum was the sole basis of our forecast. Now, however, we have concrete evidence that the normal historical pattern is again being repeated. To see this it is necessary to go back to last spring and examine the situation then facing the steel, aluminum, paper, and other basic industries. At that point these producers saw that their customers -- the users of steel, aluminum, etc. -- were completing their inventory liquidation, so orders for these basic commodities were picking up.

Furthermore, those producers of basic manufactured goods, as almost everyone else, thought that we were in a typical postwar expansion and consequently expected an almost immediate surge in plant and equipment spending. They also thought that inflation rates would pick up in their normal postwar cyclical pattern, and furthermore, that supercycles and hyperinflation were very much alive, so sooner or later, the economy would again be hit by shortages and hedge buying. Many of these businessmen also believed that Jimmy Carter would be elected President, and feared the reimposition of price controls as he had hinted. The reaction to all these factors was, of course, a rash of announced price increases in steel, aluminum, chemicals, paper, cement, etc.

The steel industry went one step further, warning customers to buy ahead because steel shortages would be upon them by the end of this year. Steel-using customers were further encouraged to hedge steel purchases by a series of announced price increases which were to take effect not immediately but always two or three months down the road.

This series of price increases in basic industries, and the inflationary hedge-buying atmosphere that many thought it would create, fell flat on its face about midyear, and provided the first concrete evidence that inflationary momentum could not survive in conditions of business slack. Users of these basic commodities had been so badly burned by excess inventory holdings during the recession that they were unwilling to build stocks excessively, despite their fears of accelerating prices. On the other side of the coin, excess capacity was so rampant that suppliers were willing to make under-the-counter deals, agree to discounts from listed prices, and also to cheat on announced price increases. The results, of course, were the rescinding of price increases and the development of price discounts in steel, aluminum, copper, zinc, cement, paper, plastics, chemicals, etc.

Additional unwinding of inflationary momentum is likely. Purchasing agents who six months ago were accepting price increases as a way of life, now have the taste of blood -- they are looking for discounts and are unwilling to accept price increases. Furthermore, these attitudes are unlikely to change any time soon, since given our forecast of modest economic growth in the quarters and years ahead, it is unlikely that fears of shortages and inflationary hedge buying will be rekindled. In particular, the newly announced price increases in aluminum and steel are being discounted and are unlikely to have significant impact on transaction prices.

Failure of Price Increases - Some Ironic Profits Implications

Interestingly, the failure of basic industry price increases to stick is probably in the long run in the best interest of those very industries. Had they been successful in their price increase attempts, then inflationary momentum would have, for the first time ever, shown signs of self-perpetuating during conditions of significant economic slack. The result could well have been economy-wide hedge buying, shortages, an inventory bubble, and ultimately a very severe recession, detrimental to everyone, especially these basic industrial material producers.

Their inability to raise prices in the face of economic slack, however, suggests that business caution and competitive forces are very much at work and likely to prolong a steady economic expansion. Historically, this has been the ideal time for these industries, as demonstrated by the long, stable expansion in the early 1960's. In these circumstances, volume expansion spreads overhead costs over more and more units of output. The resulting above-trend productivity growth acts to offset the great majority of labor cost increases and results in only modest growth in unit costs.

Consequently, annual price increases in these industries of even 3% or 4% in 1977 and beyond are likely to result in substantial, prolonged profit-margin improvement of the sort not seen since the early 1960's. This, plus the expansion in sales to which higher profit margins are applied should push earnings in basic industries up by 10% to 20% annually in coming years, and the same mechanism should move economy-wide profits up by 10% to 15% per year in 1977 and beyond.

Surplus, Not Shortage of Funds

Just as our forecast calls for no early return to shortages of goods, it also foresees no revival of shortages of funds in the economy. Both shortages in the early 1970's, in our view, were products of the worldwide boom which, if history is any guide, will not be repeated for fifty years -- except during any future wars. Instead, we expect that the overall surplus of funds which has been around since early 1975 will continue in the balance of the decade.

The Federal Government, for example, should see steadily declining deficits, assuming no substantial tax cuts. Government spending, as noted, is expected to continue to grow more slowly than the economy, but Federal receipts, dependent as they are on personal and corporate profit tax collections, should grow about in step with the economy. The resulting declines in the deficit will, of course, reduce the Treasury demand for funds in an absolute sense. Corporations, since early last year, have been essentially in financial balance as their spending on inventories and plant and equipment has about matched their retained earnings and depreciation, even after correcting for inventory profits and under-depreciation. This situation is expected to continue as rapid profits growth and growing depreciation allowances should continue to about match the modest growth we foresee in inventories and stronger but contained advance in plant and equipment expenditures.

Individual saving is likely to continue to grow in dollar terms. The expected steady growth in incomes should more than offset the modest decline in saving rates that is expected as confidence and liquidity are rebuilt. Putting all these elements together, and despite our extremely strong housing forecast, which suggests a doubling or more in housing starts between now and 1980, the domestic economy overall should continue to have an ample supply of funds. One interesting indicator of this surplus currently is the difficulty that life insurance companies are now experiencing in investing their funds without further reducing the quality of private placements they will accept. Some are seriously considering reentering the residential market for the first time in many years, a move that could quickly reduce mortage rates.

Interest Rates - Down Further

The lower inflation rates we expect as a norm in coming years, coupled with a continuing surplus of funds obviously suggests anything but rising interest rates. We continue to believe that with inflation rates of 3% or less, quality bond yields, now about 8%, will work down to 6% or less -- not immediately but in the two or three years it takes investors to become completely accustomed to a new inflation rate and hence to fully adjust the inflationary premium they demand on long-term bond yields.

Assuming a normal yield curve with short-term rates below bond yields, money market rates in this scenario would not be expected to move up appreciably from current levels in the years ahead. Furthermore, the bank prime rate will probably decline appreciably. The spread between the bank prime rate and commercial paper and other competiting interest rates has been held unusually wide as banks rebuild their capital and cover current and expected losses on real estate, foreign, and other troubled loans. After loan-loss reserves are fully taken care of, however, banks could well shrink this spread between interest costs and charges without any appreciable effect on the bottom line, and probably will want to do so in order to retain their best business clients. Some such accommodation seems necessary if the prime rate system is to survive. In the past year, some banks have been making loans at below prime with no compensating balances in order to accommodate their business customers, a practice which could endanger the entire prime rate system if it continues indefinitely.

Two Caveats

This rather rosy forecast is, like any, not without its caveats, and two should be mentioned. First, contrary to our assumptions, rapid monetary and fiscal expansion could become the rule in Washington as the new Administration and Congress attempt to reduce unemployment rapidly. Such actions would probably not result in significantly greater economic growth until 1978, and would not be likely to push the economy back to full employment and perhaps into excess demand until 1979 at the earliest. Under normal circumstances, the resulting new round of inflation and the controls which would undoubtedly result would not be expected until late in the decade. This time, however, with the surging inflation and controls of the early 1970's still fresh in people's minds, any expected rerun of these problems could be anticipated much earlier by attempts to raise prices and wages, as perhaps has been the case with some recently announced price increases. Furthermore, securities markets could react negatively soon after it became apparent that massive government stimulating efforts were underway.

The more dangerous risk comes from abroad, not so much from the trade battles now being carried on by developed countries but by the underdeveloped countries which continue to experience huge trade deficits as they import more than they export. Consequently, a continuing infusion of new money from international lenders such as the World Bank as well as from the world's commercial banks, largely through the Euromarket, is necessary just to keep those countries financially alive. In some ways the situation is worse than the REIT loans in this country. There are many questionable real estate loans outstanding in the U.S., but at least no new ones are being created. In the underdeveloped countries, much good money is perhaps being thrown after bad.

Furthermore, the solution to these trade imbalances is not in sight. While it is true that the underdeveloped countries collectively have smaller deficits this year than the horrendous levels of 1975, the stronger demand for their goods by developed countries that resulted from the first burst of worldwide economic recovery is unlikely to be repeated. Furthermore, in the longer run, the prices of the raw materials that these poorer nations export are declining in relation to the manufactured goods they import as the world's manufactured goods contain more and more technology and less and less raw materials.

The dire conditions now faced by these countries have historically often been solved by cartel formation. This time, however, there are no "Big Daddies" -- such as the British or Dutch with their vast colonial empires in earlier times -- who would set up the cartels, police them, and bank-roll the members while supplies were being cut back and prices of raw materials pushed up. Only in the case of oil has a recent raw materials cartel worked, and only there because the Saudi's serve as "Big Daddy". Other recent cartel attempts in bauxite, copper, etc., have failed miserably.

The financial condition of underdeveloped countries has certainly not improved demonstrably recently. A year or more ago when we and others first called attention to this problem, it was pointed out that nobody had lent very much to the Bangladeshes of the world, but rather to safe, stable, high-growth countries such as Brazil, South Korea, and especially Mexico. Now, even these countries are experiencing difficulties.

A critical test for the underdeveloped countries may come from the widely expected increase in OPEC oil prices in the near future. A large price hike would greatly increase the balance-of-trade deficits of underdeveloped countries and could cause a wave of voluntary defaults on international debt repayments as they saw no way of ever working their way out of their financial holes. Alternatively, their creditors could reach the same conclusion and cut off further advances, thereby leaving no alternative but default. Such a wave of financial failures could rapidly and severely impact the Euromarket, and create a worldwide financial crisis.

The Saudi's, the leaders of OPEC, are obviously aware of this, and have a great deal of money tied up not only in the Euromarket but throughout the world, which they obviously would not like to see in jeopardy. This, plus their concern about the economic health of the developed countries and fears that a huge oil price increase may not stick in conditions of oil surplus and slack demand may temper their willingness to go along with a huge oil price increase.

Of course, the underdeveloped countries would not be impacted by a huge oil price increase if OPEC simultaneously announced a program to recycle the funds back to these emerging lands. This, however, would not solve their basic financing problems. Furthermore, other creditors might curtail further loans, reasoning that since the Arabs were providing essential oil to these countries, they would get first crack at any foreign debt repayments. Another alternative would be lower cost oil for underdeveloped countries, which has been suggested many times since the oil embargo of 1973--particularly by the underdeveloped countries themselves. OPEC has consistently rejected this proposal and we think for good reason. A boatload of cheap oil could be headed for India, for example, but ships captains sometimes get their orders mixed up at sea, and, who knows, it might end up in New York harbor.

Our Forecast - Very Much Doubted, Therefore Likely

The atypical nature of the current expansion is clear enough, but has only recently been perceived by many. As late as last spring, most forecasters and a number of businessmen saw nothing unusual about the recovery, and the latter were gearing up to deal with a capital spending boom, accelerating inflation, inventory hedge buying, credit shortages, etc. Perhaps the recent economic pause was caused, at least in part, by the realization that this strategy wasn't working. As in 1962, the current pause may serve as the transition between those earlier, unrealistic expectations and actions, and the much more sustainable stable business expansion in an atmosphere relatively free of inflation that we foresee for the balance of the decade.

Even now, however, our forecast is not accepted by many, and, ironically, its success depends on that disbelief continuing. It is, after all, this healthy skepticism and the resulting caution throughout the economy which postpones those speculative imbalances which ultimately call a halt to the expansion -- imbalances which are seen first in securities markets, and then in the economy itself. We believe that supercycles and hyperinflation are dead for a number of years to come, but only because most people see them as very much alive.

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White, Weld & Co.
Incorporated

Economic Comment

January 31, 1977

ECONOMIC FORECASTS

This month we are presenting two sets of economic forecasts; one excluding the Carter Administration's fiscal stimulus proposals, and another which includes it. The effect of the program is to raise economic growth this year from about 4 1/2% to 5 1/2%. This is a maximum expectation and, given the probable delays in implementing the program, in reality growth would fall somewhere in between the two forecasts. We do not believe the proposed increase in the investment tax credit will affect capital spending this year, but the issuance of $11.4 billion in tax rebates in the second quarter and a $4.0 billion permanent tax reduction starting in the third quarter would result in a sizable increase in personal consumption in the year's second half. We are assuming that a total $9 billion increase in federal spending on job-creation projects will be implemented, but this aspect of the program is the most controversial and the one most likely to be changed by the Congress, therefore we have delayed its implementation by three months to the fourth quarter of this year.

Although the package of fiscal stimulants has a demonstrable effect on economic activity in general, it does not in our view portend any acceleration in inflationary pressures. The reason is that any step-up in commodity prices resulting from faster output growth would be offset by faster productivity growth stemming from volume expansion and the spreading of overhead costs. This would also result in a sizable gain in corporate profits which on an after-tax basis we expect to rise about 17% this year versus only a 13 1/2% gain without the fiscal program. In 1978, the increased production and employment resulting from the spending of tax rebates would boost economic growth further and result in about a 15% gain in after tax profits.

The first quarter 1977 estimates reflect our assessment of the effects to date of the extreme winter weather.

EC-77-1

A. Gary Shilling

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U.S. ECONOMIC FORECAST
(Billions of Current Dollars)

	1976	1977		1978		Percent Change 1976	1977		1978	
	Actual	A	B	A	B	Actual	A	B	A	B
GNP Data										
Consumption Spending	1,078.6	1,178.6	1,199.2	1,270.1	1,329.1	10.8%	9.3%	11.2%	7.8%	10.8%
Durables	156.3	172.1	178.5	188.0	205.2	18.7	10.1	14.2	9.2	15.0
Nondurables	440.3	476.9	486.4	506.2	529.8	7.6	8.3	10.5	6.1	8.9
Services	482.0	529.6	534.4	575.9	594.1	11.5	3.9	10.9	8.7	11.2
Plant and Equipment	160.0	176.2	175.7	194.5	193.7	8.8	10.1	9.8	10.4	10.2
Housing	67.8	87.6	87.6	102.0	102.0	32.4	29.2	29.2	16.4	16.4
Inventory Change	14.8	14.8	15.0	21.2	24.3	-	-	-	-	-
Net Exports	6.9	4.9	4.9	6.9	4.5	-	-	-	-	-
Federal Government	133.4	143.3	144.7	150.5	154.3	7.2	7.4	8.5	5.0	6.6
State and Local Government	232.3	247.3	248.4	263.9	267.6	8.3	6.5	6.9	6.7	7.7
GNP (Current Dollars)	1,692.4	1,852.1	1,875.5	2,008.1	2,075.3	11.6	9.4	10.8	8.4	10.7
GNP (1972 Dollars)	1,265.0	1,320.1	1,336.6	1,382.9	1,429.1	6.2	4.4	5.7	4.7	6.9
Price Indices (1967 = 100) (Year Average)										
GNP Deflator	133.8	140.3	140.3	145.2	145.2	5.1	4.9	4.9	3.5	3.5
Consumer Price Index	170.6	178.7	178.7	184.8	184.8	5.8	4.7	4.7	3.4	3.4
Wholesale Price Index	182.7	192.3	192.3	198.4	198.4	4.5	5.3	5.3	3.2	3.2
Corporate Profits										
Pretax Operating Profits	119.0	137.5	142.1	156.2	170.0	29.8	15.6	19.4	13.6	19.6
Capital Consumption Adjustment	15.5	17.8	17.8	19.8	19.8	-	-	-	-	-
Inventory Valuation Adjustment	14.6	12.8	12.8	7.8	7.8	-	-	-	-	-
Total Pretax Profits	149.1	168.0	172.7	183.7	197.5	30.1	12.7	15.8	9.3	14.4
After Tax Profits	84.4	95.9	98.7	105.6	113.8	29.2	13.6	16.9	10.1	15.3
Other Statistics										
Housing Starts	1.57	2.0	2.0	2.22	2.22	34.2	27.4	27.4	11.0	11.0
Industrial Production	129.8	137.9	138.6	148.1	149.5	10.2	6.2	6.8	7.4	7.9
Unemployment Rate	7.7	7.5	6.3	7.5	6.3	-	-	-	-	-
Federal Government Deficit (Calendar Year)	-58.3	-55.0	-63.0	-45.0	-52.0	-	-	-	-	-

Quarterly Data (Annualized Rates of Change)

	1977								1978							
	I		II		III		IV		I		II		III		IV	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
Real GNP	4.7	4.7	5.3	7.3	4.6	10.3	4.6	10.2	4.7	6.3	5.0	5.3	4.7	4.5	5.1	5.0
Inventories	12.0	12.0	14.0	14.0	16.0	16.0	17.0	18.0	19.0	23.0	20.5	23.5	22.0	24.5	23.3	26.0
Industrial Production	7.5	7.4	8.3	8.2	7.2	9.6	7.1	9.8	7.3	7.7	7.4	6.4	7.3	5.6	7.7	5.9
After Tax Profits	8.6	8.6	13.8	18.5	9.3	20.4	8.4	22.3	7.1	11.3	11.4	12.1	13.8	13.6	13.6	13.8
Real Disposable Income	3.7	3.7	4.7	20.5	3.6	4.9	4.9	6.2	5.0	4.9	3.7	3.7	3.6	3.8	3.4	3.7
Consumer Price Index	5.5	5.5	4.1	4.1	3.8	3.8	3.5	3.5	3.4	3.4	3.3	3.3	3.3	3.3	3.0	3.0
Productivity	3.2	3.2	4.9	4.9	4.9	4.9	4.5	4.5	3.0	3.0	4.0	4.0	4.3	4.3	4.0	4.0

A = No Stimulus B = Stimulus

A. GARY SHILLING

White, Weld & Co.
Incorporated

Economic Comment

Outline of Taped Discussion of Economic Outlook by A. Gary Shilling 3/4/77

I. Basic forecast unchanged - recovery, like recession, not typical
   A. Cautious reaction to excesses of last decade continues to dominate
   B. Further unwinding of inflation (to 3% annual rate) still expected
   C. Moderate (5½%) real GNP growth over next several years
   D. Economic slack not eliminated before 1980, even with Carter stimulus and above-trend (3-4%) GNP growth over this period

II. Components of Inflation - Near term outlook
   A. Compensation (wages & fringes) increases declined from 9% in 1st Qtr '76 to 7% in 4th Qtr (& vs 15% rates 2 yrs ago)
      1. Reflects high unemployment and unwinding of inflationary expectations
      2. Expect further decline to 6½% rate of increase by yearend '78
   B. Productivity (output/man hour) - offset to higher compensation
      1. Improving at 5% annual rate (vs 2½% trendline) so far in recovery
      2. Should continue to show strong (4½%) gains through end of decade because of continuing
         a. slack
         b. volume gains (spreading of overhead)
         c. cautiousness towards adding to overhead
   C. A & B above seen as guts of inflation
      1. 6½-7% rises in compensation
      2. 4½% productivity gains
      3. Nets to 2-2½% rises in unit labor costs; this is your structural inflation and key to profits
      4. A 3½% rise in prices more than offsets higher unit labor costs and expands margins
   D. Material prices (commodities)
      1. Hoarding inventories and shortages sent these prices up dramatically in early '70's
      2. Excess capacity (both here and abroad) and long memories of last inventory bubble should prevent repetition
      3. Look for recent 4% annual rate of increase to continue
      4. Assuming 10% increase in energy costs
   E. Food
      1. Weather key factor - has reduced '77 crop expectations
      2. But for bad weather, surpluses would have piled up (esp. wheat, corn, oranges)
      3. Look for 3% annual increase in '77
         a. assumes 50% increase in Florida fruits and vegetables in 1st Qtr
         b. no adjustment for California drought
   F. Service
      1. At consumer level - lags other inflationary moves
      2. Slower to unwind, but continuing to do so from current 5% rate
   G. Aggregate Rates (CPI)
      1. 7½-8% in 1st Qtr '77
      2. 5½% in 2nd Qtr
      3. 3½% in 2nd half
      4. 3% by yearend '78

III. Financial Markets
   A. Continue to see surplus of funds through end of decade but for 2nd Qtr '77 (tax rebates bulge)
   B. Federal spending shortfall - if it continues - will reduce deficit

H/65

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C. Assuming present stimulus pkg is it, not first in series
D. Concerns over next few months
   1. Weather and possible inflationary impact
   2. Rebates - how financed
   3. 1976 tax clean-up -no effect on financial markets
   4. Fed Policy - will Fed again nullify rebates as in 1975? (not likely)
E. If inflation drops to 3% and surplus of funds endures, interest rates should fall
   1. 6% on quality long term bonds eventually (vs 8.25% today)
   2. Lower short term rates as well (at minimum, no big increases)

IV. Caution the key - long memories of both inflation and recession
A. Lack of general acceptance of our forecast is reflective of this caution
B. Gyrations of sentiment over last 2 years - self-correcting micro-cycles (instantaneous reaction to developments)
C. Severe winter likely to reinforce caution; this lingering deflationary impact should more than offset the initial inflationary effects
   1. Businessmen in no rush to replenish Xmas-depleted inventories
   2. Consumers' high fuel bills

V. Carter Administration
A. Policy evolving - not just another free-spending Democratic Administration
   1. Carter's background as small businessman a factor
   2. Focus shifting from unemployment to inflation
B. Appointees mostly professional managerial types
   1. Emphasis on efficiency in delivery of government services
   2. High degree of awareness of limitations of what government can do (contrast JFK's academics)
C. Newcomers distrusted by both Capitol Hill and bureaucracy
D. Independence of Congress not likely to diminish
   1. Stimulus package may be augmented
   2. Passage delayed by multiplicity of committee hearings
   3. Congressional budget process should keep stimulus within reasonable limits
E. Administration still committed to balance '81 budget
F. New awareness that public reacts to stimulative actions; may in fact nullify them
G. Stimulus package may get us to full employment by 1980 (vs '81 or '82 without it)
   1. Rebates likely to be spent gradually, not all in 2nd Qtr
   2. Additional output reduces inflationary pressure by spreading overhead
   3. Doubt it will refuel inflationary expectations

VI. Other concern - financial stability of lesser developed countries
A. Massive trade deficits problem remains
B. Commercial banks' burden being shifted to other institutions
C. Our forecast assumes this problem not aggravated sufficiently to spark financial panic

VII. Miscellaneous points from questions and answers
A. Carter's energy program to focus more on supply; little can be done politically or effectively on conservation point; coal should benefit
B. No big capital spending boom in offing for several years (similar to recovery of 1960's); such spending continues to fall short of surveys; current expenditures focused on modernization, labour saving, and pollution control
C. Remain bullish on housing with expectations of 3.5 million units annual rate by end of decade; equivalent dollars historically spent on durable contents of houses

William F. Boyd
Sales/Research Liaison

SRL-77-15

White, Weld & Co.
Incorporated

March 10, 1977

Below are our updated economic figures which show single estimates for 1977 and 1978 rather than case A and B.

U.S. ECONOMIC FORECAST

(Billions of Current Dollars)

	1976 Actual	1977	1978	Percent Change 1976 Actual	1977	1978
GNP Data						
Consumption Spending	1,079.7	1,193.7	1,301.8	10.9%	10.6%	9.0%
Durables	156.5	171.4	183.9	18.8	9.5	7.3
Nondurables	440.4	482.3	519.5	7.7	9.5	7.7
Services	482.8	539.9	595.6	11.7	11.8	10.3
Plant and Equipment	160.0	176.0	195.1	8.8	10.0	10.9
Housing	67.7	82.0	95.0	32.2	21.1	15.9
Inventory Change	11.9	14.5	22.5	–	–	–
Net Exports	6.4	4.5	4.5	–	–	–
Federal Government	133.4	144.3	151.7	7.2	8.2	5.1
State and Local Government	232.2	249.8	274.3	8.3	7.6	9.8
GNP (Current Dollars)	1,691.4	1,864.5	2,044.4	11.5	10.2	9.6
GNP (1972 Dollars)	1,264.6	1,323.4	1,397.4	6.1	4.7	5.6
Price Indices (1967 = 100) (Year Average)						
GNP Deflator	133.8	140.9	146.3	5.1	5.3	3.8
Consumer Price Index	170.5	179.9	186.3	5.7	5.5	3.6
Wholesale Price Index	183.0	191.8	197.7	4.6	4.8	3.1
Corporate Profits						
Pretax Operating Profits	118.6	141.8	167.6	29.5	19.5	18.2
Capital Consumption Adjustment	15.5	17.8	20.8	–	–	–
Inventory Valuation Adjustment	14.6	10.7	6.0	–	–	–
Total Pretax Profits	148.7	170.3	194.4	29.8	14.5	14.1
After Tax Profits	84.2	97.3	112.0	29.0	15.5	15.1
Other Statistics						
Housing Starts	1.56	1.80	2.20	33.3	15.4	22.2
Industrial Production	129.8	138.4	149.5	10.2	6.6	8.0
Unemployment Rate	7.7	7.2	6.6	–	–	–
Federal Government Deficit (Calendar Year)	-58.7	-65.0	-55.0	–	–	–

Quarterly Data (Annualized Rates of Change)

	1977 I	1977 II	1977 III	1977 IV	1978 I	1978 II	1978 III	1978 IV
Real GNP	3.4	7.0	7.4	5.8	5.2	5.2	4.3	5.6
Inventories	9.0	14.0	19.0	15.0	18.0	22.0	24.0	26.0
Industrial Production	4.0	14.2	8.4	7.6	7.1	8.2	6.6	7.9
After-Tax Profits	4.4	24.5	17.1	19.2	8.9	13.6	16.5	18.4
Real Disposable Income	2.7	20.2	0.9	3.4	3.5	3.7	3.8	2.3
Consumer Price Index	7.6	5.3	4.3	3.4	3.6	3.1	3.5	3.1
Productivity	1.8	5.4	4.6	4.5	3.1	4.1	4.4	4.0

RW-77-72

A. Gary Shilling

White, Weld & Co. Incorporated

Economic Comment

A. Gary Shilling

March 10, 1977

ECONOMIC FORECASTS

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(Billions of Current Dollars)

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Inventory Change	11.9	14.5	22.5	–	–	–
Net Exports	6.4	4.5	4.5	–	–	–
Federal Government	133.4	144.3	151.7	7.2	8.2	5.1
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Inventory Valuation Adjustment	14.6	10.7	6.0	–	–	–
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Consumer Price Index	7.6	5.3	4.3	3.4	3.6	3.1	3.5	3.1
Productivity	1.8	5.4	4.6	4.5	3.1	4.1	4.4	4.0

EC-77-3

Sp /55/56/65

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White, Weld & Co.
Incorporated

Commodity Price Monitor

Jeanne M. Gallagher

March 23, 1977

INDICES (1967 = 100)	PERIOD ENDING 1975 Dec.	1976 Feb.	1976 March	1976 June	1976 Sept.	1976 Dec.	1977 Jan.	1977 Feb.
Consumer Price Index	166.3	167.1	167.5	170.1	172.6	174.3	175.3	177.1
Wholesale Price Index	178.7	179.4	179.8	183.1	184.7	187.1	188.0	190.0
Dow Jones Spot*	296.33	313.50	306.64	368.34	340.91	369.70	393.12	416.84
Journal of Commerce Spot Index**	165.0	174.5	176.2	190.1	175.5	172.9	177.3	177.2
Dow Jones Futures	287.88	306.85	299.54	354 25	342.86	366.71	385.36	405.42
Dept. of Labor 22 Commodities	190.8	195.9	197.1	210.9	199.8	201.9	211.6	212.5
The Economist Commodity Index†	212.4	220.3	223.5	263.1	251.1	284.2	295.4	321.6

†(Dollar Based)
*Based on average prices prevailing in 1924-26. **1947-49 base.

Though Spring is here, the effects of earlier cold weather linger on in the form of higher prices for consumer and wholesale items. The WPI gained 0.9% in February (10.8% annualized) with farm product prices jumping 2.2% and industrial goods up 0.6%. The CPI rose at a 24% annual rate, and food prices contributed to most of this gain as well. Since we really can blame a lot of this on the weather, the Administration feels confident that this is not the beginning of a trend but will inevitably pass. Whatever the cause, the effect on the consumer dollar is the same. Most of the other indexes were also higher in February, with the largest percentage gain in *The Economist* indicator.

ENERGY

Not surprisingly, oil prices continued to edge upward though Rotterdam heavy fuel dropped 3¢ to more normal levels after registering a big gain the prior month. Coal and gas prices were unchanged. During the early weeks of March, however, the upper end of both the high and low quality steam spot price range reached $21 per ton (a parity we don't expect to hold for long). The 17% decline in coal production during the first nine weeks of 1977 combined with strong weather-induced demand is pulling coal prices out of their one year slump.

GRAINS AND FOOD

Though February average prices were higher, many spot prices began to decline later in the month. Most grains were down a few cents. The Carter Administration faces a tough challenge in trying to resolve the problems of U.S. wheat producers. Countries like Argentina, which is trying to regain its status as a major wheat producer, are undercutting U.S. prices in the world market. The Administration has discussed with Canada the possibility of setting floor prices for U.S. and Canadian wheat. However, with stocks at a five year high prices are likely to remain depressed despite cutbacks in plantings and switching to more profitable soybeans.

February was a good month for meat eaters. With transportation routes open again after the thaw, more beef and pork are coming to market. Estimates are that hog slaughterings will be 15-20% higher through June. Some herd liquidation is also fattening beef supplies now, at the expense of lower prices later. Large supplies pushed egg prices down 19¢ per dozen.

METALS

The continuing gains in soybeans, coffee and cocoa appear to be fueling speculative fever in other commodities, even where fundamentals may not justify the gains. The higher prices go, the more speculators buy and few, at least yet, seem willing to back off. Copper, for example, is in ample supply and, though there has been some strike-anticipated stockpiling, it would take a very long strike this summer to make a dent in inventories. If there were no strike or even one lasting a month, the price would very likely collapse.

Gold and silver prices are moving into higher ground as concern over inflation deepens. President Carter has said he wants a moratorium on sales of silver from the U.S. stockpile.

OTHER

Cotton prices were a little stronger last month on increased purchases from the Far East and nervousness over the dry growing areas in the West. Cotton growers in the Delta may also be contemplating a switch to soybeans. Nylon and polyester yarn prices, though unchanged in February, were raised early in March. These new prices, needed to cover basic production costs, say the manufacturers, are about the same as they were a year ago. Drought, power shortages and optimism over housing starts helped boost lumber and plywood last month.

CPM-77-03

–Research Department–

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	PERIOD ENDING							
	1975	1976					1977	
	Dec.	Feb.	Mar.	June	Sept.	Dec.	Jan.	Feb.
Energy								
Fuel Oil (gallon N.Y. Harbor, 0.3%)	$ 0.31	$ 0.32	$ 0.32	$ 0.30	$ 0.32	$ 0.34	$ 0.37	$ 0.38+
Gasoline, U.S. Regular (gallon ex tax)	0.47	0.46	0.45	0.48	0.49	0.48	0.48	0.50+
Rotterdam 3.0% Heavy Fuel (gallon)	0.21	0.24	0.24	0.23	0.25	0.27	0.30	0.27-
Arabian Light Crude (barrel)	11.51	11.51	11.51	11.51	11.51	11.51	12.09	12.09
U.S. Natural Gas (MCF)								
– Weighted Avg. Total	0.36	0.40	0.40	0.44	NR	NR	NR	NR
– Interstate Regulated								
Post 1974	0.52	0.52	0.52	0.52	1.42	1.43	1.44	1.44
Pre Jan. 1973	–	0.235	0.235	0.235	0.295	0.295	0.295	0.295
Coal–Metallurgical (ton)								
– Long-term Contract	49.00	49.00	19.00	48.00	48.00	49.00	49.00	49.00
– High Quality Spot	51.00	51.00	51.00	51.00	51.00	51.00	51.00	51.00
– Low Quality Spot	35.00	35.00	35.00	35.00	35.00	36.00	36.00	36.00
–Steam (ton)								
– Long-term Contract	25.00	25.00	25.00	25.00	25.00	26.00	26.00	26.00
– High Quality Spot	15.00	15.00	15.00	16.00	16.00	16.00	18.00	18.00
– Low Quality Spot	13.00	13.00	13.00	15.00	15.00	15.00	15.00	15.00
Uranium U308 (pound)	21.00*	32.50*	32.50*	40.00	40.40	41.00	41.00	41.35+
Grains and Oils								
Alfalfa Pellets (ton)	$ 92.00	$ 98.00	$100.00	$ 86.00	$105.00	$100.00	$100.00	$ 97.00-
Barley (bushel)	3.45	3.35	3.35	3.75	3.50	3.40	3.25	3.05-
Coconut Oil (pound)	0.16	0.16	0.17	0.20	0.23	0.26	0.26	0.29+
Corn (bushel)	2.56	2.74	2.68	2.87	2.59	2.51	2.59	2.55-
Corn Oil (pound)	0.29	0.27	0.24	0.24	0.27	0.26	0.32	0.31-
Cottonseed Meal (ton)	134.00	118.00	120.00	175.00	187.00	188.00	189.00	183.00-
Cottonseed Oil (pound)	0.23	0.27	0.26	0.23	0.23	0.23	0.24	0.24
Flour (cwt)	8.60	10.10	9.10	9.00	7.20	6.85	7.05	7.00-
Oats (bushel)	1.67	1.68	1.60	2.02	1.63	1.68	1.85	1.84-
Rice (cwt)	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00
Rye (bushel)	2.80	2.95	2.85	3.35	2.75	2.75	2.95	2.90-
Soybean Meal (ton)	121.00	131.50	126.00	190.50	162.00	203.00	209.50	218.00+
Soybean Oil (pound)	0.16	0.17	0.16	0.19	0.21	0.20	0.22	0.23+
Soybeans (bushel)	4.46	4.71	4.58	6.57	6.12	6.94	7.08	7.49+
Wheat – Soft Red (bushel)	3.25	3.95	3.33	3.38	2.64	2.70	2.70	2.66-
Food								
Beef (pound)	$ 0.73	$ 0.58	$ 0.59	$ 0.61	$ 0.54	$ 0.61	$ 0.60	$ 0.56-
Broilers (pound)	0.45	0.41	0.44	0.46	0.38	0.36	0.39	0.42+
Butter (pound)	1.00	0.85	0.90	1.01	0.93	0.90	0.90	0.90
Cocoa (pound – Accra)	0.78	0.74	0.78	1.09	1.37	1.54	1.92	2.10+
Coffee (pound – Brazilian)	0.92†	1.10	1.12	1.50	1.52	2.25	2.25	2.85+
Eggs (dozen)	0.73	0.59	0.61	0.63	0.73	0.77	0.87	0.68-
Hogs (cwt)	46.50	47.65	46.10	49.25	34.80	37.75	40.50	38.80-
Pork Bellies (pound)	0.67	0.67	0.66	0.76	0.56	0.51	0.55	0.46-
Steers (cwt)	44.45	37.90	37.30	39.25	36.10	39.80	38.05	36.50-
Sugar Cane – Raw (pound)	0.16	0.15	0.16	0.15	0.10	0.11	0.11	0.11
Sugar Cane – Refined (pound)	0.21	0.21	0.21	0.21	0.17	0.16	0.17	0.17

Note: Prices – All quotations are cash prices on or about the last day of the quarter or month; an asterisk (*) indicates the quote is the midpoint in the range of the last day.

†Colombians.

NP – Not yet reported by F.P.C. Earlier figures not representative because of rapid escalation of current field prices.
Sign in last column indicates direction of change from previous month.

	PERIOD ENDING							
	1975	1976					1977	
	Dec.	Feb.	Mar.	June	Sept.	Dec.	Jan.	Feb.
Metals								
Aluminum Ingot (pound)	$ 0.41	$ 0.41	$ 0.41	$ 0.44	$ 0.48	$ 0.48	$ 0.48	$ 0.48
Copper (pound) – N.Y. Merchant	0.57	0.61	0.65	0.75	0.63	0.64	0.66	0.70+
Copper (pound) – LME	0.53	0.58	0.62	0.74	0.63	0.61	0.64	0.66+
Copper (pound) – U.S. Producer	0.63	0.63	0.66	0.71	0.75	0.66	0.67	0.69+
Lead (pound)	0.19	0.19	0.21	0.23	0.25	0.26	0.28	0.29+
Molybdenum (pound)	2.62	2.62	2.62	2.90	3.20	3.20	3.45	3.45
Nickel (pound) – N.Y. Merchant	2.20	2.09	2.09	2.13*	2.17*	2.17*	2.17*	2.17*
Nickel (pound) – U.S. Producer	2.20	2.20	2.20	2.20	2.20	2.41	2.41	2.41
Pig Iron (ton)	180.00	180.00	180.00	178.00	180.00	180.00	180.00	180.00
Steel (cwt)								
Bars	10.75	10.75	10.75	11.50	11.50*	12.25	12.25	12.25
Sheets	11.55*	11.55*	11.55*	12.45*	12.45	13.25	13.25	13.25
Plate	12.98*	12.98*	12.98*	12.85	14.10	14.10	14.10	14.10
Scrap (ton)	64.33	79.90	86.70	84.70	70.23	69.04	73.00	73.46+
Zinc (pound) – U.S. Producer	0.39	0.37	0.37	0.37	0.40	0.37	0.37	0.37
Zinc (pound) – European Producer	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
Zinc (pound) – LME	0.32	0.31	0.34	0.35	0.31	0.30	0.32	0.33+
Precious Metals								
Gold (London – Troy ounce)	$140.25	$132.30	$129.60	$123.80	$116.00	$134.75	$132.30	$142.75+
Silver (U.S. Equiv. – Troy ounce)	4.18	4.16	4.11	4.83	4.39	4.37	4.45	4.73+
Chemicals								
Acetone (tank)	$ 0.15	$ 0.15	$ 0.15	$ 0.15	$ 0.15	$ 0.15	$ 0.15	$ 0.15
Acrylic (pound)	0.55*	0.55*	0.55*	0.55*	0.57	0.57	0.57	0.57
Alcohol, Ethyl (gallon)	0.93*	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Ammonia (ton)	172.50*	165.00	172.50*	172.50*	172.50*	172.50*	172.50*	172.50*
Benzene (gallon)	0.80*	0.80	0.80	0.85*	0.85	0.83	0.83	0.83
Caustic Soda (cwt)	12.00*	12.00*	12.00*	12.00*	12.00*	12.00*	12.00*	12.00*
Chlorine (cwt)	6.88*	6.88*	6.88*	6.88*	6.88*	6.88*	6.88*	6.88*
Ethylene (pound)	0.12*	0.12*	0.12*	0.12*	0.12*	0.12*	0.12*	0.12*
Methanol (pound)	0.05	0.05	0.05	0.05	0.05*	0.05	0.05	0.05
Polyethylene (pound)	0.30*	0.30*	0.31*	0.31*	0.32*	0.32*	0.32*	0.32*
Polystyrene (pound)	0.27	0.29	0.29	0.29	0.26	0.26	0.26	0.26
Polyvinyl Chloride (Pound)	0.23*	0.23	0.24	0.24	0.26*	0.26*	0.26*	0.26*
Soda Ash (cwt)	4.20	4.05	4.20*	4.20*	4.20*	4.20*	4.20*	4.20*
Sulfuric Acid (ton)	47.23*	47.23*	47.23*	47.23*	47.23*	47.23*	47.23*	47.23*
Fabrics and Fibers								
Burlap (yard)	$ 0.17	$ 0.18	$ 0.18	$ 0.17	$ 0.17	$ 0.18	$ 0.18	$ 0.18
Cotton (pound)	0.57	0.59	0.54	0.85	0.77	0.70	0.71	0.74+
Nylon (pound) – 40 Denier Yarn	1.45	1.45	1.45	1.45	1.30	1.25	1.40	1.40
Polyester (pound)								
– Staple	0.55	0.55	0.55	0.55	0.55	0.55	0.60	0.60
– 150 Denier Feeder Yarn	0.87	0.87	0.80	0.60	0.50	0.50	0.50	0.50
– Textured 150 Denier Yarn (dyeable)	1.15	1.05	0.95	0.80	0.70	0.75	0.75	0.75
Wool (pound)	1.80	1.78	1.78	1.83	1.85	1.90	1.90	1.90
Other Commodities								
Fertilizers								
Anhydrous Ammonia (ton)	$200.00	$150.00	$140.00*	$150.00	$125.00	$130.00	$130.00	$140.00+
Phosphoric Acid (unit ton)	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
Potash Muriate (unit ton)	0.68*	0.68*	0.68*	0.68*	0.68*	0.68*	0.68*	0.68*
Hides (pound)	0.28	0.36	0.39	0.38	0.37	0.43	0.44	0.44
Lumber (2x4) (M. bd. ft.)	140.00	156.00	144.00	137.00	161.00	188.00	188.00	190.00+
Newsprint (ton)	360.00	360.00	360.00	360.00	360.00	360.00	360.00	360.00
Paper (cwt)	30.35	31.40	31.40	31.40	31.40	31.40	31.40	31.40
Plywood (M. sq. ft.)	136.45	147.50	145.65	147.45	166.57	175.29	172.50	184.50+
Rubber (pound)	0.33	0.37	0.38	0.42	0.41	0.40	0.40	0.41+
Tallow (pound)	0.15	0.16	0.15	0.15	0.16	0.17	0.18	0.18

Source: *Journal of Commerce, Wall Street Journal,* various industry sources.

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Industry Survey

James Donohue
(212) 285-2010

April 11, 1977

THE FINANCIAL SURVEY

TABLE OF CONTENTS

	Page
What is the Question?	1
Stock Performance Since Last Survey . . . 1st Quarter of 1977	3
Selected Stocks	4
Macro View	5
Savings Inflows at Thrifts, Continued Strength	5
California S&L's, Stronger Than Rest of U.S.	5
California Home Speculation	8
Housing Starts, Temporary Impact of Adverse Weather	10
Existing Home Sales, New Records	10
Commercial Loan Demand . . . The Cycle Is Alive and Well	11
Slow Progress on Real Estate Problems . . . A Lesson For Bankers	14
Statistics – 21 banks, 5 S&L's, 12 REIT's, 5 PMI's, etc.	18-19

WHAT IS THE QUESTION?

Today, in discussing companies I follow, I often think of Gertrude Stein's alleged response to *What is the answer?* namely, *What is the question?* This is especially true regarding commercial banks where many questioners seem to convey a vague sense of uneasiness which almost by definition precludes a positive response. By any measure, the economies and banks of the world have emerged from a period of unprecedented strains and numerous surprises. Although serious concerns abound, much improvement has occurred in the past two years. Some of the current skepticism is undoubtedly justified given the recent shocks, but we suspect that some of the new-found skeptics are the same extreme optimists of yesterday who, once again, may be over reacting.

We have come a long way from the early 1970's when banks were described *as money making machines*, loan loss reserves were considered as *unnecessary* and loan loss provisions almost *irrelevant*. We also suspect that some bankers got carried away with their rave no notices (and high P/E's) and overestimated their own positive achievements while underestimating the boost they got from favorable economic developments (low inflation, a gradually rising prime rate and increasing balance sheet leverage).

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We remain positive on the prospects of most of the groups we follow as indicated on our recommended list on page 4. Our approach to the four financial groups we follow is summarized below:

BANKS 1. **Cycle in Upswing**—We still want to have a full weighting in this group as the earnings cycle turns upward and progress continues on problems from the 1973-1975 recession.

a. **Loan volume rebounding** see page 11.

b. **Spreads**—Should continue to be under pressure but price discipline should be reinforced by capital considerations. Severe rate cutting is likely to be avoided.

c. **Problem loans**—Continued economic progress should result in lower loan loss provisions and a declining drag on 1977 and 1978 earnings. The biggest problem area, real estate, is expected to improve (see page 14).

2. **Overseas worries—especially the LDC's**—We believe banks are in the third year of a six year problem. Some progress has occurred, but new problems are likely to arise in 1977. IMF help likely in 1977. Don't expect huge losses from this area, but concern with this issue affects P/E multiples. *Predictable catastrophes seldom happen.* We don't look for one here.

3. **Interest on Consumer Demand Deposits**—The *if, when,* and *how* of this issue are still unsettled, although it has an aura of inevitability. Although a possible near-term negative when implemented, most likely it would negatively impact certain bank earnings by only 5-10%. Longer term, it could be a positive... it serves to improve pricing.

4. **Stock Prices**—Discounting all the worries. Earnings are likely to show a good improvement in 1977 (major banks up 15%+). Stocks are technically attractive according to John Mendelson. Downside risk is probably limited to dull near-term performance.

S&L's Continued strong near-term fundamentals point to earnings increases of 30%+ in 1977 and a good gain is likely in 1978. A significant move towards a meaningful dividend is under way. This should attract new shareholders and reduce stock volatility. The issue of speculative buying of homes in California is a cloud. Believe this is limited. (See page 8).

REIT's Slow portfolio improvement (see page 14) should lead to dividend increases in 1977. Selected REIT's offer 9-10% yield and 30-50% appreciation prospects over the next two years. Certain other REIT's offer lower current yields and more upside over this period.

PMI's Still like MGIC and AMIC. Fundamentals remain strong. A play on strong single family market, mortgage availability and recovery of real estate markets. Risk is that high inflation produces a weak mortgage market.

STOCK PERFORMANCE SINCE LAST SURVEY . . . FIRST QUARTER OF 1977

The 43 companies we follow in the Monthly Research Review declined less than the averages in the first quarter . . . they showed a 7.6% decline versus an 8.4% decline for the S&P 500 and an 8.5% decline for the DJIA.

Banks—The 22 banks stocks generally moved in line with the market declining 8.1% in the quarter. Interestingly New York City bank stocks, helped by some high yields, did better than banks outside New York. Worst performers were **Bank America (-17.8%), Wachovia (-16.7%), Citicorp (-14.1%), First Chicago (-13.7%)** and **First International (-13.5%).** Best performers were **Wells Fargo (-0.5%), NCNB Corp. (-2.1%), Chase Manhattan (-2.4%), Republic of Texas (-2.6%)** and **Manufacturers Hanover (-3.2%).**

S&L's—The best performing group was the five S&L's which were up 1.3% in the quarter. Helped by a meaningful yield, **United Financial** appreciated 7.3% and Gibraltar was up 6.1%. A significant dividend trend got started in the first quarter as **First Charter** declared a cash dividend producing a 4% yield on the then price. Although First Charter was off 2.9% in the first quarter it had been off 16.9% at the end of February before the dividend was declared and appreciated 16.8% during the month of March.

REIT's—Helped by high yields, our eleven REIT's performed well in the first quarter. . . off only 3.7%, which was nearly offset by dividend income. The best performer was **RAMPAC (+13.3%)** and the worst performer **MONY Mortgage (-9.8%).**

PMI's, Miscellaneous—These five companies were the worst performers . . . off 19.8% in the quarter following big gains in the second half of 1976. This was due to a lack of meaningful yields together with revived inflationary concerns, which have an adverse impact on PMI companies—**MGIC (-30.0%), AMIC (-25.2%)** and **United Guaranty (-18.3%).** Rouse is an interesting sleeper, with an adjusted book value of over $11 a share.

SELECTED LIST

Our recommended list remains pretty much the same. We have added an REIT, **MassMutual Mortgage,** on a price basis and **NCNB** as a recovery candidate in the regional bank area. **Wells Fargo** is restricted because it is in registration.

Table 1

RECOMMENDED STOCK LIST

	Recent Price	EPS 1975	EPS 1976	EPS 1977E	Current Yield
S&L'S					
First Charter	$16	$1.70	$2.42	$3.10	3.6%
Gibralter Financial	11	1.18	1.95	2.70	3.6
Great Western Financial	23	1.53	3.30	4.35	2.2
Imperial Corp.	17	2.06	2.98	3.60	1.4
United Financial	13	1.40	2.30	3.20	3.1
PMI's					
AMIC	$14	$1.07	$2.50	$3.10	0.4%
MGIC	15	0.10	1.15	1.80	1.3
REIT's					
Conn. General–May	$18	$1.40	$1.25	$1.60	9.0%*
Equitable–Oct.	24	1.85	2.07	2.40	9.4 *
Lomas & Nettleton–June	15	1.16	0.90	1.40	5.4 *
MassMutual–Oct.	15	1.17	1.09	1.30	8.8 *
Northwestern Mutual–May	13	0.79	0.90	1.30	7.8 *
PNB Realty–Sept.	8	0.30	0.46	0.75	4.8 *
Regional Banks					
NCNB	$11	$1.10	$1.20	$1.40	4.8%
Seafirst	34	3.61	4.05	4.50	3.8
Wachovia	21	1.96	2.00	2.10	3.1
Money Center Banks					
BankAmerica	$25	$2.19	$2.40	$2.75	3.2%
Citicorp	28	2.73	3.08	3.50	3.8
Manufacturers Hanover	38	4.59	4.82	5.30	5.1

* Based on last quarterly dividend times four. Actual yield is likely to be significantly higher as earnings increase.

MACRO VIEW–SAVINGS INFLOWS AT THRIFTS, CONTINUED STRENGTH (Table 2)

Propelled by consumer caution and relatively low interest rates, thrift institutions continued to show strong savings inflows in January and February of 1977. Preliminary indications for March suggest another strong month. Although new dollar inflows in January and February were down 8% from a year ago at S&L's and 23% at the mutual savings banks, dollar inflows were still at relatively high levels. In fact, January 1977 inflows at S&L's were the second highest volume on record.

1976 Wrap-Up

Total savings inflows in the S&L's were up 17.7% in 1976 and amounted to $49.7 billion ($34.4 billion before credited interest). We had been expecting a strong year in 1976 but results were about 12% ahead of our estimates at the beginning of the year due chiefly to lower than expected interest rates.

1977 and 1978

In 1977, we anticipate a lower rate of savings increase than in 1976 . . . a 15.2% increase in savings versus the 17.7% increase in 1976. For 1978, we are tentatively projecting a more moderate rate of increase of 12.7%. Interestingly, if our expectations prove correct, the dollar savings increases in 1977 and 1978 should match the all time record set in 1976. Furthermore, given the likelihood of steady loan repayments during this period, total funds available for mortgage lending should remain at high levels. Hence, sufficient mortgage funds are likely to be available to sustain the real estate recovery begun in 1975 and likely to continue through 1978. Underlying our positive projections is a 5-6% inflation assumption which we feel should not cause long-term interest rates to increase significantly though short rates should rise somewhat as the economy regains momentum.

CALIFORNIA S&L'S, STRONGER THAN THE REST OF THE U.S. (Table 3)

Both savings trends and mortgage activity have been stronger at the California S&L's than in the rest of the United States. Savings increased 19.8% in 1975 and 21.2% in 1976. Net savings inflows in January 1977 were up 18% from a year ago while loans closed were up 75% and set a new high for January. In February savings were off 7% from a year ago, while loans closed were up 61%.

Strong Savings Inflows Fund Record Loan Volume

Despite the explosive mortgage volume in California in the past two years (loans closed increased 170% from 1974 to 1976), California S&L liquidity ratios have actually improved during this period. In 1975 and 1976, the $28.8 billion in loans closed by California S&L's was exceeded by $29.5 billion in savings inflows and mortgage repayments (the two principal sources of lendable funds).

Table 2

SAVINGS FLOWS AT S&L's AND SAVINGS BANKS

($ in Millions)

Date	New Savings S&L's	New Savings Mutuals	Savings Flow After Interest Credited S&L's	Savings Flow After Interest Credited Mutuals	Savings Flow After Interest Credited Total	S&L Savings Inflow Versus A Year Ago	S&L Savings Inflow Rate of Increase from Yr. End (monthly annualized)	Average Rates (90 day) Treasury Bills
1969	$-1,001	$ -729	$ 3,884	$ 2,511	$ 6,395	-	-	6.67%
1970	5,294	941	10,843	4,516	15,358	+179%	+ 8.0%	6.39
1971	20,653	5,693	27,332	9,648	36,980	+152	19.3	4.33
1972	23,884	5,451	31,956	10,067	42,023	+ 17	18.9	4.07
1973	10,507	-442	19,943	4,815	24,758	- 38	9.9	7.03
1974	4,668	-2,823	15,595	2,907	18,502	- 22	7.2	7.84
1975	29,298	4,757	42,052	11,070	53,122	+170	17.8	5.80
1976	34,375	5,265	49,727	12,262	61,989	+ 18	17.7	4.98
1977E	33,000	5,500	50,000	13,000	63,000	+ 1	15.2	5.80
1978E	30,000	4,500	48,000	12,500	60,500	- 4	12.7	-
1975								
January	$ 3,094	$ 250	$ 3,201	$ 471	$ 3,672	+ 51%	+16.2%	6.26%
February	3,114	708	3,213	909	4,122	81	16.3	5.50
March	3,690	1,029	6,331	2,052	8,383	56	32.1	5.49
April	2,673	395	2,787	626	3,413	+*	14.1	5.61
May	3,690	930	3,798	1,143	4,941	632	19.3	5.23
June	3,089	746	6,073	1,871	7,936	132	30.8	5.34
July	2,865	264	2,980	508	3,489	+*	15.1	6.13
August	1,326	-21	1,436	197	1,633	+*	7.3	6.44
September	631	-338	3,607	785	4,392	161	18.3	6.42
October	2,086	131	2,208	348	2,556	417	11.2	5.96
November	2,072	549	2,191	765	2,956	84	11.1	5.48
December	968	114	4,226	1,394	5,620	28	21.4	5.44
1976								
January	$ 5,108	$ 810	$ 5,245	$ 1,037	$ 6,282	+ 64%	+22.6%	4.87%
February	3,719	787	3,850	1,118	4,968	+ 20	16.6	4.88
March	3,687	864	6,903	2,029	8,932	+ 9	29.7	5.00
April	2,583	352	2,731	586	3,317	- 2	11.8	4.86
May	2,835	561	2,977	801	3,778	- 22	12.8	5.20
June	1,353	(55)	4,924	1,200	6,124	- 19	21.2	5.41
July	3,289	350	3,442	625	4,067	+ 16	14.8	5.23
August	1,967	75	2,113	315	2,428	+ 47	9.1	5.14
September	1,944	110	5,466	1,360	6,826	+ 52	23.5	5.08
October	3,224	575	3,386	800	4,186	+ 53	14.6	4.93
November	2,381	625	2,520	775	3,295	+ 15	10.9	4.74
December	2,285	350	6,159	1,250	7,909	+ 46	26.5	4.36
1977								
January	$ 4,944	$ 625	$ 5,121	$ 860	$ 5,981	- 5%	+18.3%	4.58%
February	3,173	600	3,329	850	4,179	- 16	12.2	4.67

*Change from a minus to a plus

Table 3

CALIFORNIA S&L's – SELECTED FLOWS OF FUNDS

	Sources				Uses			
	Net New Savings	Net Savings Inflow (After Credited Interest)	Loan Repayment	Net Savings Inflow & Repayments	Loans Closed	Net Loan Purchases (Sales)	Loans Closed + Purchases & – Sales	Net Savings & Repayments ÷ Net Loans Closed
1968	$ (122)	$ 814	$2,395	$ 3,209	$ 3,914	$ 78	$ 3,992	0.80%
1969	(1,395)	(396)	2,308	1,912	3,845	89	3,934	0.49
1970	115	150	2,244	2,394	3,517	196	3,713	0.64
1971	3,776	5,014	3,678	8,692	6,576	757	7,333	1.19
1972	4,114	5,600	4,478	10,078	8,809	959	9,768	1.03
1973	475	2,175	4,180	6,355	7,732	346	8,078	0.79
1974	(349)	1,523	3,762	5,285	6,413	(6)	6,407	0.82
1975	5,565	7,787	4,785	12,572	10,689	(563)	10,126	1.24
1976	7,218	9 956	6,928	16,884	18,074	(1,731)	16,343	1.03
1975								
January	$ 528	$ 528	$ 251	$ 779	$ 341	$ (52)	$ 289	2.70%
February	614	616	237	853	421	(38)	383	2.23
March	783	1,283	336	1,619	564	17	601	2.69
April	427	428	387	815	856	(59)	797	1.02
May	847	849	427	1,276	1,151	(65)	1,086	1.18
June	658	1,198	524	1,722	1,215	(40)	1,175	1.47
July	507	508	463	971	994	(19)	975	1.00
August	261	263	417	680	1,046	(43)	1,003	0.68
September	157	732	439	1,171	1,053	(57)	996	1.18
October	494	495	473	968	1,118	(48)	1,070	0.90
November	316	318	361	679	776	(54)	722	0.94
December	(30)	569	469	1,038	1,136	(108)	1,028	1.01
1976								
January	$ 929	$ 931	$ 419	$1,350	$ 830	$ (96)	$ 734	1.84%
February	727	729	358	1,087	916	(69)	847	1.28
March	725	1,354	534	1,888	1,333	(26)	1,307	1.44
April	414	415	551	966	1,571	(29)	1,542	0.63
May	661	662	576	1,238	1,547	(140)	1,407	0.88
June	344	1,009	721	1,730	1,984	(247)	1,737	1.00
July	901	902	645	1,547	1,727	(115)	1,612	0.96
August	528	530	649	1,179	1,632	(228)	1,404	0.84
September	446	1,144	605	1,749	1,564	(165)	1,399	1.25
October	742	744	581	1,325	1,549	(213)	1,336	0.09
November	515	517	584	1,101	1,539	(167)	1,372	0.80
December	285	1,018	704	1,722	1,881	(239)	1,642	1.05
1977								
January	$1,097	$1,101	$ 539	$1,640	$ 1,456	$(184)	$1,272	1.29%
February	676	679	498	1,177	1,472	(281)	1,191	0.99

Recent Trends Up

Based on selective checks with major California S&L's, it appears savings inflows have accelerated in March after a slowdown in February. Furthermore, it appears that much of the inflow has been in stable savings certificates and has more than offset declining large denomination CD's, which have been allowed to run down.

CALIFORNIA HOME SPECULATION

An emerging worry regarding S&L's concerns speculative elements in the California home market and the fear that this has added fluff to home prices. Given the rapid escalation of home prices in certain California markets, it is feared that some future price shake-out is likely which could harm lenders. The recent issue of the Residential Research Report shows that home prices in Southern California increased *on average* 22% in 1976 . . . on top of a 16% increase in 1975. Dr. Maurice Mann, head of the Federal Home Loan Bank in California, recently voiced concern about this problem.

The Positive Position: In Perspective, Speculation is Less of a Concern

Those who discount the seriousness of this issue state that worrisome speculation is limited to two areas . . . Orange County and San Francisco . . . where it may account for 35% of the total purchases of single family homes. More important, fundamental factors such as 1) a slump in construction in 1974–75 due to the recession, 2) general inflation, 3) a scarcity of available land due to local environmental restrictions and 4) additional buyers from Canada, Latin America and elsewhere overseas, can explain much of this price increase. Furthermore, S&L lenders have been making mostly 80% loan-to-value mortgages giving them a substantial cushion in the event of price declines. The assumption underlying this positive approach is that although some specualtion is present in the market, home values are not likely to decline sharply. Furthermore, it is emphasized that most speculation is occurring on completed single family home and income producing real estate . . . not raw land . . . and hence, downside should be limited, especially for lenders with a build in cushion.

Bearish Argument

This position assumes that real estate markets are cyclical and, hence, excesses at some time are only a matter of course. Furthermore, it is generally conceded that S&L's cannot absolutely avoid lending to speculators. Speculators are believed to represent 50% or more of the buyers of single family homes in certain areas, and it is felt that many speculative syndicates are carrying homes on a negative cash flow basis. Hence, simply a slowing down of the rate of *increase* on home prices could flush these owners out and produce a decline in home prices and losses for some lenders.

Conclusion

We view this problem as potentially significant but believe the amount of speculation has been exaggerated by some, and that a worrisome decline in home prices is unlikely over the near-term. Continued publicity regarding speculative buying is likely to encourage increased diligence by lenders. Many S&L managements formed their basic approach to lending in the troubled California real estate market of the mid-1960's. Furthermore, as long as mortgage money remains reasonably available, home prices are not likely to show worrisome declines. Thus, underlying our relatively positive outlook is an assumption of moderate inflation and interest rates.

Table 4

HOUSING STARTS, BUILDING PERMITS AND COMPLETIONS (SA)

(Millions of Units)

Year	Private Housing Starts	% Chg. from Prior Month	Building Permits	% Chg. from Prior Month	Housing Completions	% Chg. from Prior Month
1971	2.052		1.952		1.702	
1972	2.357		2.219		1.971	
1973	2.045		1.820		2.014	
1974	1.338		1.074		1.692	
1975	1.160		0.924		1.296	
1976	1.536		1.281		1.361	
1975						
January	1,005	+ 6.9%	0.718	-17.4%	1.547	- 0.6%
February	953	- 5.2	0.729	+ 1.5	1.350	-12.7
March	986	+ 3.5	0.721	- 1.1	1.314	- 2.7
April	982	- 0.4	0.843	+16.9	1.244	- 5.3
May	1.085	+10.5	0.903	+ 7.1	1.269	+ 2.0
June	1.080	- 0.5	0.938	+ 3.9	1.202	- 5.3
July	1.207	+11.8	1.016	+ 8.3	1.261	+ 4.9
August	1.264	+ 5.1	0.998	- 1.8	1.267	+ 0.5
September	1.304	+ 3.2	1.092	+ 9.4	1.315	+ 3.8
October	1.431	+ 9.7	1.111	+ 1.7	1.115	-15.2
November	1.381	- 3.5	1.127	+ 1.4	1.386	+24.3
December	1.283	- 7.1	1.091	- 3.2	1.329	- 4.1
1976						
January	1.236	- 3.7%	1.147	+ 5.1%	1.213	- 8.7%
February	1.547	+25.2	1.165	+ 1.6	1.299	+ 7.1
March	1.417	- 8.4	1.188	+ 2.0	1.399	+ 7.7
April	1.367	- 3.5	1.082	- 8.9	1.266	- 9.5
May	1.422	+ 4.0	1.158	+ 7.0	1.360	+ 7.4
June	1.510	+ 6.2	1.150	- 0.7	1.373	+ 1.0
July	1.382	- 8.5	1.215	+ 5.7	1.307	- 4.8
August	1.537	+11.2	1.296	+ 6.7	1.401	+ 7.2
September	1.840	+19.7	1.504	+16.1	1.390	- 0.8
October	1.813	- 1.5	1.492	- 0.8	1.317	- 5.3
November	1.705	- 6.0	1.585	+ 6.2	1.399	+ 6.2
December	1.889	+10.8	1.514	- 4.5	1.435	+ 2.6
1977						
January	1.386	-26.6%	1.307	-13.7%	1.373	- 4.3%
February	1.791	+29.2	1.514	+15.8	–	–

HOUSING STARTS, TEMPORARY IMPACT OF ADVERSE WEATHER (Table 4)

In January, housing starts dropped sharply from December levels due to the extremely cold weather in the Northwest and Midwest which greatly affected housing activity in those areas. The rebound in February was quite pronounced and underscores the temporary nature of a weather induced slowdown. For the moment, we are sticking with our 1.9 million start estimate for the year although we note that many higher estimates have been cut back and the consensus view is probably in the 1.7-1.8 million area. Reduced start estimates have generally been due to the depressed levels in January and revived inflation fears which raise the prospect of higher interest rates.

Interestingly, total housing production in 1976 of 1.8 million units (including mobile homes) is a level that, prior to the super-boom begun in 1968, was exceeded in only one year since World War II and this was in 1950 during the Korean War boom.

Seasonally adjusted building permits continued to run significantly ahead of a year ago . . . up 14% in January and 30% in February, underscoring the temporary nature of the January set-back in starts.

Finally, 1-4 family starts (chiefly single family) continue to account for a preponderance of total starts. In 1976, they were 81% of total starts and for the first two months of 1977 they were 80% and 84%, respectively. Strong single family activity reflects the availability of mortgage money at relatively attractive rates and some pent up demand from the recent recession. Multifamily starts are expected to increase as 1977 progresses and as the economics of rentals improves due to higher rents, lower mortgage rates and lower vacancies.

EXISTING HOME SALES, NEW RECORDS (Table 5)

Sales of existing single family homes (seasonally adjusted) continued to show strength in the first two months of 1977, up 22% and 12% in January and February, respectively. Although running well ahead of last year's record pace, volume has declined substantially from the levels reached in the last four months of 1976.

Table 5

UNIT SALES VOLUME–EXISTING SINGLE FAMILY HOMES

(000)

Annual		1975 (SA)		1976 (SA)		% Increase 1976/1975	1977 (SA)		% Increase 1977/1976	
1968	1,569	January	1,970	January	2,610	+32.5%	January	3,190	January	+22.2%
1969	1,594	February	2,150	February	2,750	+27.9	February	3,080	February	+12.0
1970	1,612	March	2,210	March	2,800	+26.7				
1971	2,018	April	2,330	April	2,790	+19.7				
1972	2,252	May	2,350	May	2,910	+19.6				
1973	2,334	June	2,410	June	2,990	+24.1				
1974	2,272	July	2,350	July	2,900	+23.4				
1975	2,452	August	2,490	August	3,070	+23.3				
1976	3,002	September	2,650	September	3,330	+25.7				
		October	2,750	October	3,290	+19.6				
		November	2,830	November	3,220	+17.3				
		December	2,940	December	3,560	+21.0				

Sales volume set an all-time record in 1976 of 3,002,000 units as is illustrated in Table 5. Volume was up an impressive 22% from the previous record year in 1975 due to a relatively attractive mortgage and economic situation.

It is this high level of activity plus inflation in the price of homes (and hence mortgage amounts) together with a high level of single family construction which has resulted in an attractive operating environment for *S&L's* and *PMI Companies.*

Nationwide, single family mortgage rates have declined noticeably from year-end levels due to strong savings flows. The nationwide effective mortgage rate (including fees) declined from 9.10% in December 1976 (the high month of the year) to 8.98% in February. We do not expect significant further declines and, in fact, in areas of high mortgage activity such as California, we expect the next move in mortgage rates to be upwards.

COMMERCIAL LOAN DEMAND . . . THE CYCLE IS ALIVE AND WELL (Table 6, Charts 1 and 2)

Until quite recently, wherever one inquired one could hear about weak loan demand. Bankers in the midst of a prolonged dry spell constantly bemoaned the lack of commercial loan demand and implied it was likely to continue for some time. Also, corporate comptrollers, sitting on huge sums of cash, generally did not anticipate borrowing from banks in the foreseeable future. Furthermore, bank pricing in the United States seemed to preclude a meaningful pick-up in loan demand. The slight pick-up in C&I loan demand begun in the summer of 1976 was discounted as artificial (primarily bankers acceptances) or seasonal.

Table 6

DOMESTIC LOANS AND SELECTED COMMERCIAL PAPER OUTSTANDING

($ in Billions – Not Seasonally Adjusted)

Date	All Banks Total Loans	Large Commercial Banks Total Loans	Large Commercial Banks C&I Loans	Large NYC Banks Total Loans	Large NYC Banks C&I Loans	Non Financial Commercial Paper	C&I Loans Large Banks & Non Financial Commercial Paper
12/5/73	$495.0	$271.0	$110.0	$65.0	$31.0	$ 8.4	$118.4
3/27/74	$497.0	$275.0	$116.0	$65.0	$34.0	$ 9.3	$125.3
6/26/74	519.0	273.0	121.0	71.0	36.0	10.0	131.0
10/2/74	530.0	300.0	129.0	75.0	39.0	12.7	141.7
1/1/75	547.0	303.0	132.0	78.0	41.0	12.7	144.7
3/26/75	$528.0	$286.0	$126.0	$72.0	$39.0	$14.3	$140.3
7/2/75	530.0	284.0	122.0	71.0	38.0	12.0	134.0
10/1/75	526.0	277.0	119.0	69.0	36.0	12.2	131.2
12/31/75	540.5	283.9	120.7	70.1	36.7	10.1	130.8
3/31/76	$530.9	$275.8	$114.6	$70.4	$35.0	$11.6	$126.2
6/30/76	543.7	278.7	112.8	68.8	33.4	12.7	125.5
9/29/76	550.8	279.0	112.3	67.1	32.9	12.0	124.3
12/29/76	575.9	289.0	116.5	71.0	35.1	12.3	128.8
1/26/77	$563.7	$284.1	$114.5	$67.3	$33.7	$13.8	$128.3
2/23/77	568.7	285.1	115.3	67.4	33.6	14.9	130.2
3/23/77	571.9	287.8	117.2	66.8	33.9	15.0*	132.2

* As of 3/16/77

Seen from a different perspective, however, we feel that a significant, however gradual, pick-up in commercial and industrial loan demand began in the summer of 1976 and is likely to continue to build momentum in 1977. Our conclusion is based on the following assumptions.

1. The severe 1973–1975 recession produced an environment beyond most businessmen's experience . . . nothing like this had been seen in 30 years. However, we feel the chief difference is in degree not in kind.

   a. It is normal that an unusually severe decline should produce extraordinary business caution concerning inventory levels and capital expenditures.

   b. Also, emphasis on increased corporate liquidity is understandable.

   c. In this context, the precise timing and rate of the pick-up in business loans is impossible to predict with any precision. There is nothing within the past 30 years to relate to regarding fine tuning estimates of loan demand.

   d. However, given an economic recovery, it is only a matter of time before business loans increase. The recovery was a year and a half old when business loans appeared to bottom out in September 1976.

2. Loan activity is dynamic . . . not static. The cycle is alive and well.

   a. Negative momentum bottomed out in spring of 1976 and turned positive in late summer of 1976 (see Chart 1 on page 13)

   b. Given a continued economic recovery, positive momentum is likely to accelerate rather than diminish.

   c. People on the firing line often have the worst perspective . . . and perspective is everything in a cyclical situation.

      (i) Bank lending officers and corporate comptrollers are not always the best sources of meaningful insights.

      (ii) The build-up in loan demand is likely to feed on itself (positive momentum). Inventories and capital expenditures are first increased by a few special businesses and/or businessmen (more aggressive or entrepreneurial).

3. Evidence to date seems to support our thesis (see Chart 1).

   a. Major bank business loans have clearly begun a meaningful upswing.

Chart 1
C&I LOANS

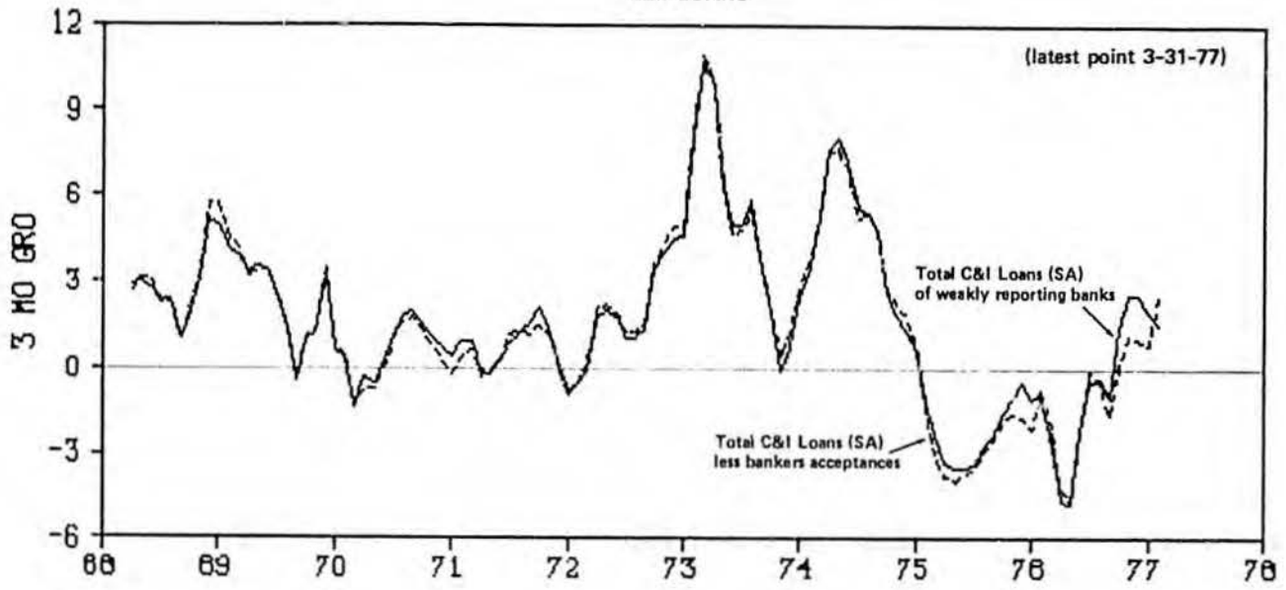
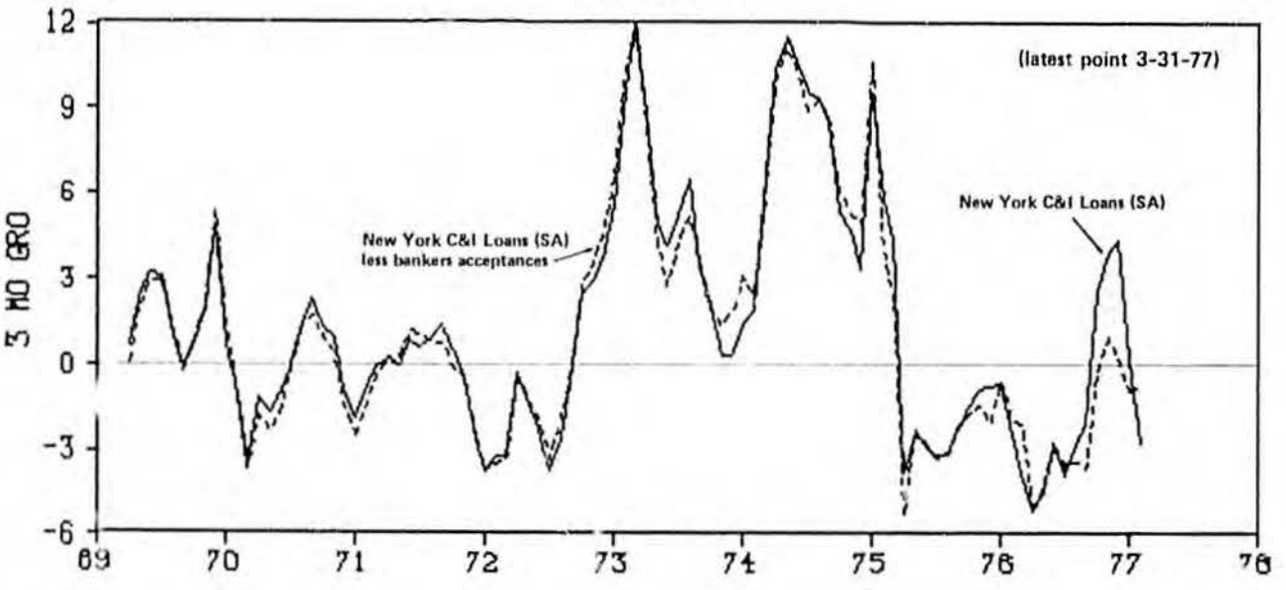


Chart 2
C&I LOANS NY



b. The delayed upswing of business loans at the New York City banks is understandable, although at least the decline has slowed and C&I loans less acceptances show a smoother progression (see Chart 2).

(i) Domestic lending by NYC banks competes with the Eurodollar markets where lower borrowing rates have enabled U.S. corporations to borrow cheaper. Thus, to some degree, New York banks' overseas loan demand may have been strong at the expense of domestic loan demand.

(ii) NYC banks compete to a greater degree with the bond and commercial paper markets.

(a) Record 1976 bond market volume (both in the public and private markets) reflects both relatively attractive rates and a corporate need to refinance short-term debt with long-term debt.

(b) Commercial paper, although competitive on a price basis, has probably drained off a limited amount of bank business. The paper market has also been relatively sluggish, reflecting business caution and bond refundings.

4. What could go wrong with our positive scenario is a significant slowdown in the economic recovery or another recession which would obviate the need for additional borrowing. We do not presently feel these are likely prospects.

SLOW PROGRESS ON REAL ESTATE PROBLEMS. . .A LESSON FOR BANKERS (Table 8)

Recently, at the Annual Banking Symposium, we were struck more by audience reaction to a panel on real estate than by any particular comments made by the panelists. The gist of the panelists' remarks supported our feeling that a significant and broad-based real estate recovery was underway in the United States. Many bank stock analysts we talked to after the session seemed somewhat surprised by this conclusion. . . surprise that is understandable given the lack of apparent progress made by most banks with their real estate problems. In fact, although some banks have shown improvement recently, the general trend of real estate problems over the past two years has been upwards. All of this simply serves to underscore the persistent nature of problem real estate loans. Once a loan has gone on non-accrual, it is generally a sign that a traumatic event has taken place. . . a bankruptcy or personal financial catastrophe. . . which seriously disturbs the *"value creating process"* of real estate development. Once this traumatic point has been reached, there is seldom a bounce back to health but more often than not, a painful and gradual change in ownership occurs, often through a foreclosure proceeding. This legal transfer of ownership usually involves new management which is forced to pick up the pieces left by an entrepreneur. In the very specialized and highly leveraged area of real estate development, this is always tricky and generally time consuming.

All of this is by way of introducing Table 8 (page 16)–which indicates the substantial progress made by five major REIT's with their problems over the past 21 months. *We feel this progress illustrates the type of progress that to a lesser degree is occurring in banks' real*

Table 7

CORPORATE CASH FLOW ITEMS

($ in Billions)

	Internal Funds			(–)	Operating Requirements				(=)	Internal Cash Flow	
	Net Profit	Capital Cons. Allow.	Total		Dividend	Fixed Investment	Inventory Change	Total		Net Cash Flow	Sufficiency Ratio
Annual											
1960	$ 25.8	$ 27.5	$ 53.3		$12.9	$ 47.7	$ 3.8	$ 64.4		$-11.1	82.7%
1961	25.8	28.4	54.2		13.3	47.1	2.2	62.6		- 8.4	86.6
1962	29.6	29.3	58.9		14.4	51.2	6.5	72.1		-13.2	81.6
1963	31.5	30.4	61.9		15.5	53.6	6.0	75.1		-13.2	82.4
1964	36.7	31.7	68.4		17.3	59.7	5.8	82.8		-14.4	82.6
1965	$ 44.3	$ 33.7	$ 78.0		$19.1	$ 71.3	$ 9.5	$ 99.9		$-21.9	78.1%
1966	47.1	36.7	83.8		19.4	81.4	14.3	115.1		-31.3	72.8
1967	44.9	40.4	85.3		20.1	82.1	10.1	112.3		-27.0	76.0
1968	46.2	44.4	90.6		21.9	89.3	7.7	118.9		-28.3	76.2
1969	43.8	49.4	93.2		22.6	98.9	9.4	130.9		-37.7	71.2
1970	$ 37.0	$ 55.1	$ 92.1		$22.9	$100.5	$ 3.8	$127.2		$-35.1	72.4%
1971	44.3	60.6	104.9		23.0	104.1	6.4	133.5		-28.6	78.6
1972	54.6	65.4	120.0		24.6	116.8	9.4	150.8		-30.8	79.6
1973	67.1	68.1	135.2		27.8	136.0	17.9	181.7		-46.5	74.4
1974	75.2	80.8	156.0		30.8	149.2	10.7	190.7		-34.7	81.8
1975	65.3	96.6	161.9		32.1	147.1	-14.6	164.6		- 2.7	98.4
1976E	$ 84.4	$107.9	$192.3		$35.2	$160.0	$14.8	$210.0		$-17.7	91.6%
1977E	95.9	119.5	215.4		40.0	175.7	14.8	230.5		-15.1	93.4
1978E	105.6	136.0	241.6		45.2	193.7	21.2	260.1		-18.5	92.9
Quarterly											
1975											
1Q	$ 54.0	$ 90.8	$144.8		$31.7	$148.0	$-22.2	$157.5		$-12.7	91.9%
2Q	61.0	95.0	156.0		31.9	145.8	-30.0	147.7		+ 8.3	105.6
3Q	72.1	98.7	170.8		32.6	146.1	- 2.0	176.7		- 5.9	96.7
4Q	74.1	101.9	176.0		32.2	148.7	- 4.3	176.6		- 0.6	99.7
1976E											
1Q (A)	$ 79.7	$104.2	$183.9		$33.1	$153.4	$ 14.8	$201.3		$-17.4	91.4%
2Q (A)	82.7	106.8	189.5		34.4	157.9	16.0	208.3		-18.8	91.0
3Q (A)	85.1	108.9	194.0		35.4	163.0	15.1	213.5		-19.5	90.9
4Q (P)	90.2	111.6	201.8		37.7	166.0	13.2	216.9		-15.1	93.0
1977E											
1Q	$ 91.1	$114.6	$205.7		$38.4	$169.5	$ 12.0	$219.8		$-14.1	93.6%
2Q	96.1	117.6	213.7		39.5	173.9	14.0	227.4		-13.7	93.9
3Q	97.3	120.8	218.1		40.6	177.5	16.0	234.1		-16.0	93.2
4Q	99.2	124.8	224.0		41.5	181.9	17.0	240.4		-16.4	93.2

Note: Economic statistics from Series A Economic Forecast.

Basic Assumptions	1975A	1976P	1977E	1978E
Real GNP	-1.8%	6.2%	5.0%	5.0%
CPI	9.1%	5.8%	5.7%	5.0%

estate portfolios. To a lesser degree, because banks probably have somewhat riskier loans than these insurance company sponsored REIT's and are probably less able to deal with the problems. Nonetheless, the type and degree of progress illustrated here is likely to be similar to that of the banks over the next two years.

Table 8

PROGRESS ON REAL ESTATE PROBLEMS OF FIVE* REIT'S

($ in Million)

Quarters**	Loans on Non Accrual	Foreclosed Real Estate			Total Non Earning (Loans & RE)	Total Non Earning Loans & Foreclosed RE
		Non Earning	Earning	Total		
Fiscal 1975-76						
No. 2	$ 97	$ 27	$ 7	$34	$124	$131
No. 3	119	27	7	34	146	153
No. 4	118	40	7	47	158	165
Fiscal 1976-77						
No. 1	$104	$ 49	$31	$ 80	$153	$184
No. 2	95	58	34	92	153	187
No. 3	79	65	46	111	144	190
No. 4	72	67	47	114	139	186

*Conn. General, Equitable, MassMutual, MONY and Northwestern Mutual.

**Since the five trusts have different fiscal years, the quarters have been arranged as follows: No. 1 (qtrs. ending March, April, May), No. 2 (qtrs. ending June, July, August), No. 3 (qtrs. ending September, October, November), and No. 4 (qtrs. ending December, January, February).

The above table illustrates how persistent real estate problems become once they surface. Accepting the fact that the statistics only show *net* rather than *gross* changes, we know from following the progress of individual properties that the net changes generally reflect gross changes.

Overall problems (non-earning loans and foreclosed real estate) rose during six of the past seven quarters from $131 million to $190 million. Only a modest decline occurred in the latest quarter (from $190 million to $186 million). However, the change in mix during this period has been *very* positive. A significant progression has occurred from *"non-earning loan"* to *"foreclosed but non-earning real estate"* to *"foreclosed earning real estate"*. On foreclosure, the lender obtains legal title to the property and can then begin making improvements with confidence. *"Foreclosed earning real estate"* means that after operating costs (but before any interest expenses) the property is earning money. Once a property is generating an attractive return (10-12% in most cases) it can usually be sold or mortgaged to produce an optimum long-term return to the owner. Basically, Table 8 underscores how long it takes to gain title and improve a property to the point that it can be disposed of at a "profit" (or at least at a minimum loss).

Significantly, non-earning loans which amounted to 74% of total problem investments for these five REIT's seven quarters ago declined to only 39% of total problem investments in the latest quarter. Even more vividly, the dollar amount of non-earning loans declined 26% during this period while foreclosed properties increased 235%. Since earning foreclosed properties have increased to 41% of total foreclosed properties during this period, we expect some significant reduction of total problem properties in the next year and a dramatic reduction over the next two years.

Again, we emphasize the significance of this good news lies beyond the positive prospects for these five REIT's (in the form of higher dividends). The progress illustrated here and likely over the next two years, should mirror the progress . . . although in a somewhat premature way. . .likely to be experienced by banks with their problem real estate loans.

RR-77-65

-Research Department-

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COMMERCIAL BANKS

	Shares O/S (Mil.)	Recent Price	1977 Price Range	Mkt. Cap. (Mil.)	EPS Growth Rate 10 Yr.	EPS Growth Rate 5 Yr.	Earnings Per Share* 1974	1975	1976	1977E	P/E 1976	P/E 1977	Book Value	Premium (Discount) on Book	Indicated Div.	Indicated Yield
Eastern																
Bankers Trust	11	$38	$42-36	$ 418	1%	Neg	$6.82	$5.88	$4.76	$5.25	8.0X	7.2X	$61.80	(38)%	$3.00	7.9%
Chase Manhattan	32	30	33-30	960	Neg	Neg	5.00	4.30	2.94	4.00	10.2	7.5	52.00	(42)	2.20	7.3
Chemical New York	14	42	45-40	588	4	6%	5.96	6.35	5.92	6.50	6.6	6.0	60.01	(30)	2.88	6.9
Citicorp	125	29	34-27	3,625	13	16	2.51	2.73	3.08	3.50	9.4	8.3	20.67	40	0.96	3.3
Manufacturers Hanover	30	39	41-36	1,170	9	15	4.28	4.59	4.82	5.30	8.0	7.4	36.57	7	1.92	4.9
Mellon National Bank	10	55	58-53	550	6	10	6.18	6.49	6.62	7.10	8.3	7.7	67.19	(18)	2.60	4.7
J. P. Morgan	39	51	57-50	1,989	11	12	4.69	4.96	5.04	5.30	10.1	9.6	37.61	36	2.00	3.9
Southern																
NCNB Corp.	17	$12	$12-10	$ 204	9%	Neg	$1.05	$1.10	$1.20	$1.40	10.0X	8.6X	$12.53	(4)%	$0.52	4.3%
Wachovia Corp.	11	18	21-17	198	7	3%	1.78	1.96	2.03	2.10	8.9	8.6	14.60	23	0.54	3.0
Midwestern																
Continental Illinois Corp.	18	$55	$60-56	$ 990	11%	13%	$5.53	$6.84	$7.45	$8.20	7.4X	6.7X	$51.54	6%	$2.40	4.4%
First Chicago Corp.	40	20	22-19	800	8	4	2.65	2.67	2.35	2.80	8.5	8.5	24.12	(17)	0.96	4.8
National City Corp.	7	43	45-41	301	10	13	3.91	4.56	5.00	5.40	8.6	8.0	32.42	33	1.85	4.3
National Detroit	12	26	29-25	312	9	6	3.42	4.05	4.38	4.70	5.9	5.5	39.07	(34)	1.52	5.8
Southwestern																
First City Bancorp of Texas	10	$34	$37-31	$ 340	12%	12%	$2.70	$3.11	$3.45	$3.80	9.9X	8.9X	$24.08	41%	$1.00	2.9%
First International Bancshares	15	38	43-38	570	14	14	3.11	3.51	3.80	4.15	10.0	9.2	25.14	51	1.20	3.2
Republic of Texas	11	32	34-30	352	12	17	3.48	4.01	3.98	4.40	8.0	7.3	28.65	12	1.20	3.7
Texas Commerce	12	35	39-34	420	14	15	2.50	2.97	3.27	3.70	10.7	9.5	19.73	77	1.10	3.1
Western																
BankAmerica	146	$26	$30-25	$3,796	11%	15%	$1.86	$2.19	$2.40	$2.75	10.8X	9.4X	$15.78	65%	$0.80	3.1%
Crocker National	12	27	29-25	324	5	3	2.29	3.35	3.40	3.80	7.9	7.1	33.20	(19)	1.66	6.1
Seafirst	9	34	35-32	306	11	13	3.28	3.61	4.05	4.50	8.4	7.6	30.45	12	1.24	3.6
Wells Fargo	20	26	28-26	520	9	11	2.53	2.80	3.16	3.75	8.2	6.9	27.08	(5)	1.12	4.3

*Fully diluted where appropriate

SAVINGS AND LOAN ASSOCIATIONS

	Shares O/S (Mil.)	Recent Price	1977 Price Range	Mkt. Cap. (Mil.)	Earnings Per Share 1971	1972	1973	1974	1975	1976	1977E	P/E 1976	1977	Indicated Div.	Yield
First Charter	29.6	$15	$17-13	$440	$1.50	$1.73	$1.34*	$1.64	$1.70	$ .50	$3.10	6.0X	4.8X	$0.60	4.0%
Gibraltar	8.6	10	10- 8	86	0.87	1.24	1.41	0.95	1.18	1.95	2.70	5.1	3.7	0.40	4.0
Great Western	14.9	23	24-20	345	2.03	2.50	2.75	2.25	1.53	3.30	4.35	7.0	5.3	0.50	2.2
Imperial Corporation	13.7	16	17-15	219	1.22	1.60	1.81	1.72	2.06	2.98	3.60	5.4	4.4	0.24	1.5
United Financial	6.5	12	13-11	78	1.16	1.28	1.56	1.27	1.40	2.30	3.20	5.2	3.8	0.40	3.3

*After a loss from security transaction of 43¢.

REAL ESTATE INVESTMENT TRUSTS

	Fiscal Year	Shares O/S (Millions)	Mkt. Cap.	Earnings Per Share FY 1976	Last 12 Mos.	Last Qtr. 4X	Est. FY 1977	1977 Price Range	Recent Price	Book Value	Quarter Div. X4	Yield on Last Quarter Div.
Long-Term Trusts												
Conn. General*	March	5.7	$103	$1.68	$1.64	$1.64	$1.60	$20-16	$18	$19.24	$1.60	8.9%
Equitable Life	Oct.	5.6	128	2.07	2.16	2.36	2.40	26-23	23	23.66	2.20	9.6
Mass. Mutual	Oct.	4.7	66	1.09	1.11	1.16	1.30	15-12	14	19.38	1.16	8.3
Mony	May	8.8	88	0.84	0.87	0.88	1.00	11-10	10	9.92	0.92	9.2
Northwestern Mutual	March	4.8	62	0.52	0.76	0.88	0.90	14-12	13	19.08	1.00	7.7
Hotel Investors	Aug.	1.5	18	1.01	0.98	1.28	1.30	13-12	12	17.78	1.28	10.7
PNB Mortgages	Sept.	2.4	19	0.46	0.48	0.52	0.75	9- 8	8	18.49	0.40	5.0
RAMPAC	Nov.	1.9	23	1.14	1.14	1.28	1.00	12-10	12	18.08	1.16	9.7
Equity and Short-Term												
General Growth Corp.	Sept.	6.2	136	1.16	1.12	1.16	1.30	23-21	22	6.14	1.40	6.4
Lomas & Nettleton	June	3.7	56	1.16	0.71	0.84	0.90	16-14	15	31.61	0.84	5.7
Property Capital	July	2.1	23	1.19	1.20	1.20	1.25	12-11	11	13.67	1.20	10.9
Saul (B.F.)	Sept.	5.7	17	NA	–	–	–	4- 3	3	7.27	0.00	–

PRIVATE MORTGAGE INSURERS AND MISCELLANEOUS

	Fiscal Year	Shares O/S (Millions)	Mkt. Cap.	Earnings Per Share 1972	1973	1974	1975	1976	1977E	1977 Price Range	Recent Price	1977 P/E	Yield
AMIC	Dec.	2.2	$ 31	$0.98	$1.27	$1.03	$1.07	$2.44	$3.10	$18-14	$14	4.5X	0.3%
FNMA	Dec.	48.3	773	1.79	2.25	1.90	2.00	2.18	2.30	17-15	16	7.0	5.1
MGIC	Dec.	22.0	330	1.28	1.95	1.20	0.10	1.15	1.80	21-15	15	8.3	0.5
Rouse*	Dec.	12.9	65	0.67	0.77	0.05	0.42	0.34	0.65	5- 4	5	7.7	0.0
United Guaranty	Dec.	3.8	48	0.77	1.05	0.85	0.11	1.86	2.40	14.11	12	5.0	0.0

*Cash flow per share instead of earnings per share used.

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Thomas C. Pryor
Executive Vice President (212) 285-2666

Harold W. Janeway
Director of Investment Policy (212) 285-2060

Jerome P. Kenney
Director of Research (212) 285-2020

Richard A. Kimball
Director of Marketing (212) 285-2374

Frank J. Ritger
Senior Vice President (212) 285-2120

A. Gary Shilling
Chief Economist (212) 285-2670

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George H. Cleaver	Metals & Mining	(212) 285-2012
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Energy		
A. Hager Bryant, 3rd	Gas Pipelines and Distribution	(212) 285-2696
Philip L. Dodge	Oil, Gas	(212) 285-2043
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William N. Walling, Jr.	Coal	(212) 285-2438
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Michael M. Harshbarger	Drugs	(212) 285-2698
L. John Wilkerson	Hospital Products	(212) 285-2695
Market Analysis		
H. Carroll Mackin	Computer Support—Performance Monitor	(212) 285-2056
Peter J. Canelo	Computer Support—Performance Monitor	(212) 285-2256
John A. Mendelson	Technical Analyst	(212) 285-3753
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Stover L. Babcock, Jr.	Special Situations	(212) 285-2026
James C. Blair	Computers, Office Equipment	(212) 285-2045
Craig W. Fanning	Electrical Equipment	(212) 285-2030
Anthony G. Langham	Instrumentation, Semiconductors	(212) 285-2047
Jack K. Smith	Computers	(302) 571-5128
Utilities		
Marjorie M. Jones	Electric, Telephone	(212) 285-2040
Edward A. Pescatello	Electric, Telephone	(212) 285-2066

Support Services		
Emily K. Baldt	Research Assistant	(302) 571-5133
Jeanne M. Gallagher	Editor	(212) 285-2075
Robert Margolis	Art Director	(212) 285-2319
Ellen L. Miller	Librarian	(212) 285-2085
Mary M. Rieser	Assistant to Director of Research	(212) 285-2020
Ann T. Stott	Institutional Marketing	(212) 285-2064

ONE LIBERTY PLAZA, NEW YORK, N.Y. 10006

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Money and Bond Market Developments—Weekly

David H. Kopf
Money Market Economist

April 15, 1977

Prices of fixed income securities traded in a narrow range until Thursday morning when the scrapping of the Administration Economic Stimulus Program sent prices soaring. A massive increase in the monetary aggregates, and a strong gain in March industrial production, announced on Thursday, produced only modest retrenchment, and by mid-day on Friday intermediate Government issues were yielding roughly 30 basis points less than a week earlier. Over the near term, prices may move down slightly from present levels as some of the initial exuberance over the Carter tax decision fades away.

The monetary aggregates surged in the week ended April 6: M1 rose $5.0 billion to $319.1 billion and M2 rose $6.8 billion to $761.5 billion. M1 is now--(on a weekly basis)--above its long run target and is probably above the short run target as well. (M2 is at the top of its ranges.) The Federal Open Market Committee meets on Tuesday, but tightening action seems unlikely until the money managers get a better reading on the money supply for April.

The decision to cut back the Administration Stimulus Program, together with spending shortfalls and higher than projected revenues, have substantially reduced the projected Federal deficit. It would now appear reasonable to place the fiscal year deficit at $58 billion including off-budget financing. (Or $48 billion on the popular unified budget basis--$20 billion under the earlier official estimate of $68 billion.)

With the projected deficit reduced, the Treasury has considerable leeway in its financing operations, particularly in the current quarter, when the deficit will be modest, and might actually show a surplus. However, the Treasury cash balance is normally built up in the April-June quarter. In addition, the success of the policy of regular financing patterns would support the view that new cash will be raised, but in somewhat reduced volume, now that the stimulus package has been abandoned. The May refunding, to be announced about April 27 could thus follow the traditional pattern: new cash of $1 billion through 3 year notes, a like amount through the 7 to 10 year issue and perhaps $0.5 billion through a long bond. Regular two year issues at month end and a four year note could, as needed, comfortably raise additional cash by September 30. There is considerable speculation that the debt managers may make increasing use of the bill market, possibly beginning in early June. At that time some temporary cash needs develop, and the volume of maturing bill shrinks somewhat. However, Treasury use of the bill market to raise new cash may be moderated by the knowledge that the volume of Government securities in the one year and under category will automatically rise by more than $3.0 billion this quarter because of maturity shifts of coupon issues.

Economic data, all for the month of March, to be released next week include: housing starts out Monday which may equal the 1.8 million February rate, and personal income (to be released on Tuesday), expected to rise at a 10.0 per cent annual rate. On Thursday the erratic series on new orders for durables could show a strong gain, on the order of 20.0 per cent at an annual rate, and the consumer price index is expected to gain at a 7.0 per cent rate. Quarterly income and product data, to be released on Wednesday, is expected to confirm a slow first quarter, with real GNP up at a 4.5 per cent rate.

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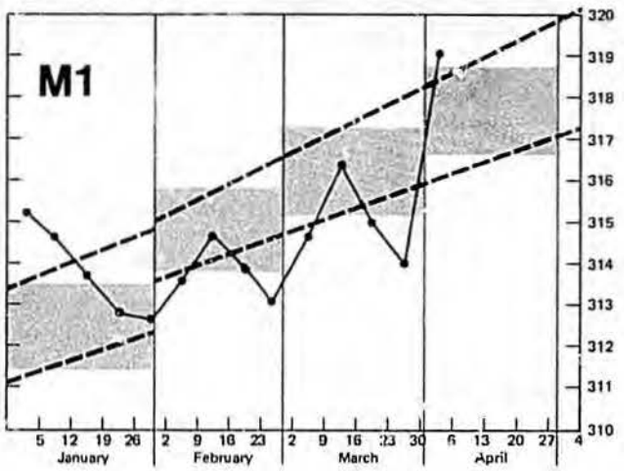
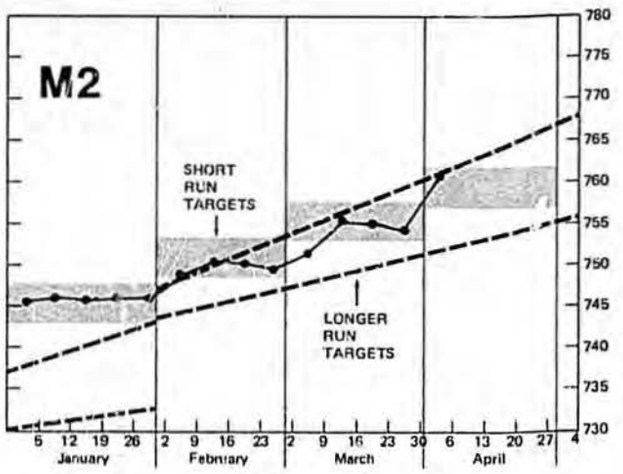
THE MONETARY AGGREGATES

(Daily Average, Billions of Dollars)





GROWTH RATES: Latest Four Weeks, Annualized, From:

	4 Weeks Ago	13 Weeks Ago	26 Weeks Ago	52 Weeks Ago
M1	8.7%	4.0%	5.5%	5.9%
M2	10.0	8.2	10.5	10.6

GROWTH TARGETS: Annualized Rates

	Short Run (Feb- Apr)Est	Longer Run (From 1976-IV)
M1	3- 7%	4½- 6½%
M2	6-10	7 -10

INTEREST RATES

(Average, Week Ended Wednesday)

	Short Term				Mediur and Long Term				
	Fed. Funds	Fed. Funds Target	90-Day Bills	90-119 Day Comm. Paper	3-5 Yr. Treasury	Long Treasury	Corporate Bond (Aaa)	Utility Bond (Aa)	GNMA
Mar. 16	4.62	4.63	4.59	4.75	6.72	7.73	8.11	8.48	8.03
Mar. 23	4.77	4.63	4.57	4.75	6.68	7.71	8.08	8.48	8.02
Mar. 30	4.74	4.63	4.59	4.75	6.70	7.74	8.10	8.51	8.05
Apr. 6	4.60	4.63	4.56	4.75	6.70	7.72	8.09	8.54	8.01
Apr. 13	4.65	4.63	4.58	4.75	6.70	7.77	8.10	8.54	7.98

Other Rates (Apr. 13) Discount Rate: 5.25 per cent. Prime Rate: 6.25 per cent.

BANK RESERVES AND FEDERAL RESERVE OPERATIONS

(Average Levels, Millions of Dollars. Sign Indicates Effect on Excess Reserves.)

	Apr. 6 Change	Apr. 13 Change	Apr. 13 Level	Apr. 20 Change (Est)
Treasury Deposits, Float, Currency	+3216	+147	-96664	-1300
+ Required Reserves and Other Accounts, Net	+ 711	+528	- 2660	-1700
+ Federal Reserve Security Holdings, Outright	-1733	-966	+99180	+3537
+ Securities Held Under Repurchase Agreement	-2237	+321	+ 410	- 410
+ Estimated Effect of Action Required This Week				- 127
= Net Free Reserves	- 43	+ 30	+ 266	0
+ Borrowing	+ 7	- 25	+ 26	0
= Excess Reserves	- 36	+ 5	+ 292	0
Memo: Matched Sale/Purchase Agreements	-1688	-717	- 3541	

Fed Action for own Account, week of Apr. 13: 7 day reverses announced for April 7, on April 6; 3 day matched sale, April 11; overnight repos, April 13.

OUTSTANDING MONEY MARKET INSTRUMENTS, BUSINESS LOANS

(Billions of Dollars)

	Mar. 23	Mar. 30	Apr. 6	Apr. 13
Commercial Paper	55.2	55.0	56.4	NA
Commercial and Industrial Loans:				
All Weekly Reporting Banks	117.2	116.8	117.2	NA
New York Reporting Banks	33.9	33.9	34.1	33.8
Bank Certificates of Deposit:				
All Weekly Reporting Banks	60.2	61.8	60.9	NA
New York Reporting Banks	20.6	20.8	20.3	19.8
Treasury Bills	163.6	163.6	168.1	168.1

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John H. Charlesworth
Fixed Income Marketing

April 7, 1977

FIXED INCOME POLICY COMMENT

OUR VIEW

Relative stability in all sections of the Fixed Income markets over the past two months has alleviated a good bit of the apprehension that was evident in mid-January. While the majority of forecasters still believe a further increase in long rates is probable, the size of the increase and its timing are now subject to more divergent views. We continue to hold the view that long term rates will be no higher at year-end 1977 than they are today, even though short rates could move higher by 50 to 75 basis points as the year progresses.

Of practical concern to money managers, there is a significant interest opportunity cost to holding short term securities, given the slope of the yield curve. The spread between T-bills and 7 year Notes is about 250 basis points, which would discount as much as a 60 basis point sell-off in intermediates. We remain constructive on the market, and favor the quality end of the spectrum. We believe the most attractive area for current investment is in the 7 to 10 year maturities, with long maturities also at good working levels.

LOOKING BACK

Recent secondary market activity has diminished considerably. New issue volume continues at a reduced pace as well, both in the public and private sector. During March, the volume of new issues was about two-thirds of the year earlier level. Most issues that came were reasonably well received, selling to tag ends while still in syndicate.

One measure of the solidity of the market occurred on March 25th, when six syndicates broke in one day. While there were sharp mark-downs for one or two names, the remaining balances were readily absorbed and had little or no effect on over-all market prices.

While we are seeing reduced market participation on both the demand and supply sides, the fact that some extensive swapping is taking place is encouraging. It is evidence that at least some portfolio managers see current prices as stable enough to permit such activity without risk of sharp corrections in either direction.

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Municipal markets also showed stability in the past month, even firming a bit in prices. In this area, similar characteristics obtain on the supply side as in the corporate market, but the demand side remains very strong. New bond funds, large pools of institutional money, and individual concern about taxes all are contributing factors.

In the light of many forecasts by others earlier this year of higher rates over the balance of 1977, it is interesting that there has not been a rush by corporations to do some advance borrowing. Several major concerns have announced the opposite. Cash balances continue to build at major firms (IBM, Exxon, GE), and AT&T recently stated that 80% of current capital needs would be financed internally.

LOOKING AHEAD

THE POSITIVES

1. Visible supplies of new issue Corporate debt are only about 2/3 of last year's record monthly pace. The internal "self-sufficiency" ratios of major corporations continue to improve, and are now well above pre-recession levels. Even widespread forecasts of higher rates have not prompted major borrowings.

2. The economy is recovering from the winter's distortions. In addition, recent National Weather Service and Department of Agriculture projections are more optimistic regarding the outlook for feed-grains and farm commodities. While the threat of drought or near-drought conditions is still a very real one, the affected areas should be smaller than recently feared.

3. No major case for Federal Reserve tightening seems evident, even in the light of recent acceleration in the Money Supply growth rate. These rates are still comfortably within Fed targets, both near and longer term, and we continue to believe the Fed will be able to accommodate the Administration's fiscal programs without raising target Federal Funds rates.

4. The shape and slope of the yield curve is now penalizing those who are in the very short end of the market. Recently noted has been a growth of "re-intermediation", the movement of funds back to time accounts at banks from short term instruments. Lacking matching growth in loan and/or mortgage demand, these funds are an additional positive force on the demand side for intermediate and long fixed income markets.

THE NEGATIVES

1. The overriding negative continues to be concern over higher rates of inflation. While inflation will surely ease from the high January-February level in the coming months, it will be higher than we were forecasting as recently as three months ago.

2. President Carter's inflation fighting program (to be announced this week), energy program and tax reform package have yet to see the light of day. Until these are quantified to some degree, their potential impact will trouble portfolio managers, as unknowns are most often perceived pessimistically.

3. The diminished volume in secondary markets over the past three months has made traders reluctant to hold inventory. The fact that much of the new issue calendar is being done against swaps means that there is a strong moderating force in any rallies that develop, and additional weight in periods of weakness.

4. The potential for "crowding out" still exists as a negative over the balance of the year. Although forecasts of Treasury needs, particularly for the third quarter, have recently been reduced, government borrowing will still be at near-record levels. The growth of corporate profits (and associated tax payments) could help ease the pressures in the second half. Our view is that this will be a diminishing threat if consumer and corporate borrowings do not surge upward.

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Investment
Policy

EARNINGS WILL MATTER (AGAIN)
Summary of taped discussion of Investment Policy
by Harold W. Janeway & H. Carroll Mackin, 3/18/77

Conclusion: Relative earnings performance is likely to become a much more important determinant of stock price movements in the months ahead than over the last 1-2 years. We recommend that investors downplay the non-earnings-related investment strategies that have dominated trading over the past year or so and instead focus on those companies most likely to show significantly above-average earnings gains over the next two years (and beyond). Such stocks should prove to be the best performing investments, regardless of what happens to the economy and inflation.

Background: A number of non-earnings-related investment themes have dominated the market over the past couple of years. Among these are secondary (vs large) companies; domestic (vs international) operations; underowned (vs overweighted) in institutional portfolios; indexation (vs stock selection); market timing; top down (vs bottom up); and current dividend income. Most of these appear largely to have run their course or are at least reflected in current stock prices. Probably the most popular strategy stresses high current income. Indeed, there is a high correlation over the past several years between a stock's performance and its yield. Since June 1975, a portfolio consisting of the five highest yielding industry groups at that time would have provided an investor with a 27% total return to date, while a portfolio of the five lowest yielding groups would have shown a 9% loss for a 36 percentage point performance spread between the two. If you look strictly at industrial companies (a sample of 1600), the 10% providing the greatest yield in June '75 would have given investors a 70% total return to date, while the lowest 10% would have rendered only a 40% gain. In June '75, the yield spread between the top-yielding 10% and the bottom 10% was 8.4 percentage points; today it is only 6.9 points, with almost all of the change reflective of stock price changes. Taking another approach, at the 1974 market bottom the utilities were yielding an average of 12.4% vs a 2.5% yield on the drug stocks for a 10 percentage point spread vs 5.5 points at the end of February - a tremendous compression of the market's yield distribution.

The narrowing of these spreads has reduced the relative attractiveness of the higher yielding stocks. Focusing on the up-front dividends without factoring in future dividend and earnings growth is likely to be much less rewarding over the next year. The natural response is to look at the traditional growth stocks as the alternative, but are they? Still among the lowest yielding stocks in the market, most of the "nifty fifty" still carry P/E premiums that appear to be discounting roughly twice the growth rate of the rest of the market for the next ten years - a bit much to swallow. Consequently we do not expect the growth stock group to be market leaders in the next up cycle, except those that show earnings gains well in excess of corporate profits overall.

The best buys in the market today probably lie somewhere between the high current yielders and the low-yield growth stocks - those undifferentiated stocks with above-average earnings prospects, below-average yields, and below-average payouts (The S&P 500's dividends currently have a 43.7% payout.). What we're saying is buy those stocks that have the prospect of becoming high yielders in the future.

Outlook: Investors' primary concerns today are the possible resurgence of inflation and sharply rising interest rates. The present structure of both the stock and bond markets reflects these worries. The yield spread between stocks and bonds is at its narrowest level since 1970, and the gap between the yields on 1- and 20-year government bonds is wider than it has been in over a decade (250 basis points); both indicate expectations of higher interest rates. We believe these fears are overdone and do not expect a renewal of prolonged inflation above the 5-6% level. Nor do we foresee a sustained rise in interest rates, but rather look for interest rates to be no higher and possibly lower at yearend than currently. If our forecast of moderate (5-6%) growth and inflation are correct, then the narrowness of the yield spread between stocks and bonds argues for further investment in equities.

Looking ahead, we are forecasting aggregate corporate profits growth of about 12% this year with a slightly lower (10%) advance in 1978. These gains will be widely scattered rather than concentrated in one or two areas. Given this environment, investors should approach stock selection with an open mind, deëmphasizing the popular themes mentioned earlier and focusing primarily on relative earnings prospects and the potential for higher dividends.

Some examples would include the Aluminum Industry, whose earnings we foresee doubling over the next two years (vs our expectations of 20-25% increase in the S&P's earnings over the same period). Yields on this group are currently below average, but within a few years these should be considerably higher on today's stock prices. Among the other basics, ALLIED CHEMICAL (ACD-45 7/8) yields less than 4%, but we foresee a sharp rise in earnings to roughly the $10.00 level by 1979-80 accompanied by a substantial build-up of cash. OCCIDENTAL PETROLEUM (OXY-25 5/8), a beneficiary of North Sea oil also has substantial dividend increases in prospect. SOHIO (SOH-83 1/4) (yield 1 1/2%) is a more extreme example, with the prospect of a $5.00 dividend ($1.36 currently) by the late 70's when the North Slope oil starts to flow.

A more detailed policy statement will be out shortly.

William F. Boyd
Sales/Research Liaison

SRL-76-20

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Investment Policy

March 25, 1977

Investment Strategy—A Change

SUMMARY—EARNINGS WILL MATTER

We believe earnings will become a much more important determinant of stock price performance over the balance of this year and next. Thus, investors should emphasize those companies that are most likely to show significantly greater than average earnings gains in the next two years and beyond. Such stocks are likely to prove to be the most rewarding holdings regardless of the trends in inflation and the economy. If growth in the economy proves disappointing, and overall profits rise only moderately, relative earnings gains will be important. The same should be true if the economy is stronger than expected this year and 1978 turns out to be another good year. If inflation fails to moderate, contrary to our expectations, then strong earnings gains should provide at least a partial offset.

Although the market seemed preoccupied over the past year with a number of investment themes not directly related to earnings, disappointing earnings did not go unnoticed. In a year in which overall corporate profits rose 29%, those companies that fell short of expectations were far more impacted than those recording sharp gains. However, with overall corporate profits expected to be up only about one-half as much this year as last, sharp earnings gains should be more noteworthy. Moreover, the gains are likely to be scattered, not concentrated in one or two areas. Thus, investors should approach the selection process with an open mind, de-emphasizing the popular investment theories that have come to be widely accepted as universal truths. Increased emphasis on earnings gains does *not* imply a return to traditional growth-stock investing. Companies with outsize earnings gains should qualify; those with average gains are more likely to be average performers. Above-average price performance is most likely in those cases where the earnings gains are converted to dividends over the next two or three years.

WHY CONCENTRATE ON EARNINGS GAINS?

There are four reasons why we believe investors should stress companies showing substantial earnings progress over the next two years: first, to offset inflation. Over the past few months investors have raised their inflation assumptions, but do not appear to have made a corresponding adjustment in their investment selections. Second, big earnings should be less common in 1977-78. We estimate the average earnings gain for the two year period in the 20-25% range. Third, the market in general appears reasonably priced with little downside risk. However, we do not expect a material expansion in P/E ratios. Consequently the increase in the market averages will reflect primarily earnings growth. Individual stock selection will also be of prime importance. Fourth, dividend growth will take on more importance than current yield. Major earnings gains are likely to lead to larger dividend increases.

1. Offsetting Inflation

Virtually every 1977 inflation forecast was revised upward during the winter months, ours no exception. Most forecasts were increased for 1978 and beyond as well. Investors in general are more pessimistic on inflation than they were last fall. However, with the exception of the weakness in the insurance stocks, which are considered the most inflation-sensitive group, there has been little discernible change in the make-up of the stock market. High yielding stocks held up better than most.

We believe most people over-reacted to the winter's effect and expect that inflation will begin to moderate in the second quarter and ease further in the last half of the year to around a 5% rate. Mother Nature permitting, price increases need not accelerate in 1978. If inflation were to decline to lower levels, the prospects for the market as a whole obviously would be enhanced. In such a case we believe greater appreciation would occur in issues providing more exposure to the earnings potential inherent in a sustained economic improvement. If inflation does *not* moderate as much as we expect, then the market as a whole will be disappointing, but those companies with sharp earnings gains would stand out. Companies can compensate for inflation, but not always immediately, not under price controls, and not when the inflation is unexpected. All of these conditions prevailed in the early 1970's, but do not exist today. Inflation-consciousness among businessmen now is high —if anything too high. The estimated average 1976 return on equity of 14%, above the 12% considered reasonable a few years ago, is evidence (at last!) that equities do afford inflation protection. Larger earnings increases provide more long-run protection.

2. Overall Profit Gains Moderating

By the fourth quarter of 1976 profit increases had eased significantly from the high rate earlier in the year. We are projecting corporate profit gains of around 12% for 1977 as a whole and tentatively estimating gains of roughly 10% in 1978. Thus, the period of sharp profit recovery is now behind us. From here forward those companies recording exceptionally large earnings gains over the two years, rather than in 1977 alone, should stand out more clearly. Among the 425 companies that we follow we have attempted to identify those which appear capable of recording gains that are at least double the average expected increase. (A list of these companies appears on page 8). A number of the lower-multiple stocks with large earnings increases in prospect have outperformed the market over the past 3-6 months, indicating that relative earnings gains have had an influence in the market. However, the lower-yielding, higher P/E stocks have continued to lag making some of them particularly attractive. We see the influence of earnings expanding in the months ahead. If anything, the fear of higher inflation should focus greater attention on the increase in earnings.

3. Overall Stock Market Outlook Satisfactory

We believe the stock market is reasonably priced. With the S&P 500 selling at about 9 times estimated earnings to yield nearly 4½% on prospective 1977 dividends, the risks are modest indeed. The following charts serve to underscore our view showing that the earnings yield on stocks is now moderately above bond yields, a relatively uncommon experience over the past decade, (Chart 1), and that the bond stock yield spread has declined substantially from the highs of early 1976 to the lowest level since 1969 (Chart 2).

Chart 1
Bond/Stock Yield Comparisons

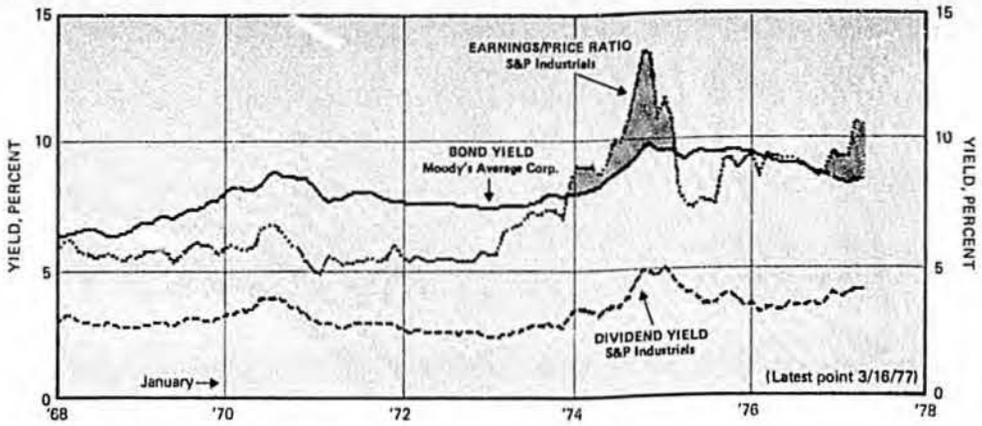
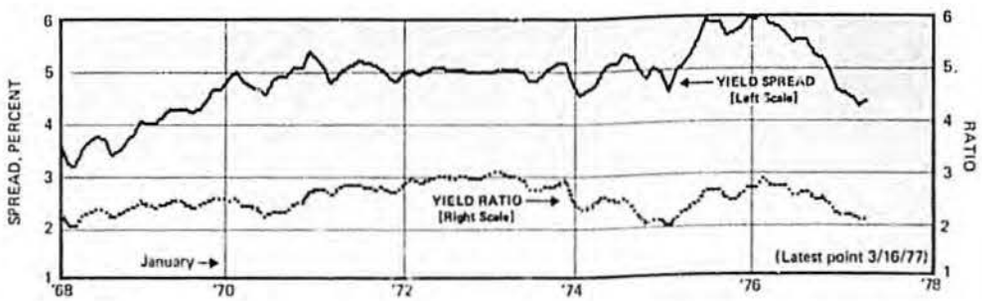


Chart 2
Bond/Stock Yield Differentials



We have felt for some time that investors should assume a continuation of a relatively low-confidence market environment. This remains our view. We believe that P/E ratios will not rise materially and that the gains in the market over the coming 12 months are likely to approximate the increases in earnings and dividends that we foresee this year and next. This implies a market level 10-15% higher in a year. Therefore, we expect selectivity and stock price-sensitivity to be extremely important to achieving satisfactory investment performance. To a much greater degree than in 1976, the discriminator to apply in selecting stocks should be relative earnings performance. We do not mean to imply that the *only* stocks to buy are those with the prospect of unusually sharp earnings gains. There are other values among companies whose earnings in 1975-76 were particularly impressive that are not fully reflected in today's prices and among companies where earnings may be currently flat or down, but show promise of large gains starting in 1977 or 1978.

Some of the companies for which we see substantial 1976-78 earnings gains provide little or no current return. In such cases good earnings growth in the past few years and poor market performance have brought their P/E's to levels that seem low by any reasonable standard. Their P/E's relative to the market are as low as at previous bear market lows. The following tables compare current P/E's on the growth stocks we consider attractive with those prevailing at previous market-cycle lows.

COMPARISON OF CURRENT P/E WITH PAST BEAR MARKET YEARS

	P/E Level				Relative P/E to S&P 500			
	1966	1970	1974	1977E	1966	1970	1974	1977E
Digital Equipment	37.5	32.0	12.6	16.1	2.8	2.4	1.8	1.8
General Reinsurance	14.7	13.5	17.6	16.6	1.1	1.0	2.5	1.2
Hewlett Packard	23.9	21.1	16.9	17.2	1.8	1.6	2.4	1.9
IBM	29.9	24.6	12.0	15.3	2.3	1.8	1.7	1.7
Kresge	14.3	18.0	17.7	14.0	1.1	1.3	2.5	1.5
Lowe's	–	15.4	10.5	14.1	–	1.1	1.5	1.5
McDonald's	10.7	18.8	12.4	13.9	0.8	1.4	1.8	1.5
Sony	--	13.5	8.7	13.9	–	1.0	1.2	1.5
Tektronix	14.3	16.5	5.9	10.6	1.1	1.2	0.8	1.2
S&P 500	13.2	13.5	7.0	9.2	–	–	–	–

4. Earnings Growth—Dividend Growth

The market has been dominated by interest in high-yielding stocks (and bonds) over the past year. We remain optimistic on the outlook for dividends, estimating a 21% increase in the S&P 500 dividends from $4.05 in 1976 to $4.90 in 1978. The estimate assumes a comfortable payout-ratio of only 40-41%. If return on equity is maintained at last year's 14%, the plowback rate would equal 8¼%, an historically high level. Thus, even if earnings decline or inflation accelerates somewhat, dividends could continue to rise in real terms. With the exception of a few non-capital-intensive companies—Avon, Coke, IBM for example—and some high-return, low-payout companies such as Halliburton, Kresge or Schlumberger, investors should not assume a major rise in payout ratios. Thus, the biggest dividend gains generally will parallel earnings. Higher prospective returns on today's stock prices should be attained by focusing on long-term dividend prospects. Increased emphasis on earnings gains does *not* necessarily imply a return to traditional growth-stock investing. Those companies with outsize earnings gains should qualify regardless of the type of stock.

INVESTMENT THEMES--FADING IMPACT

By this time last year investors had set their sights on a good economy and a profit recovery at least as large as that which materialized. Since that time the market has remained in a narrow range, but as most investors are well aware, the trendless pattern of the overall market camouflaged substantial gains and losses among different sectors and industry groups.

There are five investment themes that played a major role in relative stock price performance of these different groups during the past one to two years. These are: emphasis on current income, companies with primarily domestic rather than international exposure, portfolio diversification (indexation), institutional over-and under-ownership and secondary companies. These are all valid considerations that we have espoused, but markets have a way of adjusting and much adjustment has occurred.

1. Current Income

There is no question about investors' increased emphasis on yield. The reasons for this are well known and understandable. However, it is important to recognize that the trend has been underway for the better part of two years. The data in the table below shows how significantly the distribution of yield has changed over the past three years. In brief, the yield spread, which was extreme at the market lows in 1974, is now much more narrow. At the end of 1973 the drug group provided an average yield of 1.4% while the electric utilities yielded 8.0%. On September 30, 1974 (close to the market low) the yields were: drugs 2.5%, electric utilities, 12.4%. At the end of February, 1977 the drugs yielded 2.9%, the electrics 8.4%, a narrowing of the spread from 9.9 percentage points to 5.5 points. Our recent study of the 50 largest companies in the S&P 500 (see March Research Review) made clear how a number of relatively low yielding stocks with below-average payout ratios and high returns on equity compared favorably from the standpoint of future income with higher current-yield stocks when approaching the valuation process on the basis of prospective yields reflecting estimated growth in dividends. We advise more emphasis on ***growth in dividends*** and less emphasis on current income. Long-term dividend growth of course increases the importance of earnings growth. This will be particularly true from this point forward because we do not believe the payout ratios of most groups with high current yield will increase materially.

DISTRIBUTION OF DIVIDEND YIELD OF INDUSTRIAL STOCKS

	Average Yields Of Groups (Sample of over 1,600 Industrial Companies)		
	Highest Yielding 10% Issues	Lowest Yielding 10% Issues	Yield Spread
December 1973	9.43	0.0	9.43
December 1974	8.92	0.0	8.92
July 1975	8.47	0.0	8.47
December 1975	8.68	0.9	8.68
December 1976	6.99	0.0	6.99
March 1976	6.91	0.0	6.91

2. Stress Domestic—Avoid International Exposure

A variety of problems has led investors to adopt the now familiar Buy American theme: the poor performance of foreign economies, the cumulating problems of the oil payments deficits, the sharp fluctuations in foreign currencies and accounting rule FASB #8 that requires quarterly currency translation losses and gains. All of these considerations contributed to the portfolio managers' decision to minimize their exposure to these problems. We believe investors are right in their concerns just as there is considerable logic to the new emphasis on yield. However, many leading multi-national companies have come through the problems of the past few years reasonably well. Moreover, their earnings in 1976 were in many instances particularly adversely affected by currency adjustments. Even if translation losses are as high this year as last, which we believe is unlikely, there would be no further negative earnings impact. What seems more likely to us is that a 30¢ per share translation charge in 1976 might become a 20¢ per share charge in

1977 10¢ boost to the year-to-year earnings comparison. Thus, while we would not single out multi-nationals per se for emphasis, we would not shun those that qualify in terms of recording strong earnings gains.

3. Diversification-Indexation

The trend to diversify portfolios, running parallel to the greater emphasis on current income, has been an important stock market factor for some two years. While we believe the trend is unlikely to reverse and that money will continue to flow to the index funds, the portfolio manager with the courage of his convictions, who is willing to invest with an eye to potential gains rather than self-protection, will find the best opportunities in those companies whose earnings are rising rapidly. We believe that many investors may be confusing portfolio balance and indexation. To us, portfolio balance means a reasonable mix of types of stocks and industries reflecting an assessment of the probabilities and risks, but it should not mean matching the make-up of the market. To hold a market weighting in an industry or group implies an unwillingness to take a stand. It is our impression that most investment portfolios are now more balanced and diversified than at any time in recent years. This should imply opportunities for investors willing to exercise a greater degree of individual judgment. That judgment is best exercised on a case-by-case basis, again with the emphasis on earnings.

4. Underowned versus Overowned

Part of our investment policy for the past year and a half has been to stress those companies less widely researched and owned by major institutions—what we refer to as the companies with the thin files. We continue to feel that a stock that is less widely owned by institutions is more attractive than one with a high level of ownership, all other things being equal. However, here too investors should avoid adopting the strict constructionist's view, avoiding a stock just because it is overowned. In this regard, IBM's recent tender offer did much to dispel the illusion of overownership of that particular issue. While the degree of institutional ownership can be set forth reasonably accurately from the data available, it is important to realize that overownership is also a state of mind. Positions are always too large in the stocks that are going down and too small in those that are strongest. Given IBM's dividend growth prospects and market price, there was no reason for investors to be concerned if they had more than the market weighting in the stock. The company's highly successful unsuccessful tender offer served to make this clear. The overowned theory is becoming overworked and should be given less weight in making investment decisions.

5. Secondary Companies

The popularity of secondary companies has increased along with their performance over the past two years. Only during the third quarter of 1976 did the S&P average outperform the unweighted average last year. This reflects a number of the other investment themes noted above—yields tended to be higher on secondary stocks, their business mix less international, they enabled portfolio managers to diversify and they were generally underowned. We continue to like a number of the secondary companies but do not believe that their emphasis will be the key to investment performance in 1977. Big companies with big earnings gains also should do well.

For those accustomed to viewing the market in terms of broad themes, the message that earnings are once again the driving force may not be readily apparent simply because the stock price gains are likely to be scattered through numerous categories. For example, we believe that the aluminum industry is in a position to double earnings over the next two years. However, we do not expect particularly sharp gains from other basic industries and do not maintain that basics per se are attractive. Similarly, the chemicals as a group continue to present a very mixed picture. However, Allied Chemical, thanks primarily to earnings from the North Sea, could double its earnings between 1976 and 1978. In the energy area SOHIO's earnings could triple and Occidental Petroleum's earnings could double, neither of which appears to be fully reflected in their stock prices, despite good relative performance over the past six months.

All of the growth stocks that appear on our list on the following page are still under the influence of the non-earnings-oriented themes discussed above. In the case of these stocks it is likely that investor recognition of their good earnings prospects will be gradual and could well be delayed. Nevertheless, those investors operating with more lead time should be accumulating the stocks now. The same comments apply to the smaller companies on the list.

IP-77-3

Harold W. Janeway
Director of Investment Policy

Within the last three years, White, Weld & Co. Incorporated co managed public offerings of Pizza Hut and H.J. Wilson. White, Weld & Co. Incorporated makes a market in the shares of Lowe's Cos. General Reinsurance and H.J. Wilson but may discontinue at any time, without notice, maintenance of such market. Officers of White, Weld & Co. Incorporated are directors of Lowe's and Imperial Corp. Information received by them as directors is confidential and cannot be communicated to our personnel or clients.

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RECOMMENDED COMPANIES WITH 40% EARNINGS GAIN, 1976–78

Company	Fiscal Yr.	3/25/77 Price	1972–77 Range	EPS 1976	EPS 1977E	EPS 1978E	% Chg. 1976–78	1978–81 Growth Rate Est.	1977 P/E	Cur. Div.	Yield	Market Capital. (Mil.)
SOHIO		$79	86–30	$3.55	$5.50	$14.10	297%	5	14.4X	$1.36	1.7%	$3,177
Reynolds Metals		40	43–12	3.74	5.25	8-9.00	127	10	7.6	1.20	3.0	736
Alcoa		58	61–26	4.14	6.00	8-9.00	105	10	9.7	1.40	2.4	1,998
Intel		48	78–10	2.37	3.30	4.75	100	25	14.6	–	–	516
MGIC		15	98– 6	1.15	1.80	2.30	100	12	8.3	0.20	1.3	391
Louisiana Pacific		16	24– 7	1.51	2.40	3.00	99	10	6.7	0.20	1.3	423
Allied Chemical		43	54–23	4.07	6.00	8.00	97	12	7.2	1.80	4.2	1,278
Occidental Petroleum		26	27– 7	2.27	3.25	4.35	92	12	8.0	1.00	3.9	1,521
Tektronix	5	59	69–18	3.30	4.55	5.75	74	18	13.0	0.30	0.5	525
Digital Equipment	6	44	61–15	1.98	2.70	3.40	72	25	16.3	–	–	1,633
Lowe's Cos.	7	26	48–12	1.33	1.72	2.20	65	18-20	15.1	0.24	0.9	342
Sony	10	10	18– 4	0.50	0.65	0.80	60	15	15.4	0.06	0.6	2,021
Hewlett-Packard	10	76	121–46	3.23	4.10	5.10	58	18	18.5	0.40	0.5	2,143
Polaroid		33	150–14	2.40	3.00	3.60	50	12+	11.0	0.50	1.5	1,166
duPont		128	204–85	9.30	11.50	13.50	45	13	11.1	5.50	4.3	6,416
McDonalds		42	77–21	2.72	3.30	3.90	43	18	12.7	0.10	0.2	1,828
Crown Zellerbach		40	49–20	3.88	4.55	5.50	42	12	8.8	1.80	4.5	1,016
First Charter		17	29– 1	2.50	3.00	3.50	40	10	5.7	–	–	451
General Reinsurance		157	257–9.5	11.48	14.80	16.00	39	12–14	10.6	1.20	0.8	871
NCR		37	46–14	3.60	4.35	5.00	39	15	8.5	0.80	2.2	971
Imperial Corp.		17	20– 5	2.98	3.50	4.10	38	10	4.9	0.24	1.4	219
Kresge	1	33	51–18	2.15	2.50	2.90	35	15	13.2	0.32	0.9	4,289
Smaller Capitalization												
Pizza Hut	3	21	31– 8	2.50	3.10	3.70	48	15-20	6.8	0.40	1.9	159
Technicare	6	39	50– 4	2.51	5.40	7.50	200	20	7.2	0.40	1.0	112
Wal-Mart	1	14	18– 4	1.12	1.40	1.75	56	18-20	10.0	0.10	0.7	197
Wheelabrator-Frye		26	33– 7	2.21	2.75	3.25	47	13	9.5	0.63	2.4	192
Wilson, H.J.		15	30– 3	1.65	2.10	2.45	48	20	7.1	–	–	37
S&P 500		99	120–63	9.85	11.00	12.00	22	8	9.0	4.40	4.4	–

SRC
MARKET AVERAGES
WALL CHART

DOW-JONES INDUSTRIALS, TRANSPORTATION, UTILITIES, 40 BONDS
NEW YORK STOCK EXCHANGE COMPOSITE INDEX
STANDARD & POOR'S 500-STOCK AVERAGE

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SECURITIES RESEARCH COMPANY
208 NEWBURY STREET, BOSTON, MASS. 02116
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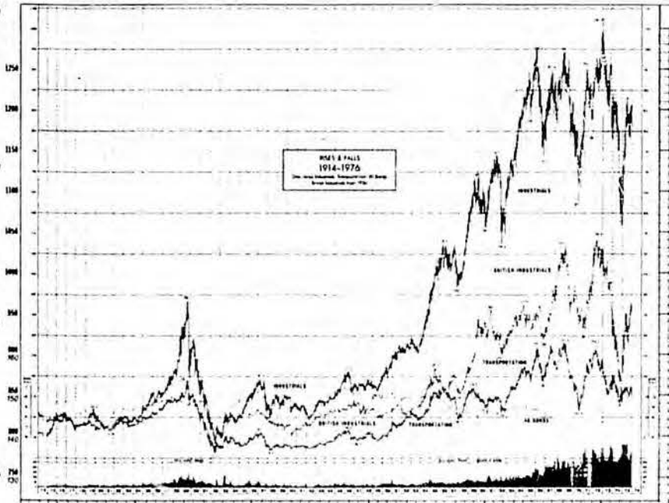


'62 '63 '64 '65 '66 '67 '68 '69 '70 '71 '72 '73 '74 '75 1976

INDUSTRIALS

S&P 500

40 BONDS

45

Corporate Profits Less Inventory Gains

TRANSPORTATION

UTILITIES

32

50

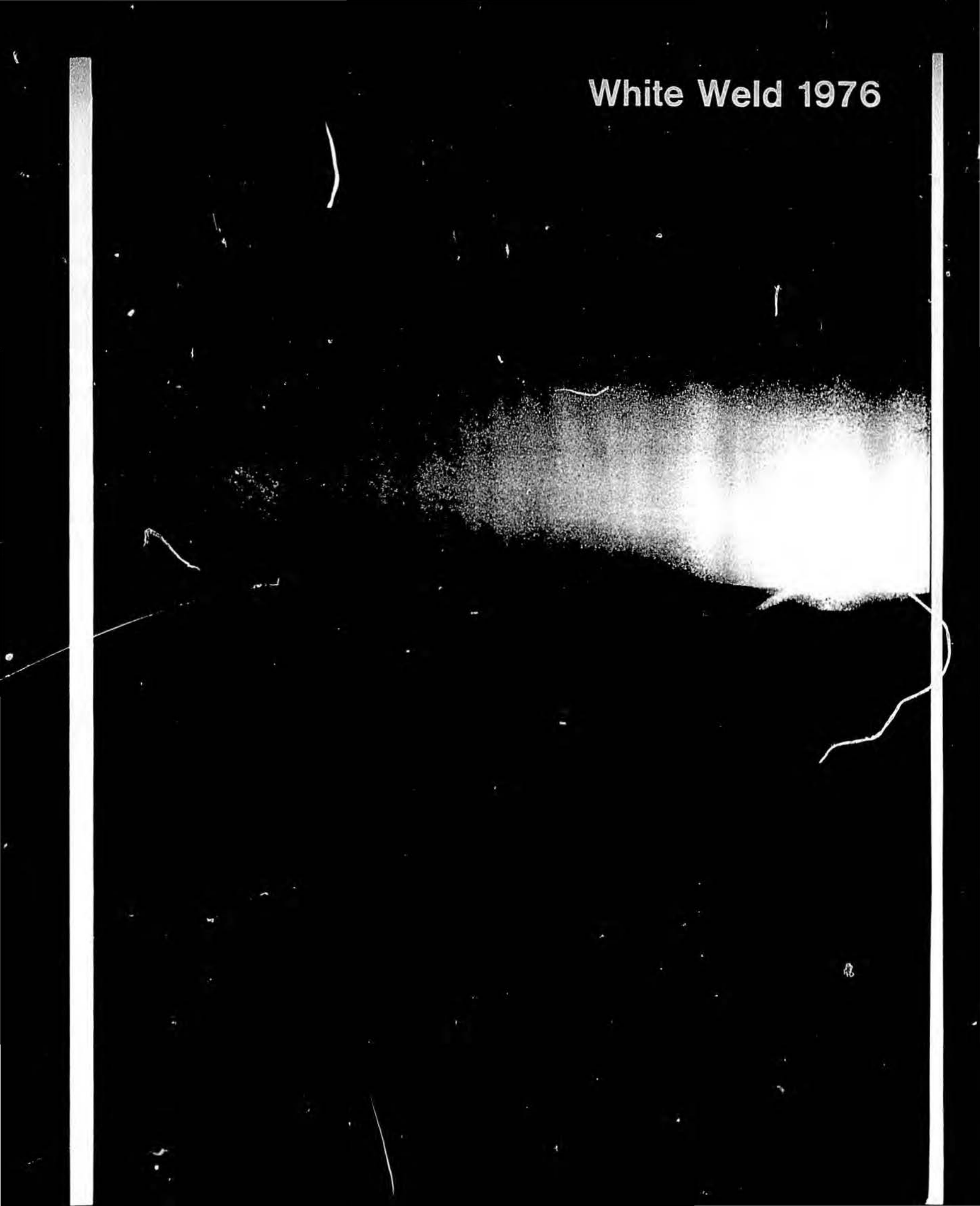
41

81

TOTAL MARKET VOLUME MILLIONS OF SHARES

1956 '57 '58 '59 '60 '61 '62 '63 '64 '65 '66 '67 '68 '69 '70 '71 '72 '73 '74 '75 1976

White Weld 1976

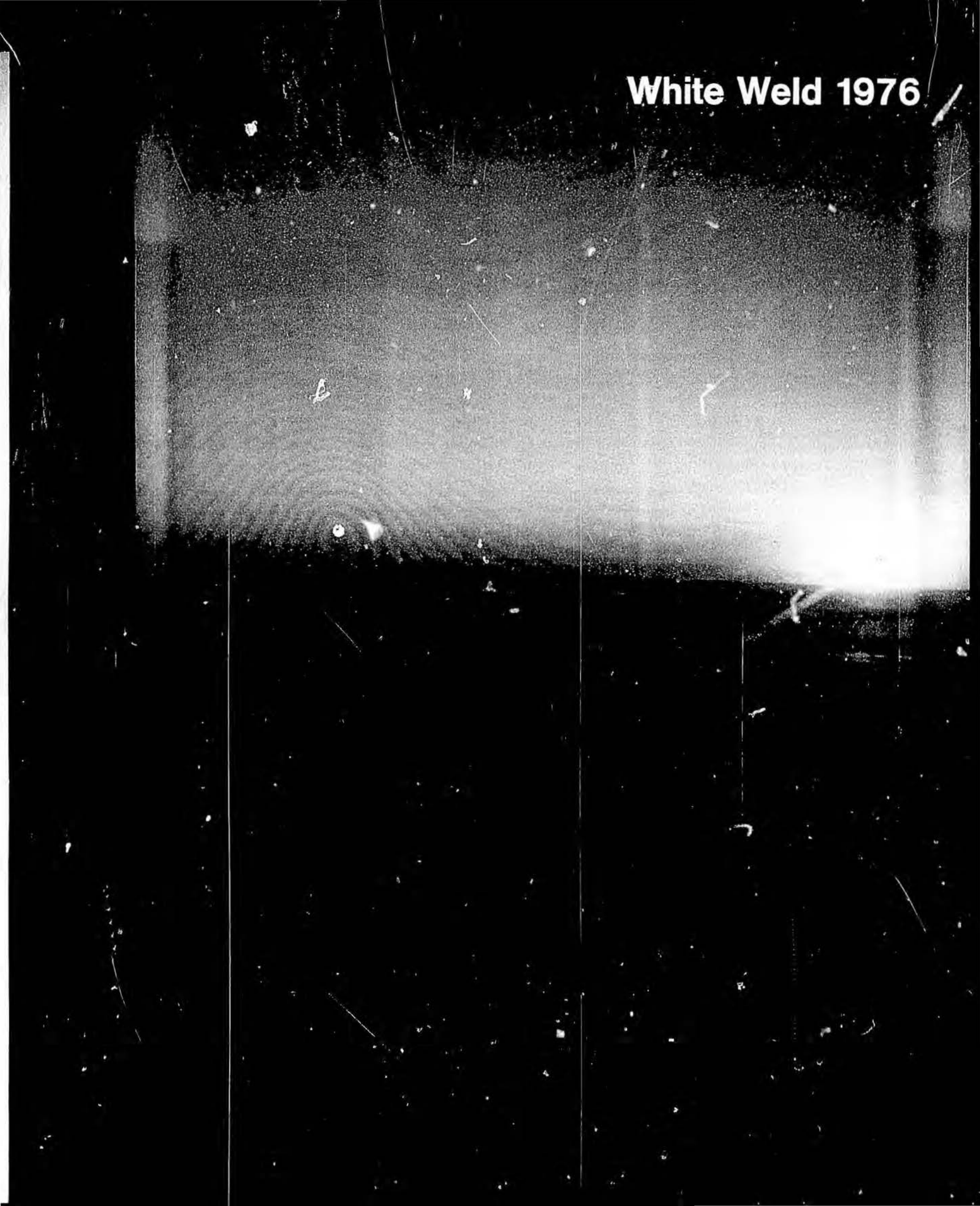


From the windows of White Weld's headquarters in New York City can be seen the panorama shown on the front and back covers of this annual review. At the left are the towers of Wall Street, center of the greatest financial markets place in the world. In the far distance is the Verrazano Bridge with the open Atlantic beyond.

White Weld opens doors to the capital markets of the world. Together with its associated company abroad, White Weld serves the needs of customers through investment banking and financial service units in thirty-eight cities on four continents.

White Weld & Co. Incorporated is a wholly owned subsidiary of White Weld Holdings Inc. It has more than $50 million in stockholders' equity and $70 million on a consolidated basis in total capital funds. It provides a full range of investor services and investment banking facilities for clients in the United States and foreign countries. The firm employs close to two thousand people in thirty-one cities around the globe (shown as circles above).

Société anonyme financière du Crédit Suisse et de White Weld represents the combined international investment banking vehicle of White Weld and Credit Suisse, one of the leading banks in the world. With equity capital in excess of 130 million Swiss francs ($52 million), Financiere offers a full complement of international investment banking services. Its operating units maintain offices in five cities in Europe and Asia (shown as squares above).


White Weld 1976

From the windows of White Weld's headquarters in New York City can be seen the panorama shown on the front and back covers of this annual review. At the left are the towers of Wall Street, center of the greatest financial marketplace in the world. In the far distance is the Verrazano Bridge, with the open Atlantic beyond.

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Highlights

Outlook and Review 3

Access to money markets broadened, and users of capital found opportunities to raise capital at improved rates of interest.

The Teamwork that Raised $1 Billion for the Energy Industry 5

White Weld's corporate finance, public finance, research, and other departments are devoting greater resources to this vitally important sector of the economy.

Trends in Corporate and Public Finance 6

The firm established new records for volume of underwritings and significantly improved its market share.

A Unique Collaboration in International Finance 11

With a strong position in major capital markets, White Weld and its associated company in Europe give flexibility to financial management around the world.

Innovation in the World Marketplace 12

1976 was a record year for the Eurobond market and for White Weld and Credit Suisse White Weld, as they continued to pioneer new techniques in financing.

An Expanding Commitment to Trading 15

White Weld's success in strengthening its role in trading is reflected in a growing share of volume in corporate, U.S. Government, and municipal securities.

Full Service for Institutional Investors 16

White Weld provides institutions with top-quality economic and research analyses together with trading and execution capabilities in a full line of securities.

Special Programs for the Individual Investor 18

The services White Weld provides professional money managers are adapted to the needs of individual investors.

Continuous Supervision of Client Portfolios 19

White Weld offers a balanced approach to portfolio management for individual clients, tax-exempt corporate and union pension funds, and endowment funds.

Support Services for White Weld Clients 21

White Weld is adapting its worldwide communications and securities processing systems as financial markets grow in size and complexity.

Statement of Financial Condition 22

White Weld Directors 25

Management Directory 26

Outlook and Review

Economic uncertainty and political transition dominated the news here and abroad during 1976. In the United States the deceleration of the recovery and the lengthy election campaign seemed to reinforce the cautious attitude with which business executives, consumers, and investors emerged from the recent recession. We view this restraint as a constructive development because we believe that the economic excesses of the sixties and early seventies can best be unwound through gradual recovery. It now seems probable that the pause in 1976 did indeed refresh and that 1977 will see the U.S. economy leading the rest of the free world in a more vigorous phase of growth with more intensive employment of people and plant.

Although stock prices in 1976 failed to follow through on their explosive January-February rise and the bond market did not stage its strongest rally until the year-end, the financial markets on the whole were friendly territory compared to recent years. Our financing clients found opportunities to raise capital at generally improving rates of interest. Our investing clients were able to select from a broad range of securities, both debt and equity, that offered reasonable returns.

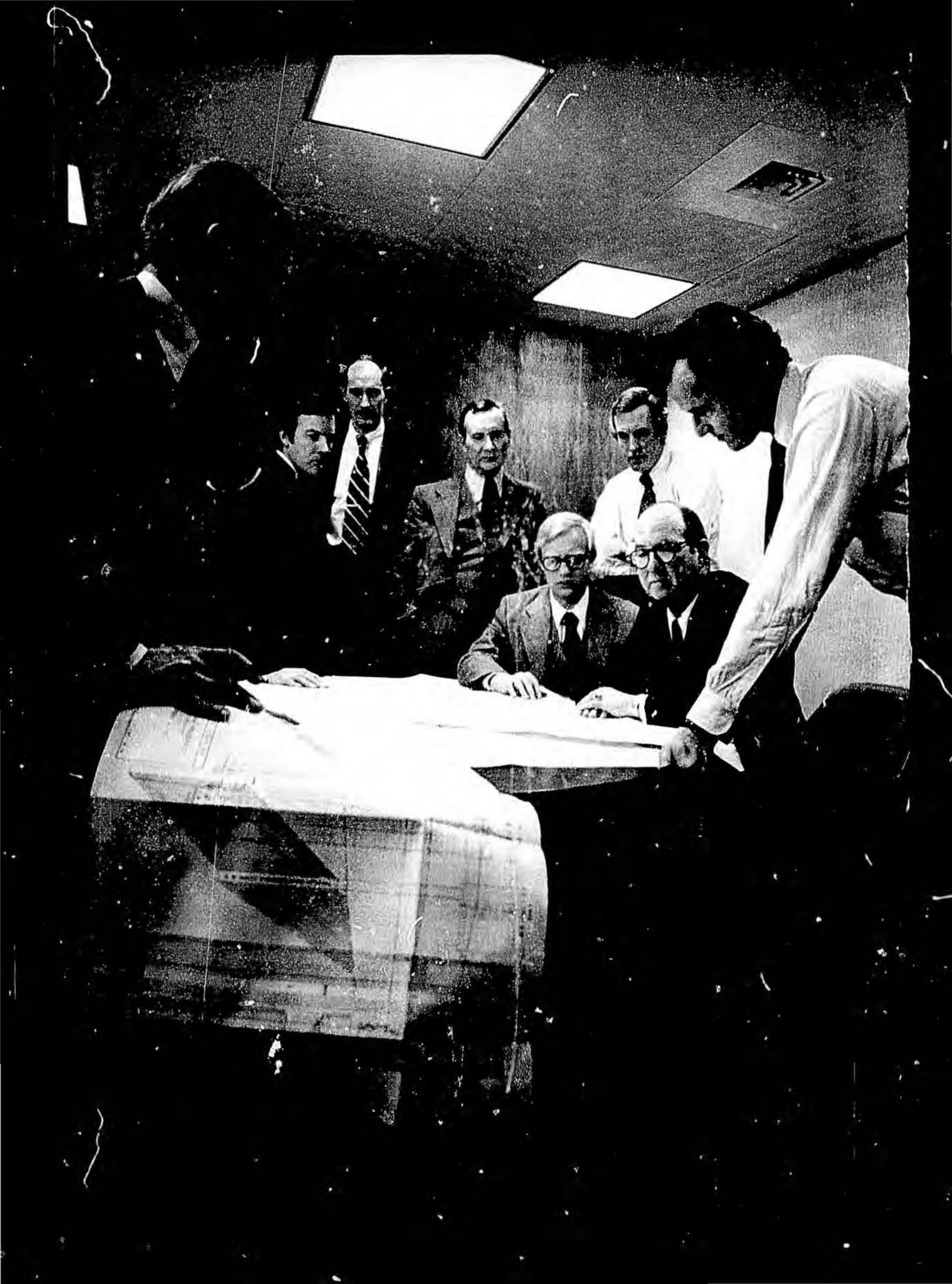
Access to debt capital markets broadened. Companies with credit ratings of Baa and below were able for the first time in several years to sell long-term debt securities through both public underwritings and private placements. Equity markets, although open for financings by major companies whose names were known to investors, were highly selective in accepting new issues of common stock.

For White Weld, revenues and profits reached record levels in 1976. In the prevailing favorable business environment, our firm benefited from its deep involvement in the corporate and public finance sectors and from its broad exposure to the activity of institutional and individual clients in all securities markets. As we continued to expand our capital and professional resources, we gained share of market in all major areas in which we operate.

Our international affiliate, Société anonyme financière du Credit Suisse et de White Weld, also realized sharply higher revenues and net income as financing in international markets expanded and as secondary market operations benefited from declining interest rates and rising bond prices. While most of the major free-world economies face more difficult conditions than our own, we nevertheless expect them to grow more rapidly in the aggregate than in 1976, leading to continued active financial markets abroad.

The keynote of the recovery cycle that began in 1975 has been moderation and caution. History tells us that speculative excesses do recur, but as yet we see little evidence that such pressures are building. On the contrary, we detect a widespread desire for fiscally responsible conduct on the part of individuals, businesses, and governments. Although the new Administration faces a delicate task in keeping the recovery on track and proceeding at a moderate pace, we believe 1977 will be a good year for both our financing and investing clients.

enior officers of White Weld, reading
ounterclockwise from lower left, are
aul Hallingby, Jr., chairman; Frederick
. Wonham, president; Charles C.
llinghast, Jr., Charles C. Lee, Jr., and
enry W. Meers, vice chairmen.
r. Tillinghast, former chairman of
ans World Airlines, joined White Weld
January 1977.



The Teamwork that Raised $1 Billion for the Energy Industry

The critical shortage of natural gas and the heavy dependence of the United States on imported oil, although long foreseen by us and other observers, have surfaced as issues of overriding national concern. Intelligent government policies on energy are absolutely essential at this time to enable companies supplying the energy requirements of the United States to raise the vast sums of capital they will need. In order to provide fully its creative assistance in all phases of financial planning, White Weld during the past five years has more than doubled its complement of investment banking and research specialists concentrating in the oil, gas, coal, and related industries.

Senior members of White Weld's corporate finance department specializing in natural resources are shown on the opposite page. From left to right they are Stephen W. Houghton, Wallace L. Bennett, Anthony V. Leness, Robert L. Huston, Theodore D. Sands, Jeremiah K. Ross, Robert K. Green, and Alexander M. White.

In 1976, White Weld raised over $1 billion for the energy sector of the national economy through the development and management of public bond and equity issues, through private placements, and through such other financial techniques as leveraged leasing. This total placed White Weld among the top-ranking investment banking firms in volume of financing for the oil and gas industries.

White Weld's strong position in the energy field developed in the years following World War II, when the firm pioneered new financing techniques for the burgeoning gas-pipeline business. We helped supply the seed money, financial know-how, and organizational skill to spread a pipeline network throughout the United States and Canada. This activity led to the financing of other hydrocarbon and related industries.

Among White Weld's clients whose principal activity is gas transmission are The El Paso Company, Transco Companies, and United Energy Resources. In the gas distribution field we have acted as investment bankers for Brooklyn Union Gas Co., Entex, and Southern Union Gas Co. Among clients engaged primarily in oil and gas exploration and production are Helmerich & Payne, Pennzoil Company, Pennzoil Offshore Gas Operators, and Pennzoil Louisiana & Texas Offshore. Companies with diversified interests in energy and other industries include Houston Natural Gas Corp., MAPCO Inc., and Tenneco Inc.

Recently the firm has moved to explore the potential of the coal industry, which we expect to emerge as a central element in the nation's energy policy. We have been working with a number of clients interested in this industry, utilizing our own skills and those of John Corcoran, former chairman of Consolidation Coal Company, with whom White Weld maintains a continuing relationship as an advisor.

To respond successfully to the complex needs of energy companies today requires expertise in many specialized aspects of finance. White Weld is able to furnish its energy clients with such expertise drawn from other sections of its investment banking team. A notable instance is provided by ship-construction financing under Title XI of the Merchant Marine Act. Financing under Title XI places the full faith and credit of the federal government behind guarantees of debt issued to finance new vessel construction. White Weld's clients have utilized such financing for liquefied natural gas carriers, a semisubmersible drilling rig, and supply boats that service the offshore oil and gas industry.

Most of the companies operating in the natural resources area are regulated by agencies of the federal government. White Weld has a long history of assisting its clients by supplying expert financial witnesses at regulatory hearings. Recently we have been particularly active in this regard, testifying to the financial feasibility of multibillion-dollar energy projects involving importation of natural gas from Algeria and Alaska.

We have for many years expressed our view in hearings before the federal regulatory agencies and in other forums that unrealistic and arbitrary controls maintaining wellhead prices of gas far below their intrinsic value as compared with other fuels could only result in extreme waste and ultimately a serious shortage of this valuable commodity. Recent partial decontrol has been a step in the right direction. While complete decontrol will not restore the vast amounts of natural gas which have been used for inferior purposes for so many years, a further freeing of market prices is now essential to encourage more exploration for natural gas as well as the additional use of all feasible sources of supplemental and synthetic gas.

We believe research competence is essential to our activities in the energy sector. A well-informed sales force supported by a strong research effort is in the best position to market our clients' securities. White Weld has strengthened and broadened its energy research capability, paralleling its increased commitment of investment banking resources to the area. Pictured at right are A. Hager Bryant, John L. Kalmbach, and Philip L. Dodge, three of the six analysts who concentrate on coverage of the energy area.

Trends in Corporate and Public Finance

White Weld's overall investment banking activities in both the private and public sectors were at new high levels in 1976. White Weld managed or co-managed approximately $5.6 billion of publicly offered corporate securities in 110 separate issues in the United States, exceeding the firm's previous record year by more than $1 billion. The firm, acting as agent, helped thirty clients raise $836 million in the private placement market, more than double the amount raised in the previous year. As a manager or major underwriter, the firm's municipal finance specialists in 1976 purchased 532 issues having a total dollar value of $15.0 billion.

For the same period, Credit Suisse White Weld Limited, the investment banking arm of our associated company in Europe, managed or co-managed $5.9 billion of underwritings, $4.0 billion above the 1975 level, and ranked first in Eurobond underwritings. Its activities are described in detail later in this report.

A principal factor bringing about the high financing levels was the improving debt market as 1976 progressed. In January, Moody's Aaa Bond Ratings indicated an 8.88 percent yield; in December the rate was 8.05 percent. Straight debt issues accounted for more than 70 percent of White Weld's managed corporate business, and most of this financing was done for utilities and larger industrial companies, although the market did broaden, as compared to recent years, to admit lower-rated credits.

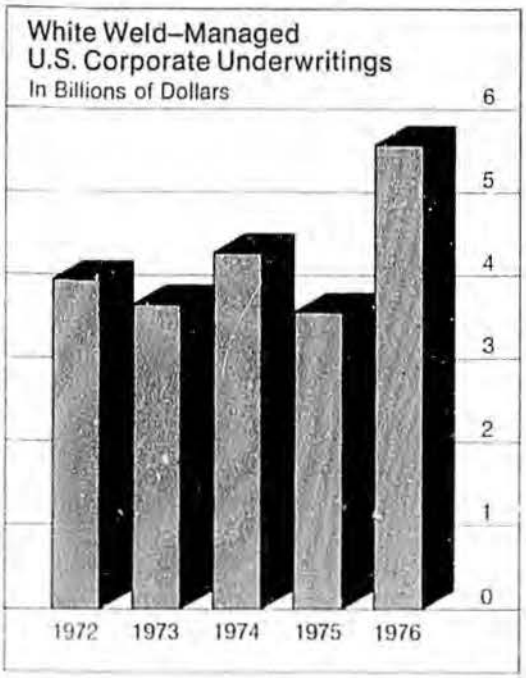
The volume of preferred stock and common equity financing was substantial, but the bulk of these issues was for utilities and major industrial corporations. Small to medium-sized companies faced a situation in 1976 similar to that of 1975, with an uncertain response for offerings of their common stocks in the public market. The success ratio for those companies selling their shares for the first time was indeed low.

The breadth of the private placement sector of the market also continued to improve throughout the year. The availability of funds for companies enjoying ratings for their debt below the high-investment-grade categories improved materially over the previous two years. Rates also declined throughout the year. At the beginning of 1976, a typical industrial company whose debt carried a Baa rating might have paid a rate of 9.25 percent on its fifteen-year senior notes sold to insurance companies. By the end of the year, a rate of around 8.70 percent was more normal.

The municipal sector of the bond market benefited by the retreat of New York City and State from the brink of disaster and off of the front pages of newspapers across the country. Market stability was also enhanced by the return of buying interest from fire and casualty insurance companies, whose profits rebounded sharply during the year. The Bond Buyer's 20-Municipal Bond Index started the year at 7.29 percent and ended at 5.83 percent, an unusually large change for a one-year period.

Industrial and Financial

In addition to the financings for natural gas and oil companies, White Weld managed major offerings in 1976 for such diverse clients as American Cyanamid Co., Baxter Laboratories,



Commercial Credit Co., Copperweld Corporation, Eltra Corporation, Greyhound Leasing & Financial Corp., Honeywell Finance, Liggett & Myers Incorporated, Miles Laboratories, Reliance Insurance Co., and Time Inc.

The companies for whom we completed private financings included Arvin Industries, W. R. Grace & Co , Honeywell Finance, Lincoln Pulp & Paper, Marley Co., Powers Regulator Co., and West Point–Pepperell. In the leasing area, the firm assisted UMC Industries by arranging a leveraged lease of equipment to Southland Corp.

Merger often can function as an alternative to a company financing or to a secondary offering of stock for principal shareholders seeking liquidity. White Weld believes that its expertise in the merger and acquisition field is one of the key capabilities which it has to offer its clients. This phase of our business is expanding rapidly.

White Weld took an active role in 1976 in a number of merger, acquisition, and divestiture transactions. Among the clients for whom the firm acted were Arwood Corp., The Coca-Cola Company, Deseret Pharmaceutical Co., Di Giorgio Corp., Imperial Corp. of America, Walter Kidde & Co., Masonellan International, Otis Elevator Co., Peoples Drug Stores, and Quaker Oats Co.

Because pollution control and general industrial revenue bonds on a tax-exempt basis have come to offer increasingly important means of raising capital for many different industries today, White Weld has made a specialty of these forms of financing. Working as a team, the firm's public finance and corporate finance experts completed a number of pollution-control and general industrial bond offerings for such clients as American Cyanamid Co., De Kalb AGresearch, Keystone Consolidated Industries, Madison Gas & Electric Co., Nevada Power Co., and Waste Management.

Special assistance in financing pollution-control equipment is now available to small business. In 1976, Congress enacted legislation to permit small businesses to take advantage of tax-exempt financing in constructing pollution-control projects through 100 percent debt guarantees by the Small Business Administration, which will make these securities readily marketable. White Weld played a key role in developing this legislation and was then selected by the SBA to work out a pilot program in California in collaboration with the Bank of America.

The managements of many corporate enterprises and governmental agencies call upon White Weld to provide its expertise on complex financial questions. Consulting assignments for American Can Co., Exxon Corporation, International Telephone and Telegraph Corp., and United States Steel Corp. were among those completed last year.

Utilities

As the rate of inflation subsided and interest rates declined, markets for the debt and equity securities of utilities improved over the situation of the past few years, when these companies had difficulty financing urgently needed expansion. White Weld improved substantially its ranking as a managing underwriter of negotiated issues and those offered competitively.

White Weld was a co-manager for the $450-million Southern Bell Telephone & Telegraph Co. debenture offering, the largest single issue to date by a Bell System subsidiary. Among other major utility financings co-managed by the firm in 1976 were a $30-million issue of first-mortgage bonds by Washington Water Power Co. and a $75-million issue of preferred stock by Florida Power & Light Co.

White Weld's ability to serve its domestic utility clients is enhanced by the versatility in financing that it achieves through its international affiliations. In 1976, White Weld's associated company in Europe arranged lines of short-term credit for several U.S. utility companies on the London market, thus increasing the funds available to these companies and bringing them to the attention of the international capital markets.

Transportation

White Weld is developing significant capabilities in financing the transportation sector of the economy. We are expanding the investment banking services we provide to all elements of this highly capital-intensive field—shipping, airlines, trucking, and railroads. The addition to our senior management of Charles C. Tillinghast, Jr., TWA's former chairman, is an important enhancement of our staff in this regard. Paul E. Tierney, Jr., who was formerly director of finance with the U.S. Railway Association, specializes in the transportation sector. He is shown at left with Elisabeth N. Spector of the corporate finance department.

National policy inclines increasingly toward government assistance in various sectors of transportation, giving access to new sources of capital for corporate enterprise in the transportation industry. White Weld's expertise in Title XI ship financing has been mentioned. Acting as financial advisor, White Weld played an important part in bringing into being the government's unique $2.1-billion investment in the securities of the Consolidated Rail Corporation (CONRAIL) in 1976. To develop the further opportunities we see arising in the railroad industry, we formed a syndicate to compete for railroad-equipment trust certificates. For the past twenty years there have been just two banking syndicates serving this very large market.

White Weld was advisor last year to Walter Kidde & Co. in its planned divestiture of the United States Lines, a major U.S. flag carrier, to WUI Inc. The firm believes that a period lies ahead in which divestiture and acquisition will constitute major means of mobilizing capital in the shipping industry. Similar possibilities are developing in trucking.

Public Finance

As the municipal market moved toward its record volume of $33.8 billion in new underwritings last year, White Weld negotiated a number of important financings. Among other issues, it was senior manager for Platte River Power Authority, Colorado ($60 million), Metropolitan Atlanta Rapid Transit Authority ($50 million), Tennessee State School Bond Authority ($60 million), and Port of Tacoma ($38 million), and co-manager for South Carolina Public Service Authority ($100 million). The creative approach that has distinguished White Weld's activities in energy, utilities, transportation, and other sectors also characterizes its efforts in public finance.

White Weld has a record of innovation in the field of mass transportation. It was instrumental in developing the legislation that made possible financing of the first regional consolidation of mass transportation, undertaken by the Massachusetts Bay Transportation Authority. The firm acted as advisor to the $1.5-billion system for the Metropolitan Atlanta Rapid Transit Authority prior to negotiating the first $50-million financing and is participating in an advisory capacity to the Chicago Regional Transit Authority.

White Weld has been the pioneer in financing facilities for converting municipal solid waste into energy and recoverable resources. Our approach blends public sector tax-exempt financing with the tax benefits of private ownership, offering to communities the lowest net cost of financing for these highly capital-intensive systems. White Weld has put together a solid waste project team consisting of municipal and corporate finance officers, who have been actively developing this new and important market. As a result we have been retained as financial advisor for projects throughout the United States, including state governments (Hawaii, California, and Wisconsin) and several major cities and municipalities.

The firm is currently under contract with the Environmental Protection Agency to provide technical assistance to state and local governments in implementing federal resource recovery policy.

There is increasing overlap between the private and public sectors of the economy as a result of evolving national policy in transportation, pollution control, energy, and other similar areas. White Weld's corporate and public finance experts worked closely together to develop the financing concepts not only for waste recovery but also for SBA pollution-equipment bonds for small businesses, mentioned earlier. The teamwork approach has increased the firm's value as an advisor to the managements of both corporate enterprise and governmental agencies. White Weld's corporate and public finance departments, for example, are teamed as advisors to the Alaska State Investment Advisory Committee in connection with the Alaska Permanent Fund.

A Unique Collaboration in International Finance

White Weld's important role in international finance has been established over five decades of active and innovative participation in investment banking, brokerage, and market making. Within the last seven years, the firm has joined with Credit Suisse, a leading bank in Switzerland, in creating a flexible, talented organization to provide financial services for corporations, governments, and institutions dealing in international money markets.

The two organizations share in the ownership of Société anonyme financière du Credit Suisse et de White Weld (Financière), which is headquartered in Europe and which engages through subsidiary units in investment banking, trading, asset management, and certain specialized commercial banking activities.

Financière's operations extend across Europe, the Middle East, and the Far East. White Weld's international investment banking group, located in New York, covers the United States, Canada, and Latin America and also provides customers in all parts of the globe with entrée to the U.S. capital markets. In addition, through its brokerage and trading offices in London, Paris, Geneva, Zurich, Montreal, Hong Kong, and Caracas, White Weld provides our investor clients around the world with research, trading, and execution services in all types of securities traded in the U.S. markets. Together the two companies make available to our clients a highly effective partnership of talents.

Financière has several important operating units. The largest of these is **Credit Suisse White Weld Limited (CSWW),** which is located in London. CSWW is the leading underwriter in the Eurobond market and an active participant in all forms of cross-border financial transactions, including mergers and acquisitions. It is a leader in handling a wide spectrum of mainly dollar-denominated money market instruments and has become the foremost market maker in London dollar certificates of deposit and medium-term tranche issues of CDs. It also leads in the floating of issues for banks in the international money market. CSWW is active in the management of international fixed-income investment portfolios. The trading arm of Financière, **White Weld Securities,** is one of the principal dealers in the secondary market for Eurodollar bonds and is also located in London.

Banque Française de Dépôts et de Titres (BFDT) handles commercial banking activities for both individual and institutional clients and conducts extensive money market operations in all types of instruments. Through active participation in Eurobond issues, BFDT contributes significantly to the combined placement power of the group. The bank also provides merger and acquisition services and has played a role in a number of important acquisitions of French companies by transnational enterprises. BFDT is active in arranging listings for issues of foreign companies on the Bourse in Paris. One of the bank's operations under the name **Forinvest** conducts research in French securities and provides financial consulting services for industrial clients in France and abroad.

Clariden Bank specializes in multinational investment management for a select group of investors spread around the globe. A growing part of its clients' funds is managed on a discretionary basis, and its investments are diversified among the principal capital markets—the North American, European, and Far Eastern stock exchanges and the Eurodollar and Eurobond markets. Clariden Bank maintains close contact with affiliated entities of Financière as well as with independent advisors in framing its worldwide investment strategy. In addition to this traditional activity, the bank has become more extensively involved in the Swiss capital markets and has initiated and successfully placed a growing volume of Swiss-franc-denominated, fixed-interest securities in both public offerings and private placements. The bank provides excellent contact with market trends in the growing Swiss capital markets.

The international investment banking group at White Weld in New York works closely with these affiliated companies overseas to achieve the best execution of our customers' diverse financial transactions. Through its offices overseas and in New York, White Weld distributes an important share of the Eurodollar issues originated by CSWW.

Innovation in the World Marketplace

As in the United States, the general recovery of the European economy from the trough of the recession stimulated activity in financial markets by governments and international companies on both sides of the Atlantic and in the Far East. The investment banking departments of both White Weld and CSWW arranged record numbers of financings and cross-border merger transactions for their clients during the year.

The Eurobond market reached new levels. Total volume for 1976 was $12.0 billion in 274 issues as compared with about $7.0 billion the previous year. CSWW ranked first in this market, managing or co-managing 107 issues valued at $5.9 billion, almost 50 percent of the total amount raised. Of Eurobond financings, 66 percent were denominated in dollars, 17 percent in Deutsche marks, and the balance in other currencies or combinations thereof.

White Weld and CSWW are well known for their founding role in the Eurobond market. They have pioneered a substantial majority of the innovations introduced into this market, helping make it one of the most important sources of capital in the world. CSWW, in addition to its important role in internationally syndicated bond offerings, is a leading factor in the management and co-management of floating-rate note issues by major international banks. It also participated in the creation of the London dollar CD market, which has grown to outstandings of $14 billion.

Financings by CSWW

CSWW is playing a lead role in developing financing for a major project undertaken by Norpipe to exploit the oil in the Ekofisk field in the North Sea. Norpipe is owned 50 percent by the Norwegian government oil company, Statoil, and 50 percent by the Phillips group of private companies. In connection with this project, CSWW was the lead manager on a $50-million Eurobond issue. An unusual feature of this offering was its use as security of the throughput agreements made by the participants.

As mentioned earlier, several U.S. utility companies were introduced to the international capital markets in financings in which CSWW participated. Included among these were revolving loans with European banks for Puget Sound Power & Light Co. ($25 million), Portland General Electric Co. ($40 million), and Cleveland Electric Illuminating Co. ($30 million).

CSWW also managed a number of financings for non-European borrowers in industry, banking, and other fields. Among some of these were debt issues for Australia, the European Economic Community, the provinces of New Brunswick and Saskatchewan, the Royal Bank of Canada, Fiat do Brasil, and Alusuisse International. Other private placements of debt securities were arranged successfully with Middle East lenders.

International Mergers and Acquisitions

White Weld and CSWW cooperate in assisting clients in North America, Europe, and elsewhere to make advantageous mergers and acquisitions. White Weld has completed a larger number of acquisitions of U.S. businesses on behalf of foreign acquirers than any other investment bank. As an example, White Weld negotiated the purchase of Disston by Sandvik Aktiebolag, enlarging the Swedish firm's U.S. presence and expanding its finished steel products business.

White Weld also assisted in the acquisition of two other U.S. companies by European interests. Midwestern United Life Insurance Co. was acquired by Nationale-Nederlanden, a Dutch insurance company. The Marx Toy division of Quaker Oats Co. was sold to Dunbee-Combex-Marx, a British manufacturer of toys, toiletries, and home improvement items.

Financings in the U.S. Market

During 1976, White Weld was co-manager of the largest public financing on behalf of a foreign borrower that has been made in the United States—a $367-million bond issue for National Power Corporation, a Philippine government entity, to finance a major nuclear power facility in Luzon. A unique feature of the financing was its guarantee by the Export-Import Bank of the United States, the first time that the bank has guaranteed a public issue underwritten by private investment bankers.

One of the major financings for non-U.S. borrowers, managed in the United States by White Weld, was a $100-million note for Banque Française du Commerce Extérieur (BFCE), the French equivalent of the Ex-Im Bank. A major borrower in the European and U.S. capital markets, BFCE also selected CSWW to co-manage two note issues in Europe in 1976 totaling $100 million.

An Expanding Commitment to Trading

White Weld has exp. nded dramatically its presence in the major segments of the global financial markets in which it operates—corporate fixed-income securities, tax-exempt securities, U.S. Government and federal agency securities, Eurodollar bonds, certificates of deposit and other money market instruments, and listed and unlisted equity securities. We have added experienced staff in all trading departments and have steadily increased our commitment of capital for positioning. The firm's securities inventories are managed by our traders based on their assessment of the markets and our clients' needs. On average, trading positions have doubled over the last twelve months and quadrupled over the last two years. U.S. Government and agency securities account for the largest segment of typical total positions, but all trading activities have been enlarged substantially.

White Weld participated fully in the heavy volume of trading that was transacted during 1976 and increased its market penetration in all major sectors.

Principal transactions for clients in corporate fixed-income securities increased 32 percent over the previous year, and such transactions in tax-exempt securities increased 36 percent. Activity in government and federal agency securities increased so substantially that comparisons with previous years are not appropriate.

Foreign-dollar bond and Eurodollar convertible bond trading, long a major strength of White Weld, was also extremely active.

The volume of principal transactions effected for clients in over-the-counter equity securities increased 60 percent over the previous year, with the firm almost doubling its share of trading volume in the approximately eighty stocks in which it makes a market. Principal transactions in listed securities also increased, as did the firm's total share of market in listed securities.

In all, principal transactions effected for clients in the secondary markets last year averaged over $250 million per day.

We have in place and continue to upgrade the capabilities of a worldwide high-speed communications system that transmits market and trade data to our offices and links them with securities exchanges and the trading desks of many of our large customers.

The photograph on the opposite page, taken in the trading room at White Weld's headquarters, shows one of the posts that handles U.S. Government and federal agency securities. Although trading in government securities is not a new function for White Weld, the firm in recent years has succeeded in becoming an important factor in this market and in 1976 was added by the Federal Reserve to its list of primary reporting dealers.

White Weld's enlarged commitment to trading is responsive to the importance that both issuing and investing clients place on ability to distribute new issues and to execute transactions at lowest net cost.

Full Service for Institutional Investors

Sophistication and diversity mark White Weld's institutional clientele today. The men and women who are primarily concerned with servicing this market in our sales, trading, and research departments deliver execution services and investment recommendations of superior quality. In virtually all trading departments, we have enlarged staff and capital to accommodate our customers' expanding needs. We utilize specialized sales forces for equities, corporate fixed-income securities, municipal securities, and U.S. Government and agencies in order to meet the needs of specific classes of institutions or investment functions within larger diversified organizations. These sales, trading, and research professionals are in daily contact with their counterparts at client institutions here and abroad.

Corporate Fixed-Income Securities
In 1976, White Weld's corporate fixed-income department expanded both its personnel and capital resources to keep pace with the record activity of customers dealing in corporate bonds and preferred stocks. A staff of bond trading and sales specialists numbering more than fifty provides institutional customers, who are increasingly oriented toward active management of their bond portfolios, with investment ideas and interpretations of market trends. As a major underwriter, we offer our clients opportunities to invest in most new issues. During the year we placed $1 billion of new corporate debt and preferred stock issues, substantially more than the total of our underwriting positions.

U.S. Government and Federal Agency Securities
The continued buildup of market making in U.S. Government and federal agency securities has made this a major trading activity. As a primary reporting dealer to the Federal Reserve, the firm engages in direct transactions with the New York Federal Reserve Bank, which conducts the Fed's open-market operations. In addition to the direct benefits of dealing with the most important customer in the market, White Weld's capacity to make markets over the entire maturity range of government and federal agency securities is enhanced.

Tax-exempt Securities
White Weld maintains active trading markets in tax-free bonds on a nationwide basis. In addition to the substantial underwriting and trading activity conducted by our New York office, eleven of our larger regional branch offices are staffed with municipal specialists who underwrite and make secondary markets in local issues. These men and women offer institutional and individual clients a coverage of regional markets that is as comprehensive as any in our industry.

International Bonds and Arbitrage

White Weld has long been one of the principal market makers for foreign securities denominated in dollars. The firm trades in foreign bonds, coordinating with European markets by direct private wire. We also take positions in foreign securities for our own account to take advantage of price differentials between markets or between related securities of the same issue.

Equity Securities

A highly trained sales force specializing in equity securities covers major institutions. In addition, those actively involved in servicing these accounts include traders in listed and over-the-counter stocks and options, exchange-floor personnel, and specialists providing company and industry analyses, investment policy and economic forecasts. Taken together, White Weld's professional staff servicing the equity needs of institutional clients numbers more than one hundred. Despite the continuing erosion of the institutional commission structure, White Weld's institutional commission revenues increased significantly during the year, as more clients concentrated their business on a smaller number of firms capable of providing them with the full spectrum of equity services.

Our staff of research analysts provides in-depth coverage on more than 375 individual companies and 30 industry groups, representing 80 percent of the stocks included in Standard & Poor's Composite Index of 500 Stocks. In the allied areas of investment policy, economics, and market and technical analysis, which are of particular concern to portfolio managers, White Weld has significantly expanded its capabilities and now has one of the largest professional staffs of its kind in our industry.

White Weld's equity trading network spans all twenty-six domestic and seven international offices. Virtually all major accounts are serviced directly from our own trading desks.

Economic Services

Financial institutions have looked increasingly to White Weld for in-depth analyses of economic trends. In 1976, White Weld Economic Services was established to provide a highly specialized series of commentaries on the economy and certain industries to industrial corporations. Dr. A. Gary Shilling, senior vice president and director of this new activity, is shown at left with his staff.

Special Programs for the Individual Investor

Through an experienced staff of account executives located in twenty-six domestic and seven foreign branches, White Weld offers sophisticated financial services to knowledgeable individual investors. The same broad array of financial products available to institutions is tailored to the needs of our individual clients.

Investment policy and research information is relayed to all account executives in daily conference calls and in written material, prepared and organized for timely transmittal to customers. The trading facilities described earlier are likewise available to execute transactions in common stocks and other securities. Our individual clients thus benefit from the market expertise of a trading staff that regularly fulfills the exacting standards required by professional investors.

In the last several years, individual clients have increasingly taken advantage of investment alternatives to common stocks. White Weld underwrites and makes markets in a multitude of utility, industrial, and finance company bonds and notes. We also offer our clients a broad range of tax-exempt investment opportunities including revenue bonds, general obligation bonds, pollution-control and other industrial revenue bonds, and municipal unit trusts. For investors interested in employing capital for the short term, we offer access to all short-term money market investments, including tax-exempt project notes.

Special Services

Directly related to White Weld's block-trading capability is its expertise in handling and executing securities sales that are restricted under Securities and Exchange Commission regulations. Such holdings often result from the sale of a private company to a public company. These transactions are therefore of special value to corporate officers and directors as well as to other large holders of listed and unlisted securities. Our legal and trading staff work together to provide the best execution permitted by the market and to ensure compliance with the technical provisions of the law.

For the investor interested in tax-sheltered investments, White Weld is active in offering equity participations in a variety of programs, principally in real estate and oil and gas. These investments are screened by staff specializing in the real estate and oil and gas industries and are selected on the basis of their intrinsic economic worth as well as on their tax aspects.

Listed options trading is an integral part of White Weld's overall trading and brokerage activity and an area of special interest to many of our individual clients. We offer access to listed options trading on all exchanges and the assistance of specially developed computer programs in tracking the changing relationships between options and their related common stocks.

Investment Advice

The cornerstone of White Weld's individual client service is the importance we place on matching the firm's overall investment policy to the particular and diverse needs of each client. The critical link between customers and our investment policy and research specialists is the account executive.

White Weld's *Money Manager Service,* introduced in 1976, provides continually updated material on the subjects relevant to investors. Richard A. Kimball, vice chairman of the institutional policy committee and director of marketing, is seen at left with a copy of the publication. This is the written portion of White Weld's overall service for money managers.

Money Manager Service contains, often in summary form, copies of most of White Weld's written investment policy statements, economic forecasts, research reports on industries and companies, selected stock lists, technical market information, and other essential data. James C. Blair and Brenda L. Landry, pictured on the opposite page, are among the senior analysts on the White Weld research staff who develop this information. *Money Manager Service,* brought up to date weekly, has been received enthusiastically by the professional money management clients of White Weld for whom it is designed. The service is also provided to all White Weld account executives for their use in counseling their individual clients.

Coordinated with *Money Manager Service* are conference calls each weekday morning that keep our account executives in continuous touch with markets and changing circumstances. In addition, each fixed-income department—corporate, U.S. Government, and municipal—includes specialists whose responsibility it is to interpret developments in their areas and to coordinate the execution of transactions for the benefit of individual clients.

Continuous Supervision of Client Portfolios

For the past twenty-eight years, White Weld has been engaged continuously in offering investment counsel to individual clients and to tax-exempt corporate and union pension funds and to endowment funds. Our objective is to achieve favorable performance consistent with the specific investment goals of each account.

It is our experience that a carefully conceived and clearly defined investment philosophy, applied with consistency and decisiveness, will provide superior investment results over any market cycle. We are most conscious of the risk-reward ratio in the investment selection process and regard conservation of capital as one of our prime investment objectives. Our investment approach utilizes equities, bonds, and short-term reserves, depending on the relative appeal of each through the economic cycle. Cash and fixed-income management are integral parts of our service. Careful supervision of each investor's portfolio by an experienced and well-informed manager provides protection against unnecessary losses that might result from oversight or lack of information.

Today, assets under management by White Weld exceed $600 million, the highest total in our history. Our investment management staff under the direction of Edward D. Little, shown at lower left, includes sixteen senior portfolio managers. These professionals work closely with our research, economic, and investment policy groups to develop and execute appropriate investment strategies for each client.

Support Services for White Weld Clients

White Weld's operations and administrative personnel are dedicated to providing prompt and efficient service to the firm's clients. The operations group is responsible for processing of customers' orders, control of securities transfers, record keeping, and other support functions required for the administration of customer accounts. Customer services include securities safekeeping, the collection and payment of interest and dividends, the mailing of proxy materials and company reports, and the preparation of monthly statements of account.

White Weld's operations staff works in an environment characterized by change as a result of sharp fluctuations from month to month in the processing work load and, over the longer term, of new developments in the industry's clearance and settlement procedures.

Because of the growing complexity of the securities markets, White Weld places a high priority on maintaining substantial reserve processing capacity to accommodate peak trading volume. It is continually upgrading its data processing systems to improve service. Of particular importance is the development of data retrieval programs to give account executives, traders, and operations personnel immediate access to information they need in order to respond quickly to clients.

Financial Condition

At December 31, 1976, White Weld Holdings, Inc., had over $50 million in stockholders' equity and, on a consolidated basis, over $70 million in total capital, including borrowed funds. The company's principal asset is its wholly owned subsidiary, White, Weld & Co. Incorporated, which offers the full range of underwriting, brokerage, securities trading, and investment counsel services described in this report. (See Notes to the Statement of Financial Condition for further information about White, Weld & Co. Incorporated in the following section.) The other major asset owned by White Weld Holdings is its investment in Financière.

The nerve center of White Weld's worldwide communications network is on Water Street, a few blocks from the firm's headquarters in lower Manhattan. The vastly increased volume of information flowing to and from White Weld's branches in this country and its own offices and those of its close affiliates overseas necessitates the continual expansion and upgrading of electronic communications and data processing equipment. Some four hundred and fifty men and women are now employed at the Water Street operations and administrative center, which opened four years ago.

WHITE WELD HOLDINGS, INC. AND SUBSIDIARY

Statement of Consolidated Financial Condition (unaudited)

December 31, 1976

Assets	
Cash	$ 5,710,000
Receivables:	
Customers	290,472,000
Brokers	68,694,000
Other	11,256,000
Securities—at market value (Note 2)	216,707,000
Investment in associated company (Notes 1 and 3)	16,815,000
Fixed assets—net (Note 1)	7,393,000
Other assets	3,442,000
TOTAL	$620,489,000
Liabilities and Stockholders' Equity	
Current liabilities:	
Money borrowed on securities (Note 2)	$233,214,000
Payable to brokers	69,564,000
Payable to customers	178,658,000
Drafts payable	15,532,000
Securities sold short—at market value	28,354,000
Other current liabilities	20,682,000
Total current liabilities	546,004,000
Promissory note due 1981 (Note 3)	4,000,000
Subordinated borrowings (Note 4)	19,544,000
Common stockholders' equity	50,941,000
TOTAL	$620,489,000

See Notes to Statement of Financial Condition.

Notes to Statement of Financial Condition (unaudited)

1. Accounting Policies

The statement of consolidated financial condition includes the accounts of White Weld Holdings, Inc., and its wholly owned subsidiary, White, Weld & Co. Incorporated (the "Subsidiary"), a member firm of the New York Stock Exchange, Inc. Total assets of the Subsidiary are $598,932,000 and capital funds are $54,329,000, consisting of subordinated borrowings of $18,984,000 (Note 4) and common stockholders' equity of $35,345,000.

Assets and liabilities relating to securities transactions are reflected in the statement on a settlement date basis.

Exchange memberships (included in other assets) are carried at cost ($941,000) and, in the opinion of the Company, the current market value ($623,000) does not indicate a permanent impairment in the value of such memberships.

The investment in the associated company, Société anonyme financière du Credit Suisse et de White Weld, is carried at equity in net assets. Undistributed income of the foreign associated company of $7,992,000 is included in common stockholders' equity.

Fixed assets, which consist of furniture, equipment, and leasehold improvements, are stated at cost less accumulated depreciation and amortization of $3,228,000.

2. Securities Pledged and Loaned

Money borrowed on securities and amounts due in connection with securities loaned and repurchase agreements are fully collateralized by marketable securities valued at $315,133,000. Such collateral includes $205,998,000 owned by the Subsidiary.

3. Promissory Note

The promissory note issued to a bank bears interest at 115% of the bank's prime rate and matures in January 1981. The Company's investment in the associated company is pledged as collateral for the note.

4. Subordinated Borrowings

Subordinated borrowings include senior capital notes, $8,750,000, subordinated debentures, $8,589,000, and secured demand notes, $2,125,000.

The senior capital notes mature in 1987. The Subsidiary is required to prepay, semi-annually, $417,000 principal amount of the notes. The covenants of the note agreement contain restrictions on the Subsidiary as to minimum capital requirements and, under certain circumstances, certain stock payments, stock acquisitions, and the payment of cash dividends. The subordinated debentures mature in the fiscal years ending June 30: 1978, $623,000; 1979, $600,000; 1980, $100,000; 1981, $1,666,000; and 1982, $5,600,000. The secured demand notes mature in 1981.

5. Capital Requirements

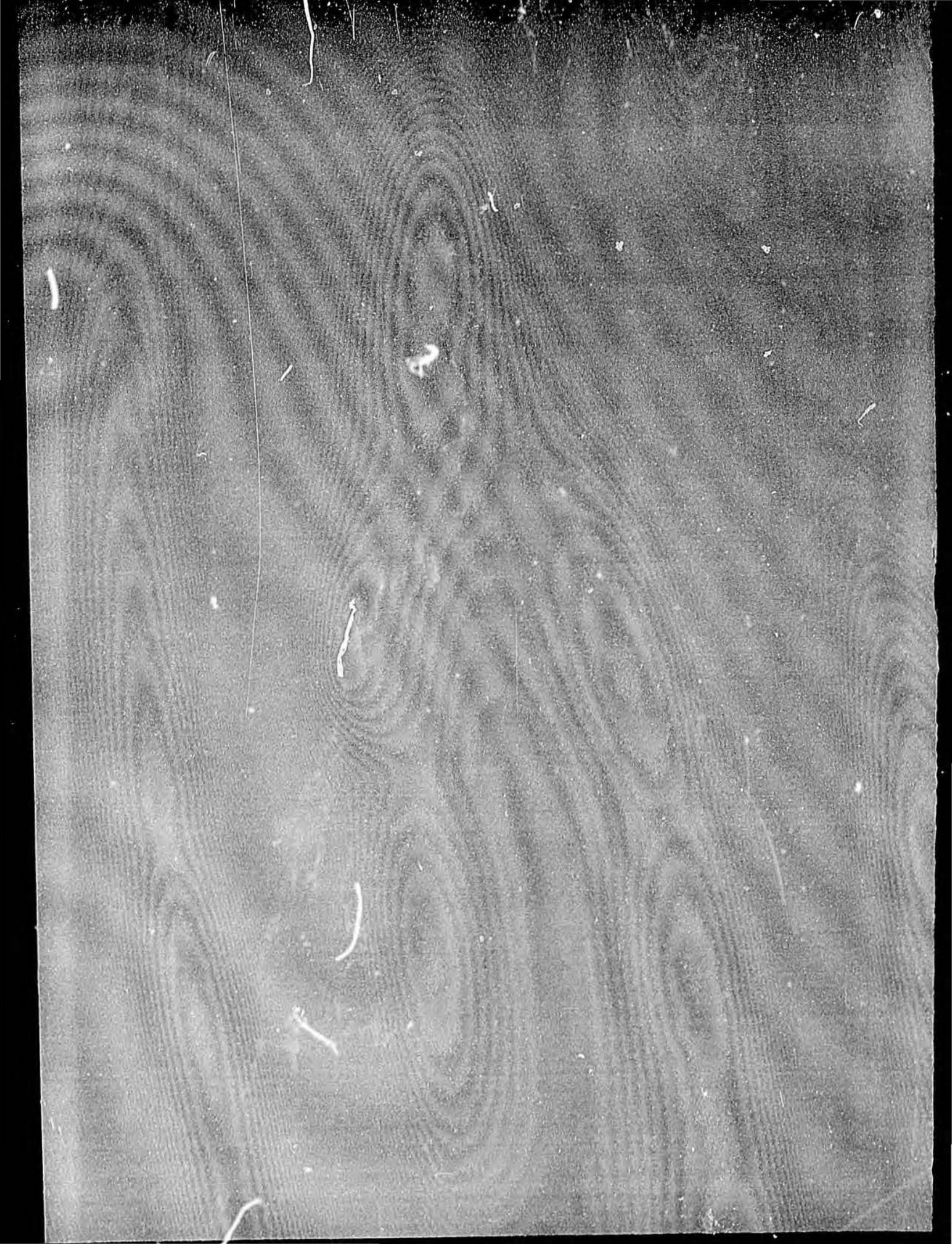
The Subsidiary is subject to the Uniform Net Capital Rule (Rule 15c3-1) of the Securities and Exchange Commission, which requires that aggregate indebtedness (as defined) shall not exceed fifteen times net capital (as defined). There are restrictions on operations of the Subsidiary if aggregate indebtedness exceeds ten times net capital. The Subsidiary's net capital and minimum net capital (as defined) were $32,593,000 and $14,555,000, respectively, and its aggregate indebtedness was 6.7 times its net capital.

6. Commitments and Contingencies

The Subsidiary's minimum rental commitments, net of sublease income, under noncancelable leases are for the fiscal years ending June 30: 1977, $7,171,000; 1978, $6,848,000; 1979, $6,596,000; 1980, $6,009,000; and 1981, $5,112,000; and for the five-fiscal-year periods ending 1986, $22,904,000; 1991, $15,795,000; and 1996, $2,391,000. Included in the foregoing rental commitments are financing leases having a present value of $4,064,000 based upon an approximate weighted average interest rate of 7.20%.

The Subsidiary has a contingent liability of $11,642,000 in respect of irrevocable letters of credit aggregating $12,100,000 which expire March 1, 1977 (renewable for six months thereafter) written in favor of certain option clearing associations to satisfy margin requirements.

The Subsidiary has been named in several civil actions in the ordinary course of its business which, in the opinion of management, will be resolved with no material adverse effect on its financial condition.



White Weld Directors

White Weld Holdings, Inc.

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President

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Vice chairman

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Deputy chairman & managing director
Thyssen-Bornemisza Group

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General manager
Crédit Suisse

Charles C. Lee, Jr.

George G. Montgomery, Jr.

James W. Needham
Treasurer

Thomas C. Pryor

Alexander M. White
Secretary

Frederick S. Wonham

White, Weld & Co. Incorporated

BOARD OF DIRECTORS

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Credit Suisse White Weld Limited

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Vice president

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Caracas
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Branch co-manager

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Hong Kong
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Vice presidents
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Branch co-manager
Zau-Tuh Wong
Branch co-manager

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DIRECTORY OF OFFICES

Main Office

New York City 10006
One Liberty Plaza
91 Liberty Street
(212) 285-2000

55 Water Street 10041
(212) 285-2000

Branch Offices and Managers

Atlanta, Ga. 30303
Trust Company of Georgia Building
25 Pryor Street, N.E.
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Stephen M. Raeber

Boston, Mass. 02110
100 Federal Street
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One American Row
(203) 525-4271
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Houston, Tex. 77002
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Suite 3330
(713) 751-3200
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Kansas City, Mo. 64105
1000 Baltimore Avenue
(816) 221-7400
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One Wilshire Building
(213) 624-6111
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1901 Avenue of the Stars
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(213) 277-8411
G. Wendell Birkhofer

Minneapolis, Minn. 55402
IDS Center
80 South Eighth Street
Suite 626
(612) 370-8900
Hubert G. Ferguson

New Canaan, Conn. 06840
4 Cherry Street, Box 965
(203) 966-5661
Edward L. Winpenny, Jr.

New Haven, Conn. 06510
900 Chapel Street
(203) 624-9841
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New York, N.Y. 10006
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91 Liberty Street
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(212) 751-5500
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Omaha, Nebr. 68131
160 Kiewit Plaza
(402) 348-0130
William S. Latta

Philadelphia, Pa. 19103
Five Penn Center Plaza
(215) 568-7170
Alfred Rauch, Jr.

Providence, R.I. 02903
1812 Hospital Trust Tower
(401) 861-4000
Richard W. Morsilli

St. Louis, Mo. 63102
20 Broadway
(314) 231-3000
J. Hord Armstrong

San Francisco, Calif. 94104
One Bush Street
(415) 981-1077
James D. Murray

Seattle, Wash. 98164
Bank of California Center
910 Fourth Avenue
(206) 464-2811
George L. Hanseth

Troy, Mich. 48084
3250 West Big Beaver Road
Suite 129
(313) 649-0550
Wilfred G. Gill

Tulsa, Okla. 74103
National Bank of Tulsa Building
(918) 585-2721
Larry C. Touchin

Tysons Corner, Va. 22180
Tyson Office Building
Suite 303
8320 Old Courthouse Road
(703) 821-1400
John A. Chase

Washington, D.C. 20006
1775 K Street, N.W.
(202) 452-9800
John A. Chase

Wilmington, Del. 19899
Wilmington Trust Building
100 West 10th Street
(302) 571-5100
John E. Baynum

International

London
P.O. Box 256
Black Swan House
Kennet Wharf Lane
Stephen J. Rose

Paris
142, boulevard Haussmann
G. B. des Minieres

Zurich
56, Schmelzbergstrasse
Jakob Schmid

Caracas
Edificio Seguros Hemisféricos
Avenida San Felipe
La Castellana
Apartado 2555
J. J. Brucker
Heinz Kowalski

Geneva
1, quai du Mont-Blanc
Philippe C. Salvaj

Hong Kong, B.C.C.
2403 Connaught Centre
Z. T. Wong
J. M. Dailey

Montreal
Suite 462
2 Place Ville Marie
(514) 878-9581
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Société anonyme financière du Credit Suisse et de White Weld

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DIRECTORY

Geneva
Banque Clariden
Valeurs White Weld
(White Weld Finance)
1, quai du Mont-Blanc
1201 Geneva, Switzerland
(022) 31 96 50
Telex: 27479

London
Credit Suisse White Weld Limited
White Weld Securities
122 Leadenhall Street
London EC3V 4QH, England
01 283 42 00
Telex: 883731

Paris
Banque Française de Dépôts
et de Titres
142, boulevard Haussmann
75008 Paris, France
(01) 755-9713
Telex: 65314

Tokyo
White Weld Asia Ltd. Incorporated
Yurakucho Denki Building
1-7-1 Yurakucho, Chiyoda-Ku
Tokyo 100, Japan
211 [illegible]61
Telex: J26166

Zug
Société anonyme financière du
Credit Suisse et de White Weld
12, Chamerstrasse
6300 Zug, Switzerland
(042) 21 13 44
Telex: 78900

Zurich
Clariden Bank
35, Claridenstrasse
8002 Zurich, Switzerland
(01) 36 10 50
Telex: 53842

White Weld Services
56 Schmelzbergstrasse
8044 Zurich, Switzerland
(01) 34 84 80
Telex: 55365

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