

ALASKA LEGISLATURE SPECIAL COMMITTEE / SUBJECT FILES 8672
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operate on the Slope. Not surprisingly, it also comes to Juneau and complains bitterly about HB 353, stating again that times are hard and profits are slim and because of this it is cutting back and, in fact, it might consider leaving Alaska if the legislature enacts tax reform. Industry testimony is difficult to swallow since we know they are not leaving Alaska, with its Prudhoe bonanza and its undeveloped reserves, and since we know that separate accounting provides them the proper incentives to stay. It becomes even harder to take when one considers another factor that may explain the majors' cutbacks in a time of great wealth. The fear of takeover is prevalent in American industry right now. This fear probably exists in the boardrooms of the major multinationals. It is possible that this fear is a major factor in industry thinking and that the desire to cut costs to a minimum is really motivated by the need to have enough cash around to prohibit an unfriendly takeover.

XV. How does taxation of the industry in Alaska compare to taxation in other states and at the federal level?

- A. Of the top five oil producing states -- Alaska, California, Texas, Oklahoma and Louisiana, two currently require the use of separate accounting to determine income derived from oil production. These states are Louisiana and Oklahoma. California utilizes formula apportionment and Texas does not have a corporate income tax. (Actually California does require separate accounting in cases where formula apportionment under represents income generation within the state.) In addition, the United States government requires the use of separate accounting in certain instances.
- B. Another way to compare taxation of the industry in Alaska to industry taxation elsewhere is to compare how much is collected by states from the whole tax code and leasing structure, not just the income tax. The ISER study compared tax and leasing policies in Alaska to such policies in Texas and concluded that "... Alaska and Texas collected approximately the same amount of revenue from oil and gas production." This is interesting because the tax and leasing structure in Texas and Alaska are very different yet, essentially, industry is treated the same. Alaska should not be judged by whether it has a separate accounting or a formula apportionment

based income tax but rather by how its policies as a whole impact the oil industry. Is the industry making money? Does the state provide it with the proper incentives to remain in Alaska? And does the state reap its fair share of benefits from the industry's presence?

XVI. Conclusion

- A. HB 353 is well constructed tax reform legislation. It is an attempt to restore Alaska's fair share of the oil wealth to provide Alaskans with desired public services, provide an atmosphere that encourages the oil industry to remain in Alaska, and return Alaska's tax structure to the exhaustively studied and carefully refined one that existed before it was challenged by the oil companies in the late 1970s.

ALASKA STATE AFL-CIO
AND
ALASKA TEAMSTERS LOCAL 959

File
Separate Act
A3353

WHITE PAPER REPORT
TO THE
ALASKA STATE LEGISLATURE
ON
ALASKA OIL AND GAS RESOURCES

Presented to the
Alaska State Legislature
January 30, 1986

ALASKA OIL AND GAS
HOUSE BILL 353

Introductory Review

In concurrence with the findings of fact of the Alaska House Finance Subcommittee on Oil and Gas, we find that House Bill 353 is essential to the preservation of fair taxation under the Alaska Corporate Petroleum Income Tax. The responsibility to assure that the extraction of Alaska's depletable petroleum resource by the industry meets the best interests of the State of Alaska now stands before our Legislators. Prompt legislative action will protect this resource.

As the compendium of economic research and analyses completed in the state to date all conclude, separate accounting under HB 353*1 will reestablish fair taxation. First, such research observes that separate accounting most accurately determines the Alaska net income for Alaskan petroleum operations. Second, separate accounting will encourage oil exploration and development ventures in this state since no tax liability is incurred until the field generates a profit. Third, HB 353 will assure state revenue necessary to build and maintain schools for our children, police protection for our state, health and services programs for our people, and roads and buildings for Alaska. Opinions in opposition to separate Alaskan accounting have not yet answered these facts.

*1 HB further provides a reduction in the nominal severance tax rate

Based on our assessment, it is necessary to close the loopholes in the current tax structure created in 1981 so we can retain the standard of living for Alaskans. We do not, however, advocate any tax increase in the 9.4% tax rate for the Alaska oil industry as some would suggest. Fair taxation through separate "Alaskan" accounting adequately protects Alaska's interests while also encouraging economic development for the benefit of both the oil industry and Alaskans.

The Economics of Fair Taxation Under Separate Accounting

The cost to the State of Alaska in terms of "economic loss" without a separate accounting system has been well documented. Actual estimates now place the loss at \$850 million from FY 82 to present under modified apportionment. Most projections also estimate further losses of \$1.4 billion by the state without a separate accounting system. See Department of Revenue Fiscal Analysis 10/31/85. Of course, those economic principles which led to the initial adoption of separate accounting in 1978 certainly hold true today. Separate accounting directly measures actual petroleum revenues for production (mbd X wellhead price) and pipeline revenue (thruput X tariff) for Alaskan operations. Net taxable income is then derived by deduction of all costs of development and production. No opportunity exists for cost transfers or accounting measures which offset true Alaska profitability.

It then becomes debatable whether the losses attributable to the lack of separate accounting since 1981 have somehow spurred economic development. Or more directly, whether the system of modified apportionment accounting maximizes economic growth in Alaska. That question has been addressed by the DCR and the report of Institute of Social and Economic Research, Alaska Petroleum Revenue (Prof. Berman 1985).

As also indicated in the DCR analysis by Chief Analyst Vincent Wright, the modified accounting system simply does little to promote Alaskan investment. Currently those investments of revenue generated from Alaska oil fields, but spent elsewhere, are still provided tax deductibility. In contrast, separate accounting promotes reinvestment of Alaskan-generated revenues back into Alaska operations. With the worldwide operations of Atlantic Richfield Co., Sohio-British Petroleum Co., and Exxon Corporation* - the major North Slope producers - it is certainly understandable why Alaskan revenues may be invested worldwide. As with other jurisdictions, however, a separate accounting system would encourage investment in this state.

It should also be pointed out, of course, that separate accounting encourages the development of marginal fields since no taxes become due in

*2 Principal offices (Securities and Exchange Commission 10-K reports):

Atlantic Richfield Co. - Los Angeles, California;
Sohio - Ohio corporation
British Petroleum Co. - United Kingdom corporation

such fields until oil production commences and actual profits are generated. To the extent that tax relief plays a role in the exploration and development of such fields, this reduction promotes greater Alaska oil production, economic development, and employment opportunities. Nominal severance tax adjustments in HB 353 further this effect.

The History of Separate Accounting

A review of the background which led to the establishment of separate accounting in 1978, and the later passage of SB 524 on Modified Apportionment, is essential to realistically assess arguments for "stable taxation." Little information has been provided to the public.

Enactment of separate accounting by the 1978 Legislature followed the prevailing tax system used in the U.S. to accurately tax petroleum companies. Its superiority is well-recognized. Faced with the leverage of the Atlantic Richfield et al v. State suit, however, the 1981 Legislature retreated from separate accounting to a "Modified Apportionment" system drafted by the oil industry itself.

Legislative testimony by then DOR Commissioner Thomas Williams indicates that SB 524 was not intended to cause the tax decrease it has in fact provided to the oil industry. Its objective was to avoid potential loss of revenue raised by the suit.

The U.S. Supreme Court's January 13, 1986 decision has now cleared the industry's challenge of separate accounting. Atlantic Richfield et al v. State cert. denied (U.S. 1986). Now only political forces preclude return to the separate accounting system. The issue has been met by an intensive industry lobby and media campaign to affect public policy.

Alaska Public Policies

Extraction of Alaska's depletable petroleum resource by the industry should fulfill the interests of Alaskans while certainly providing a fair rate of return to the industry. Despite the decline in worldwide oil prices, North Slope oil producers have continued attractive net profits estimated at \$5.8 to \$6 billion annually since 1981. But the state's revenues have declined in this period, as has its actual share of the net oil wealth.

Lost revenue attributable to the lack of a separate accounting system directly affects the services in this state. The Alaska AFL-CIO and Alaska Teamsters Local 959, combined, represent over 60,000 Alaskans. We understand and appreciate the value of public education, health and social services, public roads and buildings, police and our court system, development of adequate facilities for rural Alaskans, and endowment of our Alaska Permanent Fund.

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Astute protection of these interests requires us to use the most accurate corporate petroleum tax system available. We intend to do our best to provide all Alaskans with the facts and information on what HB 353 means for Alaska.

THE EFFECT OF STATE INCOME TAX POLICY ON THE DEVELOPMENT
OF MARGINAL OIL FIELDS
An Analysis of the Impact of House Bill 353

Jay Livey
House Research Agency
Alaska State Legislature
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House Research Agency Report 86-C

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INTRODUCTION

Since the time that oil was first produced in Alaska, taxation of the corporate income generated from that production has been controversial. Over the years, three methods have been used to tax income from oil production: formula apportionment, separate accounting, and modified apportionment. With the introduction of House Bill 353 during the 1985 legislative session, taxation of petroleum-related corporate income by the State has again become an important legislative issue.

The State of Alaska first adopted income taxes based on separate accounting in 1978. Several petroleum companies challenged the constitutionality of this tax in court. Because of the State's potential tax liability if the separate accounting law were declared unconstitutional, the legislature in 1982 replaced the separate accounting law with a modified formula apportionment. Recently, both the State and United States Supreme Courts have found the State's separate accounting law to be an appropriate method of taxation. This liberated the State from potential tax liabilities resulting from the previous separate accounting law.

Although the State imposes other types of taxes on oil production and related activities--severance tax, conservation tax, property tax--this report concentrates on corporate income taxes, with particular emphasis on the impact of income taxes on marginal oil fields. Chapter One provides a brief history of corporate taxation in Alaska and describes the difference between separate accounting and modified formula apportionment. Chapter Two discusses the impact of income taxes on petroleum investment decisions. Chapter Three examines the impact of income taxes on three of Alaska's marginal oil fields.

SUMMARY

Corporate Income Taxation in Alaska

The Territory of Alaska first taxed corporate income with the passage of Chapter 115, SLA 1949. This tax apportioned a corporation's taxable income to Alaska based on a three-factor formula that compared the property, sales and payroll in Alaska to the corporation's property, sales and payroll everywhere. Corporate income tax collections for all Alaska corporations were based on this formula apportionment approach until 1978. (Page 1)

By the middle of the 1970s, critics were claiming that formula apportionment would not apportion to Alaska a fair share of petroleum income that was going to be earned in the state. After a series of legislative hearings concerning income taxation, two options emerged as popular alternatives to standard formula apportionment. The first, modified apportionment, replaced the payroll factor in the standard apportionment formula with an extraction factor. This change was designed to make the apportionment formula more applicable to the taxation of oil and gas income earned in Alaska. The second alternative, separate accounting, segregated corporate income earned in Alaska from corporate income earned in any other location. In 1978, the separate accounting method was enacted into law (AS 43.21). (Page 1-5)

ARCO, Sohio, Exxon and their pipeline subsidiaries challenged the constitutionality of the separate accounting income tax law in court. Because taxes collected under the challenged law were subject to refund should the State lose, the legislature in 1981 repealed the separate accounting law and replaced it with a modified apportionment law similar to the one debated three years earlier. (Page 5-6)

Recently, the State Supreme Court ruled that the separate accounting law was an appropriate allocation method and that the petroleum companies failed to show that separate accounting misappropriated income to Alaska. The United States Supreme Court upheld the decision of the State court by dismissing the oil companies appeal of the State court decision. The oil companies have filed for a rehearing of the case. If this reconsideration is rejected, the final appeal of the oil companies is eliminated. (Page 6)

Comparison of Modified Apportionment and House Bill 353

Modified apportionment and separate accounting both apply a tax rate of 9.4 percent to income earned by oil and gas producers and transporters in the state. However, the methodologies used to determine income subject to tax are significantly different. (Page 6-8)

Under modified apportionment, Alaska taxable income is determined by adjusting corporate federal taxable income to meet special rules imposed by the State. After this adjustment, corporate income is apportioned to Alaska through a formula comprised of three factors that compare the taxpayer's oil and gas related activities in Alaska to the taxpayer's oil and gas related activities everywhere. (Page 8-9)

Under separate accounting (House Bill 353), Alaska taxable income for petroleum producers and transporters would be calculated by subtracting allowable deductions from revenues earned in the state. Net income from the transportation of oil or gas in the state would be defined as the amount of operating income reported or required to be reported to the Federal Energy Regulatory Commission. (Page 10-11)

Critics and proponents of formula apportionment and separate accounting argue the relative merits of the systems. Areas of disagreement include equity, distortion, applicability, and ease of administration. (Page 11-14)

Alaska's Marginal Oil Fields

Marginal fields are those in which the expected risk-adjusted return from the oil production approximates the minimal return required to provide sufficient incentive for an oil company to develop an oil field. At this time, only four marginal projects--Prudhoe Bay Enhanced Oil Recovery, Lisburne, Endicott and Milne Point--are being developed for near-term production. Based on technological advances and favorable economic conditions, West Sak could potentially contribute significant quantities of oil to North Slope output. The commercial development of Gwyder Bay, Flaxman/Point Thompson and Seal Island are doubtful based on current conditions. (Page 15-17)

The contribution of marginal fields to cumulative North Slope oil production between 1986 and 2010 is projected by the Department of Natural Resources to be about 21 percent. However, this projection includes considerable oil from the West Sak sands, a development that is speculative based on current economic conditions. (Page 17-18)

Despite contributions from the marginal oil fields, total North Slope production is projected to decline steadily from 1986 through 2010. This occurs because the incremental production from the marginal fields is not sufficient to replace the decline in production from the Prudhoe Bay and Kuparuk fields. By 1995, total North Slope production is projected to be 40 percent lower than the 1986 total North Slope projected production. (Page 19-21)

Effect of Taxation on Decisions to Explore and Develop an Oil Field

Taxation affects decisions of oil companies to find, develop and produce from oil fields. Given the assumption that capital is unlimited, economic theory suggests that income taxes may affect exploration decisions but have no effect on development and production decisions. In a world of limited capital, higher income taxes affect investment decisions by: 1) reducing the amount of capital available to invest; and 2) lowering an investment's projected rate of return, thus making the investment less desirable when compared to other investment opportunities of the corporation. (Page 22-25)

Economic theory suggests that House Bill 353 (HB 353) would have less negative impact than modified apportionment on marginal field investment decisions because, under separate accounting, income taxes are directly related to the profit made from an investment in Alaska. Apportionment does not directly tax income earned in Alaska; it taxes a company's worldwide income in proportion to the company's economic activities in Alaska. Consequently, apportionment could impose higher income taxes than the actual profitability of an investment warrants. These higher taxes would reduce cash flow projections, decrease the projected rate of return on the project and make the project less desirable compared to other investment options. (Page 25)

Highly profitable projects would be taxed more heavily under HB 353 than under modified apportionment. If an Alaska investment has a higher rate of return than the average of the company's worldwide investments, separate accounting will tax the earnings of the Alaska investment more heavily than would the modified apportionment formula. (Page 26-27)

Capital Accumulation and Income Taxes

Income taxes reduce the amount of earnings corporations retain from their economic activities. It is these earnings that account either indirectly or directly for the capital used for future investments. (Page 32-36)

The Department of Revenue has projected that State income and severance tax collections would increase by \$1.6 billion dollars (in 1985 value) between 1986 and 2005 if HB 353 replaced the current income tax law. A significant portion of the additional revenues from HB 353 occurs in the next few years. If HB 353 were not enacted until 1988, total additional collections would fall by \$705 million to \$859 million, a decrease of 45 percent. The difference in tax collections under the two laws is primarily from the more profitable Prudhoe Bay and Kuparuk fields. (Page 36-37)

Tax collections under HB 353 are much more sensitive to changes in the price of oil than are collections from modified apportionment. As oil prices fall, tax collections from separate accounting would decline at a faster rate than collections under modified apportionment. As prices rise, collections under HB 353 would increase more rapidly than under modified apportionment. (Page 31)

Some oil industry representatives argue that during times of expected lower earnings, capital availability becomes a more important factor in investment decisions than during times of higher oil prices. This occurs because as earnings fall, reducing available capital, capital rationing may exclude projects with acceptable rates of return. Other analysts disagree, and claim that capital availability should not be a problem for the major oil companies in the future. (Page 34-35)

Sources of Petroleum Capital Investment. Three sources of capital are generally available to corporations: proceeds from the sale of stock; proceeds from the sale of bonds; and cash generated from operations. During 1983 and 1984, internal operations was the primary source of capital for a selected group of petroleum companies, supplying 80 and 75 percent respectively. Projections of future capital sources for the petroleum industry indicate that through the year 2001, eighty to eighty-five percent of investment capital will be supplied by internal operations. (Page 32)

Uses of Investment Capital. In 1983 and 1984, the largest use of capital was for exploration and drilling. Capital expenditures are generally expected to be sensitive to the market price of oil; lower crude oil prices reduce expectations of profits, which lead to less exploration and drilling. (Page 33)

Effect of Income Taxes on Marginal Field Net Revenue

Net revenues are gross revenues from petroleum production and transportation activities minus all the allowable nontax expenses (deductions) associated with earning those revenues. It is net revenue that constitutes the pie that is divided among the industry and State and federal governments. The State and federal share of net revenue is comprised of royalty, tax and rental income. The industry share is the amount of net revenue retained after the State and federal shares are deducted. (Page 39-44)

Shares of Net Revenues--All Producing Fields. Under either HB 353 or current law, the State share of net revenue increases between the years 1986 and 2005; the industry and federal shares decline. This is primarily due to severance taxes and royalties. Because these sources of State income are levied on a percentage of production rather than as a percentage of net income, they are unaffected by changes in the cost

of production. As per barrel production costs increase in the declining years of Prudhoe Bay and Kuparuk production and as marginal fields begin production, net revenue declines more rapidly than State collections, resulting in the increasing State share of net revenue. (Page 44-46)

Between the years 1986 and 2002, the State share is higher under HB 353 than under current law. After 2002, the State share is higher under current law than under HB 353. Between 1986 and 2002, the industry share is higher under current law and lower under HB 353. After 2002, industry share is higher under HB 353 and lower under current law. (Page 44-46)

Shares of Net Revenue--Marginal Fields. For the three marginal fields that we analyzed--Milne Point, Endicott and Lisburne--the industry share of net revenue was consistently higher under HB 353 than under current law. Conversely, the State share was higher under current law than under HB 353. This result is contrary to the findings of the shares analysis that included all the producing fields. (Page 47)

The State and industry shares of net revenue are sensitive to the inclusion or exclusion of specific oil fields because of the large disparity in the profitability of oil production among different fields. The marginal fields are less profitable than the average investment so are subject to higher taxation under modified apportionment than under HB 353. In contrast, the high profitability of production and transportation activities associated with the Prudhoe Bay and Kuparuk fields mean that income from these fields is taxed more heavily under HB 353 than under current law. (Page 51)

Although our analysis indicated that the State share of net revenue from the marginal fields is lower under HB 353 than under current law, the difference in State collections from the marginal fields is relatively small. Our projections show that over the life of three marginal fields--Milne Point, Lisburne and Endicott--total State collections under current law would exceed collections under HB 353 by 5.2 percent, or \$180 million. The total additional revenue collections to the State from the adoption of HB 353 was \$1.6 billion between 1986 and 2005. So, the additional revenues associated with the adoption of HB 353 are generated by higher taxes on the Prudhoe Bay and Kuparuk fields. The adoption of HB 353 seems to have little effect on the development of known marginal fields. (Page 51)

It should not be overlooked that income taxes do impact exploration decisions. However, it is not clear that HB 353 discourages exploration to a greater degree than current law. Although larger, more profitable fields that were discovered would pay higher taxes under HB 353, smaller, marginal fields would pay lower taxes. In addition, current law provides a disincentive to explore because, under the modified apportionment, exploration activities would be taxed even though oil may not be produced. (Page 52)

In considering the economic impact to the State's economy of the adoption of HB 353, the legislature is faced with a dilemma common to all economic problems: weighing return against risk. Adoption of HB 353 would result in increased tax revenues without adversely affecting the development of known marginal fields. However, this decision is not without risk. Adoption of HB 353 may discourage future exploration by reducing the potential value of very large fields, leaving potential oil fields undiscovered and ultimately lowering potential State revenues. It could also subject the State to excessive revenue declines if oil prices are lower than projected. (Page 52)

CHAPTER ONE

CORPORATE INCOME TAXATION IN ALASKA

The Territory of Alaska first taxed corporate income with the passage of Chapter 115, SLA 1949. This tax apportioned a corporation's taxable income to Alaska based on a three-factor formula that compared the property, sales and payroll in Alaska to the corporation's property, sales and payroll everywhere.

In 1959, Alaska became the first state to adopt the Uniform Division of Income for Tax Purposes Act (UDITPA). This act attempted to provide states with a uniform method of apportioning income of multi-state taxpayers. This effort toward uniformity was continued with the establishment in 1966 of the Multistate Tax Compact, which Alaska joined in 1970 (Ch. 124, SLA 1970). Corporate income tax collections for all Alaska corporations were based on this formula apportionment approach until 1978.

By the middle of the 1970s, the formula apportionment method of determining corporate income subject to State taxation was coming under increasing criticism. Even though formula apportionment allowed the State to tax the income of oil companies prior to the start of production, State officials and legislators began to question the applicability of formula apportionment to the oil and gas industry. Critics claimed that this method of taxation would not apportion to Alaska a fair share of petroleum income that was going to be earned in the state. By 1975, the legislature began to actively study the corporate income tax policy of the state.

ANALYSIS OF FORMULA APPORTIONMENT

Consultants, hired by both the legislature and the executive branch to analyze the State's corporate income tax, levied similar criticisms against the existing taxation method.¹ First, they claimed that the

¹Milton Lipton of Walter Levy and Associates recommended changes in the corporate income tax in several appearances before legislative committees. See the following testimony: February 12, 1975 and April 14, 1975 before the Senate Resources Committee and November 7, 1975 before legislative council. Also, Jerome Zeifman and Kenneth Ainsworth analyzed state corporate taxation policies for the Department of the Revenue in their report entitled "The Taxation of the Petroleum Industry Under Alaska's Corporate Income Tax."

CORPORATE INCOME TAXATION

State tax base was seriously eroded because income was based on federal taxable income. Secondly, the three-factor formula used to apportion income taxable in Alaska was not applicable to the oil and gas industry.

Erosion of the Tax Base

Before 1978, a corporation's taxable income in Alaska was based on its federal taxable income. The use of federal taxable income meant that Alaska also adopted all of the federal tax incentives and deductions including accelerated depreciation, percentage depletion, deduction of intangible drilling costs and foreign tax and investment credits. These rules are generally designed to lower a corporation's tax liability by reducing the amount of income subject to taxation. They were applied to the petroleum industry as part of a national policy of encouraging exploration for and development of oil and gas resources. This policy recognized the riskiness of exploration and production investments, the desire to reduce United States dependence on foreign oil and the need for lower petroleum prices. As the federal government enacted tax laws to promote this national social and economic policy, the automatic and direct consequence was reduced State taxable income.

The effect of using federal taxable income as the State tax base was examined in a 1977 Department of Revenue report. That report concluded:

...the approximate effective federal tax rate on the corporate net income (before federal tax) reported to shareholders ranged from 1.8 percent to 35.6 percent. Adoption of the same eroded tax base by Alaska, even assuming that all income is taxable by Alaska, would mean a comparable effective tax rate of .28 to 5 percent instead of the 9.4 percent statutory rate for these selected companies.²

In addition to the lost revenue resulting from the eroded tax base, the wisdom of adopting federal taxation policy by default was also questioned by the Department of Revenue report:

...Although this is only one example of many, it points to a particular problem of incorporation of the federal tax laws in total. If Alaska wants to encourage certain types of development or certain industries through its tax laws, the State may be thwarted by Federal tax provisions working at cross purposes. On the other hand, if State policies dictate the denial of incentives

²Alaska's Oil and Gas Tax Structure: A Study with Recommendations for Improvement, State of Alaska Department of Revenue, February 1977, page v-7.

or subsidies in certain circumstances, Alaska may find itself unwittingly providing those incentives through its adoption of the federal tax code.³

Applicability of Three-Factor Formula

The State's corporate income tax was based on the provisions of the multi-state tax compact. If a corporation conducted all of its business in Alaska, all of its income was assigned to Alaska for taxation purposes. If a corporation conducted business in more than one state or nation, the corporation's total income was divided among the states according to an apportionment formula that based the corporation's taxable income on the ratio of the company's Alaska-based property, sales and payroll to the corporation's property, sales and payroll everywhere.

The theory behind the use of the three-factor formula to apportion income is that a corporation's sales, property and payroll in a state are reasonably accurate indicators of the share of total corporate income earned in that state. However, critics of formula apportionment claimed that the factors are not applicable to the resource extraction industry in Alaska which is characterized by few in-state sales and oil production activities that are not labor intensive relative to marketing and refining. A more detailed discussion of the criticism of formula apportionment is found later in this chapter.

OPTIONS FOR CORPORATE INCOME TAXATION

After a series of legislative hearings concerning income taxation, two options emerged as the popular alternatives:

1. Retain the formula apportionment method of determining taxable income, but replace the payroll factor with an extraction factor (which would compare a corporation's oil and gas extraction in Alaska to its oil and gas extraction everywhere) and use corporate book income rather than federal taxable income as the tax base. This option became known as modified apportionment.
2. Develop a corporate tax based on separate accounting. This tax scheme would segregate corporate income earned in Alaska from corporate income earned in any other location. Only income specifically recognized as being earned in Alaska could be taxed in Alaska.

³Alaska's Oil and Gas Tax Structure, page v-11.

Modified Apportionment

Supporters of modified apportionment argued that using book income would reduce tax base erosion and the extraction factor would properly assign more income to Alaska as Prudhoe Bay production increased. Critics claimed that the extraction factor would be difficult to administer because of difficulty in determining a corporation's worldwide extraction. Critics of modified apportionment also pointed out that because this taxation scheme is based on the assumption that all business enterprises of a corporation are equally profitable, the modified apportionment system would create inequities among oil and gas producers in Alaska due to its failure to properly recognize the higher profitability of a field like Prudhoe Bay.

Separate Accounting

Supporters of separate accounting claimed that this method would be the most equitable taxation scheme as corporations would pay tax only on the income earned in Alaska. Equity would occur among all the oil and gas producers in Alaska and the State would enjoy tax collections that approached the 9.4 percent statutory tax rate. Critics of separate accounting claimed that the tax was almost impossible to administer because of the difficulty in determining income earned in Alaska. Opponents also questioned the ability of State auditors to accurately determine income earned in the state because of the complex sales and transfer transactions made by integrated multi-national oil companies.

The Industry Position

During this debate, the petroleum industry was also testifying on the various taxation proposals.⁴ Representatives of the petroleum industry argued that the Alaska corporate taxation scheme did not need revision. First, representatives claimed that Alaska taxes were already relatively

⁴See State Income Taxation of Multinational Oil Companies Operating in Alaska: A Discussion of Various Proposals and Their Effects on Taxpayers, by the Alaska Oil and Gas Association; The Effects of House Bill 322 and Senate CS for CS for House Bill 322 on Uniformity and Equity, by Gary Boren; Position Paper on Alaska Oil and Gas Taxation, by John Warren; A Summary of State Taxation of Multi-state Business Income--History and Present Status, by Leonard Kust; Income Taxation of Multi-state Corporations Engaged In Oil and Gas Production and Transportation in Alaska, by Leonard Kust; and Prudhoe Bay Field and Trans-Alaska Pipeline System--Comparative State Burden Study by Arthur Anderson and Company.

high compared to other states. To further increase taxes would unfairly tax Prudhoe Bay as well as jeopardize the future development of the petroleum industry in the state.

Secondly, industry representatives claimed that separate accounting would lead to double taxation of income earned in Alaska. They noted that this income would be taxed in Alaska as well as other states that applied formulas to apportion income.

Also, legal representatives of the petroleum industry claimed that not allowing companies to use federal taxable income resulted in illegal discrimination. Claims were also made that if either the modified apportionment or separate accounting option were adopted, the State would be forced out of the multi-state tax compact.

The Selected Option

The result of the corporate taxation debate was the passage, in 1978, of Alaska's Oil and Gas Corporate Income Tax (AS 43.21), a tax law based on the separate accounting methodology. Several petroleum transportation and production companies challenged the constitutionality of the separate accounting approach; these cases were consolidated in Superior Court in 1980.

In response to this legal challenge and the enormous tax liability that was accruing, Alaska's separate accounting income tax law was repealed by Chapter 116, SLA 1981. The same law imposed a modified formula apportionment method of income attribution that was similar to the method discussed by the legislature three years earlier except that federal taxable income rather than book income was used as the tax base. This is the law that is currently in effect.

The primary motivation in the legislature's decision to repeal separate accounting was an attempt to limit the State's potential liability in the separate accounting lawsuit (tax collection made under the separate accounting law could be subject to refund with interest if the State lost). In conjunction with this change in the income tax law, Chapter 116, SLA 1981 raised the severance tax on oil production in order to offset the revenue decline expected as a result of the change in the income tax.

ARCO et.al. v State of Alaska

Atlantic Richfield Company, Exxon Corporation, Sohio Corporation and their pipeline subsidiaries claimed that the use of separate accounting to apportion income was unconstitutional because by applying separate accounting, the State of Alaska taxed income that was not earned in

Alaska. The State of Alaska argued that separate accounting is a legitimate method of income allocation and fairly apports income earned in Alaska. The State Supreme Court agreed that the State's separate accounting law was an appropriate allocation method and that the petroleum companies failed to show that the application of the law misapports income to Alaska. This case was decided in August 1985.

The oil companies involved in the case appealed to the United States Supreme court after the State court decision. Recently, the United States Supreme Court upheld the decision of the State Supreme Court by dismissing the oil companies' appeal. The oil companies have filed a petition of rehearing with the U. S. Supreme Court, but the court has made no ruling concerning the petition. If the Supreme Court refuses to reconsider the case, the final appeal of the companies is eliminated, as is the State's potential liability of approximately \$2 billion (resulting from tax revenues and accrued interest). Had the State lost the case, these tax collections from the years the separate accounting law was in effect would have had to be refunded. Clearly, the removal of this liability increases the legislature's freedom to consider separate accounting as an option to the current income taxation law. However, before examining this option, we will first discuss the modified apportionment income tax law currently in effect.

DETERMINATION OF TAXABLE INCOME

Alaska Statute 43.20 states that the business income of a corporation subject to apportionment in Alaska is the taxpayer's federal taxable income subject to several modifications detailed in that chapter. Some of these modifications apply to all corporate taxpayers in Alaska and some apply specifically to oil producers and transporters. Before identifying these, however, we need to briefly discuss how federal income is determined.

Federal Taxable Income

The starting point for calculating federal taxable income is gross revenue. This is the total of all the sales of the company's products during the tax year. From gross revenue the company subtracts all the costs associated with producing those revenues. These deductions include items such as labor, supplies, rent, utilities, depreciation interest expense, etc. The amount of revenue left after subtracting all expenses is federal taxable income. Taxable income is multiplied by the applicable tax rate to determine the income tax payable.

Certain expenses that a corporation incurs are treated differently than deductions from revenue. Tax credits are expenses that can be subtracted directly from the corporation's tax liability. For example, the federal government allows corporations to subtract certain investment costs directly from their income tax. In addition, not all corporations make money every year. If the expenses of a corporation exceed their revenues, the federal taxable income will be zero. But the law allows corporations to apply the loss from one year to other years in which a profit is earned. Thus, the taxable income from one year can be reduced by the amount of applicable losses from other years.

The federal government has also adopted special rules that apply specifically to the petroleum industry. Generally, these rules recognize the riskiness of oil and gas exploration and are an attempt to use the federal tax code to encourage exploration for and development of oil and gas reserves. When an oil company finds that a property will not be productive, all the expenses incurred in drilling the exploratory well as well as other related costs can be deducted from taxable income in the year that the decision to abandon is made. For example, in 1983, Sohio deducted \$163 million dollars from income because the company abandoned their Mukluk prospect.⁵

Intangible drilling costs are expenditures which do not ordinarily have a salvage value. They may include such items as drilling rig transportation, drilling fluid, drilling rig operations and well supplies. The Internal Revenue Service (IRS) gives oil producers the choice of expensing 80 percent (i.e. deducting 80 percent of these costs in a single year) or capitalizing these costs; however, only one choice is possible and the choice must be made in the year that intangible drilling costs are incurred. If these costs are capitalized, only a portion could be written off each year.

Depletion costs are the deductions allowed oil producers to offset the reduction in value of reserves as the oil is removed. The portion of costs deducted each year is proportional to the reserves recovered. Before 1975, percentage depletion was available to all oil producers. This method allowed a percentage of gross revenue to be deducted from income (up to 50 percent of net income) to compensate for the reduction in reserves. However, in 1975, percentage depletion was largely eliminated for major producers and its use by smaller producers was greatly restricted. Cost depletion, which bases the allowable deduction on the investment in the producing property and the percentage of reserves that have been removed, is still allowed for all producers.

⁵1984 Sohio Annual Report, page 42.

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State Taxable Income

Although the State of Alaska references federal taxable income as the starting point for calculating corporate income to be apportioned, the legislature has adopted several special rules (AS 43.20.036) that apply to the calculation of income tax.

- The foreign tax credit allowed by the federal government cannot be applied against State tax liability;
- The amount of investment tax credit that may be applied to the State tax liability is limited; and
- The tax exemption allowed for domestic international sales corporations (DISC) is allowed. (A DISC is defined in the IRS code as a corporation with 95 percent of its receipts coming from exports.)

Also, AS 43.20.072 requires that State taxable income includes any taxes on net income that the taxpayer deducted to determine federal taxable income.

In addition, the legislature has adopted special rules that apply to the way oil producers and pipeline transporters must modify federal taxable income before it is apportioned to the State. Alaska Statute 43.20.072 applies the following rules:

- intangible drilling and development costs that had been deducted from income as expenses shall be capitalized and depreciated;
- depletion costs, if applicable, deducted by the percentage of depletion method shall be recomputed on the cost depletion basis; and
- depreciation shall be computed on the basis of 26 USC 167 (Internal Revenue Code) as that section read on June 30, 1981. This means that the State of Alaska does not recognize accelerated depreciation methods that have been adopted by the federal government since that date.

Apportionment of Income to Alaska

After federal taxable income for a corporation has been calculated and adjusted under the special rules that the State of Alaska has imposed, it must be apportioned to Alaska. If the company earns all of its income in Alaska, then all of the taxable income is subject to Alaska taxes. If the income is earned in more than one state or nation, it is

apportioned according to apportionment formulas. Special apportionment formulas are used for oil and gas producers, pipeline transporters and corporations that do both.

If a company is engaged in economic activities that are unrelated to oil and gas production and transportation, only the oil and gas income is subject to the special apportionment formulas. The income not related to oil and gas activity is subject to the standard apportionment formula. We will concentrate on the modified formula that applies to corporations that are both oil and gas producers and transporters.

The formula used for apportionment of oil and gas related income is based on three factors: extraction, sales and property. The extraction factor is a ratio of the volume of the taxpayer's oil and gas production (net of royalty) in Alaska to the volume of the taxpayer's oil and gas production (net of royalty) everywhere. The sales factor is a ratio of the taxpayer's pipeline tariffs plus oil and gas (and oil and gas product) sales in the state to the taxpayer's pipeline tariffs and oil and gas sales (and oil and gas product sales) everywhere. The property factor is a ratio of the taxpayer's oil and gas related property in Alaska to the taxpayer's oil and gas related property everywhere.

Because each of the factors are considered equally in the apportionment of income, each one is divided by three and the results are summed. The resulting percentage is the ratio of worldwide extraction, sales and property that are used for oil and gas production and transportation in Alaska. This percentage is then multiplied by the taxpayer's federal taxable income (adjusted by Alaska's special rules) to determine Alaska taxable income. This income is then multiplied by the applicable tax rate to determine State income tax liability. This liability is then adjusted for any applicable tax credits. The result is the tax payable to the State.

In equation form the formula looks like this:

$$\left[\frac{\text{Instate extraction}}{\text{total extraction}} + \frac{\text{Instate sales}}{\text{total sales}} + \frac{\text{Instate Property}}{\text{total property}} \right] \div 3 \times \text{Federal Taxable Income} = \text{Taxable Income}$$

$$\left[\text{Alaska Taxable Income} - \text{Previous Applicable Losses} \right] \times \text{Corporate Tax Rate (9.4\%)} = \text{Tax Liability}$$

$$\text{Corporate Tax Liability} - \text{Tax Credits} = \text{Taxes Payable}$$

State Taxable Income Under House Bill 353

House Bill 353 (HB 353) determines Alaska taxable income for petroleum producers and transporters by first calculating gross revenue from Alaska operations and then subtracting allowable deductions. Although this method is similar to the calculation of federal taxable income, it should be noted that HB 353 does not reference the Internal Revenue Code; all the deductions and special rules applicable for calculating corporate income taxation are found in the law itself or the regulations implementing the law.

Gross Income. Gross income for oil and gas production is defined as the gross value (at the point of production) of oil or gas produced from leases or property in the state. Although the determination of gross value depends upon the specific regulations adopted by the Department of Revenue to implement the law, HB 353 directs the department to consider the actual price or values received for the oil or gas, the posted price for the oil or gas in the same field or the prevailing price or values for oil or gas in the same fields. In addition, the department is to determine the reasonable cost of transportation from the point of production to the point of sale and factor this cost into the gross value.

Net Income. Net income is the gross income less the following deductions:

- royalties paid in kind or in value;
- taxes imposed under AS 43.55 (Severance Taxes), AS 43.57 (Conservation Taxes), AS 29.53 and 43.56 (Property Taxes) that are actually paid or incurred;
- direct costs incurred by or for the corporation in operating the lease or property excluding indirect and administrative cost;
- depreciation and expenses incurred from amortization of capitalized interest from investments applicable to the property;
- the amortization of lease acquisition payments and taxes paid or incurred under AS 29.53 and AS 43.56 (property tax) before the lease comes into commercial production;
- interest expense of the corporation not capitalized during construction, that was paid or incurred in connection with property in the State;
- expenses incurred by the corporation after December 31, 1984, related to unsuccessful exploration for oil and gas in the state,

including the acquisition costs of abandoned properties, dry hole costs, and the costs of geological and geophysical exploration related to those abandoned properties;

- general overhead or administrative expense incurred by the corporation attributable to oil and gas exploration or production activities in the state; and
- income from the production of oil and gas from a lease or property that is divided among the regional Native corporations according to provisions of the Alaska Native Claims Settlement Act.

Taxable Income For Oil and Gas Transporters. Taxable income attributed to corporations that transport oil or gas in the state is the amount of operating income reported or required to be reported to the Federal Energy Regulatory Commission. This operating income is adjusted by adding back taxes based on income and deducting interest and general administrative expense attributable to transportation operations in Alaska.

Income Tax Payable. The taxable income, which is gross revenue less allowable deductions, is then multiplied by the applicable tax rate (currently 9.4 percent) and adjusted for any tax credits that may apply.

Change in Severance Tax. House Bill 353 also changes the Oil and Gas Properties Production Tax (AS 43.55). It establishes the percentage of value taxed at 12.25 percent of the value at the point of production for all oil produced after June 30, 1981. Current law establishes the percentage of value for any lease coming into production after June 30, 1981 at 12.25 percent for the first five years of production and at 15 percent on production after the first five years. This change would become effective January 1, 1987.

Comparison of Current Income Tax Law to House Bill 353

Under HB 353 and Alaska's current corporate income tax law (modified formula apportionment), the income of oil and gas producers and transporters in Alaska is subject to a tax rate of 9.4 percent. However, modified formula apportionment and HB 353 offer two distinct methods for identifying the income that is taxable in Alaska.

Modified Formula Apportionment. The assumption underlying formula apportionment is that the sales, extraction and property factors used in the apportionment formula reflect the income generating contribution of those factors.

Critics of modified apportionment claim that this method of allocating income is flawed because these factors are not necessarily related to income generation for oil and gas producers; not only does modified apportionment distort income earned in Alaska, it distorts income tax liability among the taxpayers. Companies with comparable factors of production and income in Alaska could have different tax liabilities depending on their corporate activities worldwide.

The sales factor, which is widely criticized by opponents of modified apportionment, is destination-oriented under the multi-state tax compact. Therefore, in-state sales include only pipeline revenues and in-state product sales. Consequently, sales of North Slope oil which occur outside of the state--and which include virtually all North Slope production--do not attribute taxable income to Alaska. This problem was noted by Jerome Zeifman and Kenneth Ainsworth during the 1977 legislative hearings on petroleum industry taxation.

...the present apportionment formula operates in such a way as to reduce the amount of taxable income attributable to Alaska by corporations which extract non-renewable petroleum resources from the State. This effect occurs largely because the Uniform Division of Income for Tax Purposes Act contains a "destination oriented" sales factor, in which sales of Alaskan oil are generally assigned to Alaska only with respect to petroleum products which are ultimately consumed in the State. As a result, the exportation of petroleum from Alaska has the effect of reducing the tax liability of the extractor of the Alaska petroleum.⁶

As more oil is extracted from Alaska and sold outside of the state, the State's share of the income generated by those sales actually declines.

Opponents of formula apportionment also criticize the property factor as a poor indicator of income-producing activity. These critics claim that property values do not reflect the value of the reserves in the ground; and it is the value of these reserves that will determine profit or loss. Once a lease is acquired, the value of the property is derived from the historical costs incurred in finding and developing the property. For example, in valuing oil-producing property in Alaska, the production facilities in Prudhoe Bay would be included but the value of the oil in the reservoir would not contribute to property values. Because income to Alaska depends upon the ratio of property in Alaska to a corporation's property worldwide, and because other kinds of oil and gas property are valued at close to their full value, undervaluing Alaska property also understates Alaska income.

⁶Jerome Zeifman and Kenneth Ainsworth, The Taxation of the Petroleum Industry Under Alaska's Corporate Income Tax, January 1977, page 3.

The third factor, the extraction factor, has been criticized for similar reasons. Although the factor provides a ratio of extraction in Alaska to extraction worldwide, the factor ignores the value of the oil that is extracted, and it is the value of the oil, as well as quantity, which corresponds to income.

Proponents of modified apportionment claim that although the factors may cause some distortion, the imbalance of activity and income is not as great as critics have claimed. For example, the extraction factor, actually apportions excessive income to Alaska because of the high cost of producing oil in Alaska. Oil that is cheaper to produce is more profitable than higher cost oil. So the State captures excess income because the extraction of that cheaper oil is included in the world-extraction factor. Therefore, supporters of modified apportionment claim that this formula factor does not distort Alaska income.

Proponents of modified apportionment make similar claims concerning the property factor. They disagree that this factor undervalues Alaska property. Because of the higher development costs in Alaska, the value of production property in Alaska is higher than the value of property elsewhere. This apportions more income to Alaska, not less, as opponents of modified apportionment have claimed.

In addition, supporters note that the determination of taxable income is much simpler using formula apportionment than separate accounting. Determining income under separate accounting requires the tracking of many individual transactions to determine sales and revenue information from which income is determined.

Separate Accounting. Separate accounting apportions income to a state by identifying only the specific income producing activities that occur in a state and valuing them to determine taxable income. Proponents of this methodology claim that it apportions income more accurately than the formula method, which estimates income based on economic activity.

For example, supporters of separate accounting point out that should an investment lose money, separate accounting would impose no tax because income apportioned to Alaska would depend only upon economic activity specific to that investment. If a profit is made on the investment, it is taxed; if a loss is incurred, no tax is paid. However, formula apportionment could tax the investment, even in the absence of profit from that investment, so long as the corporation reported a profit from its other economic activities.

Critics claim that separate accounting is unfair because, contrary to the claims of its supporters, it does tax economic activities that occur outside the state. This occurs because many activities related to the actual production of North Slope oil, such as planning and engineering, take place outside of the state and cannot be deducted as expenses in

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calculating Alaska taxable income. These activities contribute to oil production and ultimately add value to the oil; a value that the State of Alaska captures as income tax when the oil is sold for a profit.

Opponents of separate accounting also claim that the method is unfair because it leads to double taxation of income. Other states that use formula apportionment also tax Alaska income as they apportion this income as part of the corporation's total income. Critics claim that HB 353 would subject each dollar earned in Alaska to tax in Alaska as it is earned and again by other states that apply apportionment formulas to determine taxable income.

These critics point out that so long as all states apply similar formulas to apportion income--and most states have adopted this form of income attribution--double taxation is minimized. If Alaska changes from the norm and adopts separate accounting, the balance among the states is upset and all income earned in Alaska will be subject to unfair, double taxation. (Of the five largest petroleum-producing states excluding Alaska, Texas and Wyoming impose no corporate income tax, California taxes corporate income using formula apportionment and Louisiana and Oklahoma use separate accounting.)

It has also been noted that the separate accounting methodology is more sensitive to oil price fluctuations than is modified apportionment. As the price of oil changes, tax collections under separate accounting will vary more than under modified apportionment. In light of the current volatility of oil prices, the adoption of HB 353 would increase the instability of State revenues.

Finally, opponents of separate accounting claim that imposition of this method on oil and gas income exclusively is clearly discriminatory. All other corporate taxpayers have their income determined by some method of formula apportionment. Opponents claim that if separate accounting is used to tax the petroleum industry, it should be used to tax all corporations in Alaska.

As the debate over HB 353 continues, many of the arguments outlined above will be discussed. It should be noted that both the Alaska and United States Supreme Courts were presented with many of these arguments during their consideration of ARCO et al v the State of Alaska. Both courts agreed that separate accounting is an appropriate method of determining oil and gas income earned in Alaska.

CHAPTER TWO

THE EFFECT OF STATE TAX POLICY ON THE DEVELOPMENT OF MARGINAL FIELDS

One of the primary factors in the consideration of separate accounting as a method of taxing oil and gas income earned in the state is the effect this taxation would have on the development of marginal oil fields in Alaska. This chapter will explore this issue by surveying Alaska's current marginal fields, discussing the factors relevant to the decision to develop a marginal field and examining the financing of the oil industry.

ALASKA'S MARGINAL OIL FIELDS

Investments in the exploration for and development of oil and gas fields are made so that the sale of the resources resulting from those activities will earn a profit. Marginal fields are those in which the expected risk-adjusted return from the oil production approximates the minimal return required to provide sufficient incentive for an oil company to develop an oil field. The following North Slope oil fields are generally identified as economically marginal.

Prudhoe Bay Enhanced Oil Recovery

Efforts are currently underway at the Prudhoe Bay field to expand recoverable reserves through a miscible gas recovery project. This project calls for alternate injections of water and natural gas into the Prudhoe Bay field to coax additional oil to the surface. The project, expected to begin in 1987 and last for approximately 10 years, will boost recovery from the Prudhoe Bay field by 115 million barrels. The cost of the project is estimated to be approximately \$750 million.

Lisburne

The Lisburne reservoir lies under the Sadlerochit reservoir (which is the main reservoir in the Prudhoe Bay field). Current estimates are that approximately 3 billion barrels of oil are in the Lisburne reservoir but only 15 percent (495 million barrels) are recoverable because of the rock formations that have trapped the oil. Production is expected to begin in 1987, reach a peak production rate of 100,000 barrels per day in 1995 and decline thereafter. Total development costs are projected to be about \$2 billion. Interest in the field is split between ARCO (40 percent), Exxon (40 percent) and Sohio (20 percent).

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Milne Point

With reserves of less than 100 million barrels, the Milne Point reservoir is small by North Slope standards. Peak production is expected to be 30 thousand barrels per day in 1990, tapering off to 10,000 barrels per day by 1997. Total development costs are estimated to be \$800 million. Production from the first phase of development has already begun. The primary owner and operator of the field is Conoco.

Endicott

The Endicott reservoir contains approximately one billion barrels of oil, of which 350 million barrels are recoverable. Sohio is currently constructing two offshore gravel islands from which production will occur. Total development costs are expected to be two billion dollars. Production is to begin in 1988, with a peak flow of 100,000 barrels per day expected to be maintained for four years. Leases in the Endicott development are held by Sohio, ARCO, Exxon, Alaska Union, Amoco, Doyon Ltd., Cook Inlet Regional Corporation, NANA and Sealaska.

West Sak

West Sak is a huge reservoir with possibly 15-25 billion barrels of oil in place. However, because the oil is found in sand deposits, it is very difficult and expensive to extract. ARCO has initiated a pilot project using hot water injection to separate the oil from the sands. The success of this operation will determine to a large extent the feasibility of future development. Although it is too early to predict future production, the Oil and Gas Journal reports that 100,000 to 200,000 barrels per day is a likely production target.⁷ Depending on development costs and economic conditions, total yield from the reservoir could reach 750 million barrels in the first phase, with production increasing as the field is developed. If feasible, commercial production could begin by 1990.

Gwyder Bay

This reservoir, located north of Prudhoe Bay, contains reserves of about 30 million barrels. Currently, production does not appear to be economically feasible. However, if production does prove to be feasible, 10,000 barrels per day could be produced by the late 1980s.

⁷Oil and Gas Journal, June 25, 1984, page 25.

Flaxman/Point Thompson

The University of Alaska, Institute of Social and Economic Research reports that as much as 600 million barrels of oil may be recoverable from this field located east of Prudhoe Bay.⁸ However, more than one-half of this amount is gas condensate which, at this point, does not appear to be commercially feasible to develop. Oil production of 300 million barrels could begin by 1990, with a peak flow of 80,000 barrels per day.

Seal Island

The Seal Island offshore reserve was discovered by Shell in 1984. Results of recent drilling indicate that the field is larger than the initial projection of 300 million barrels of recoverable oil. The reserve lies within an area of jurisdictional dispute between the federal and State governments. It is unknown at this time if this reserve can be commercially developed.

MARGINAL FIELDS IN PERSPECTIVE

Although a variety of marginal fields could potentially produce oil from the North Slope, their contribution to future North Slope production must be put into perspective. At this time, only four of the marginal projects, Prudhoe Bay Enhanced Oil Recovery (EOR), Lisburne, Endicott and Milne Point are being developed for near-term production. Based on technological advances and favorable economic conditions, West Sak could potentially contribute considerable quantities of oil to North Slope output. The commercial development of Gwyder Bay, Flaxman/Point Thompson and Seal Island are doubtful, based on current conditions.

Table 1 shows the yearly contribution that Lisburne, Endicott, Milne Point, Prudhoe Bay EOR and currently unspecified production are expected to make to total North Slope oil production between 1986 and 2010. Based on the Department of Natural Resources most likely case of expected oil production, cumulative North Slope oil production is projected to be over 7.2 billion barrels of oil. Of this total, 1.7 billion barrels (21 percent) will be contributed by the marginal fields. It should be noted that some observers feel that unspecified production should be omitted from Table 1 because this production is speculative, especially considering current economic conditions. If unspecified production

⁸Alaska North Slope Oil Production and Revenue Projections, University of Alaska, Institute of Social and Economic Research (ISER), February 1985, Volume XXII, Number 1, page 4.

projections were to be lowered or eliminated, the contribution that marginal fields are expected to make to cumulative production would be significantly lessened.

The largest contribution to total North Slope production from marginal fields (32-33 percent) occurs from 1995 to 2001, and steadily declines thereafter. Yet, from 1995 to 2001, the Prudhoe Bay and Kuparuk fields are expected to produce twice the amount of oil produced by the marginal fields. In 1993, the year that marginal fields are projected to produce their highest annual volumes (approximately 137 million barrels), Kuparuk and Prudhoe Bay are expected to produce over 317 million barrels, or 2.3 times the marginal field volume.

Figure 1 indicates that North Slope oil production is expected to decline steadily. This occurs because the incremental production from the marginal fields is not sufficient to offset the declines in production from the Prudhoe Bay and Kuparuk fields. Total North Slope production for the four years of highest marginal field production averages only 45 percent of total projected 1986 North Slope production.

The marginal fields cannot offset the decline in production from Prudhoe Bay and Kuparuk simply because the marginal fields are so small in relation to those two fields. Figure 2 illustrates the relative size of the North Slope fields as measured by expected production through the year 2010. The dominance of Prudhoe Bay is evident; it is one of the largest oil fields in the world. Kuparuk, although dwarfed by Prudhoe Bay, is one of the largest fields in North America. It should be remembered that although West Sak contains enormous reserves, commercial production is still uncertain.

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Source: Historic and Projected Oil and Gas Consumption, Alaska Department of Natural Resources, Division of Oil and Gas, Jan.1986, p.11.
Prudhoe Bay enhanced oil recovery projections from personal communication with Division of Oil and Gas.
Prepared by the House Research Agency, January 1986

FIGURE 1

Projected North Slope Production

DNR Most Likely Case

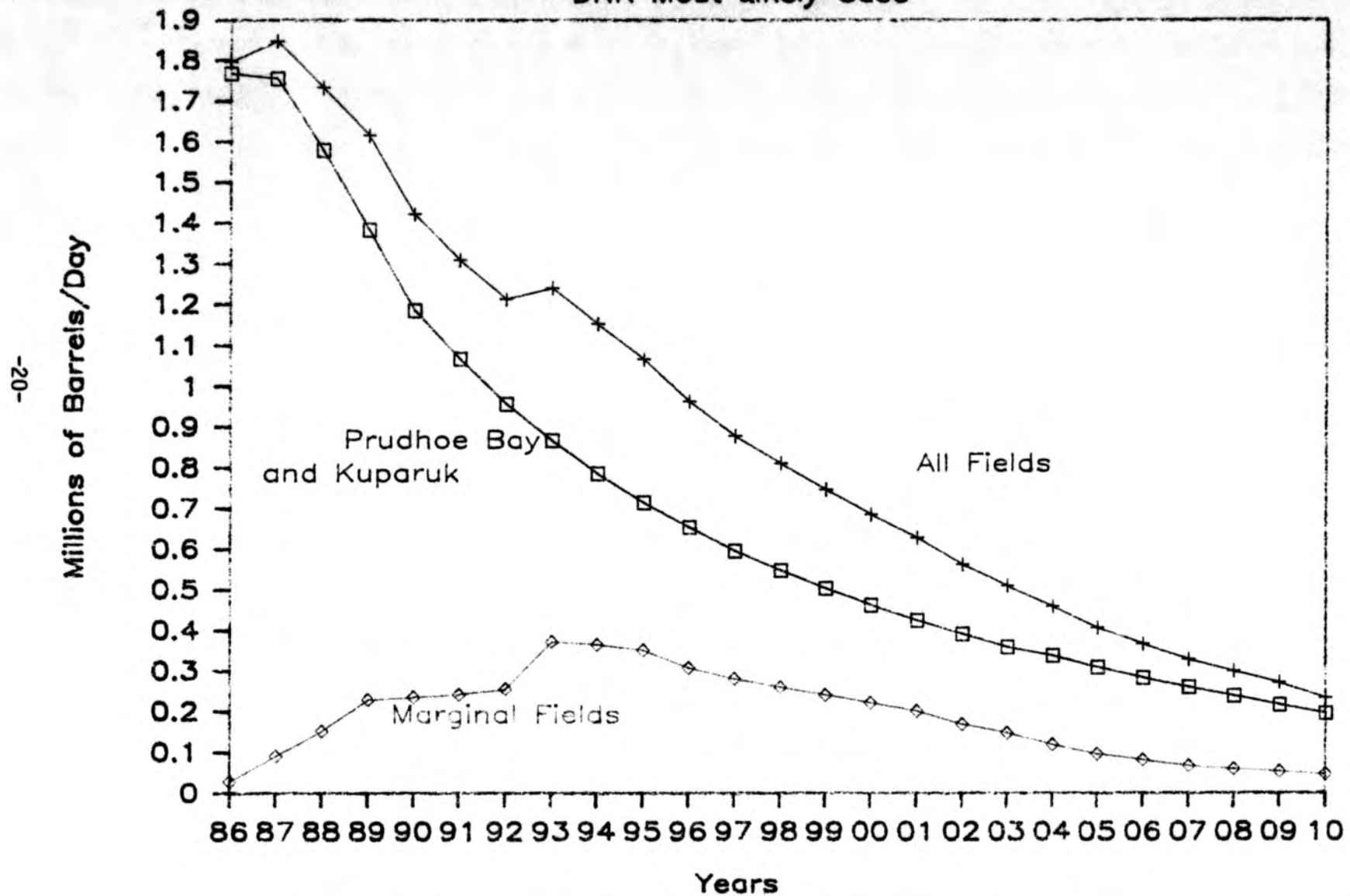
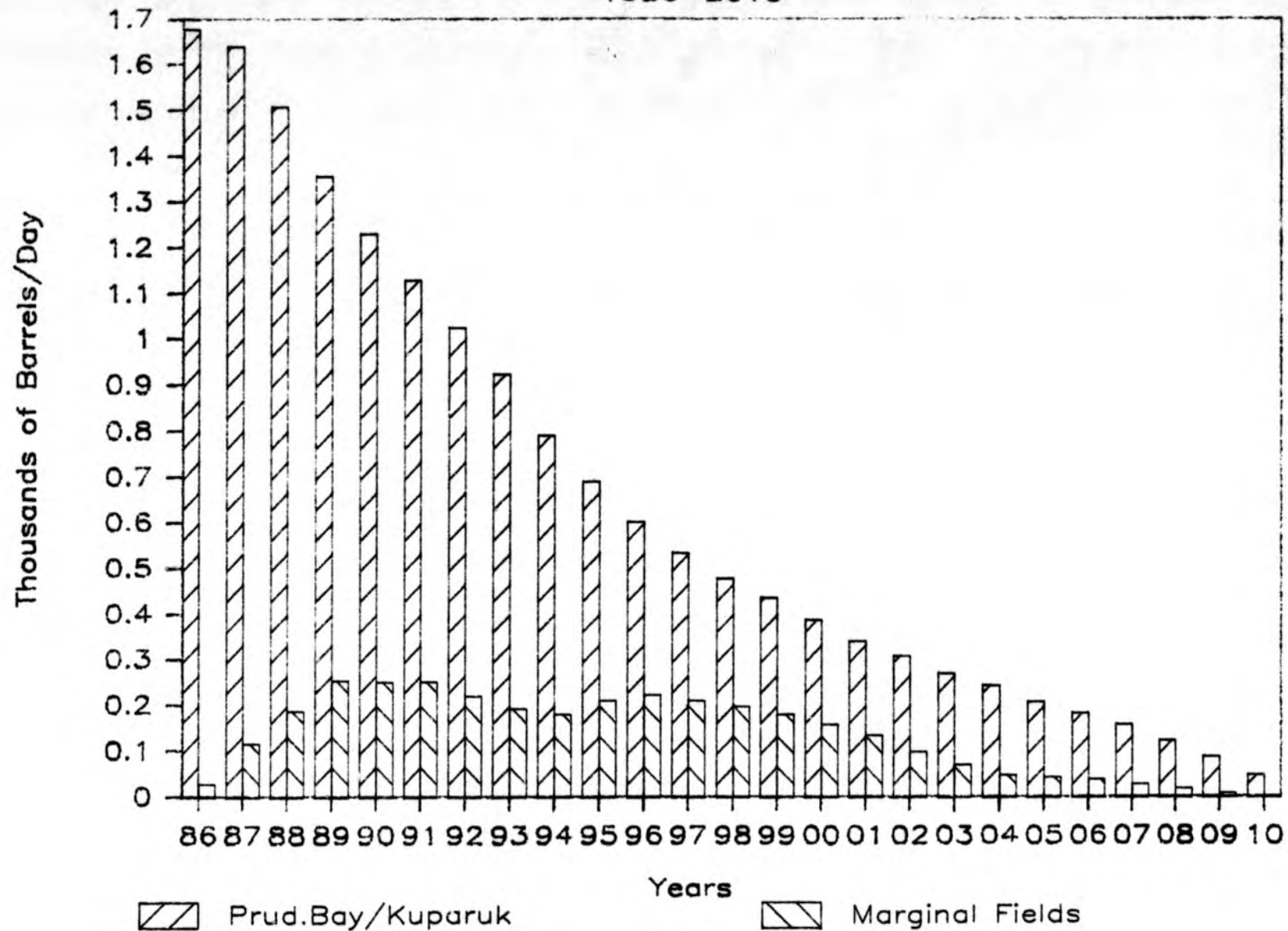


FIGURE 2

Projected N. S. Oil Production 1986-2010



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THE EFFECT OF TAXATION ON DECISIONS TO EXPLORE AND DEVELOP AN OIL FIELD

In this section, we examine the effect that taxation has on the incentive for oil companies to find, develop and produce from oil fields. First, we will examine the effect of income taxes on these decisions assuming that a corporation has unlimited capital and therefore can invest in any project that is reasonably profitable. Then we will examine the effect of income taxation in the real world of limited capital.

Exploration Decisions--Unlimited Capital

The amount of money that a petroleum company is willing to spend on exploration depends upon the probability that the resulting development will be profitable. The probability of profit depends not only upon the market price of oil, but also on the share of revenue that is retained by the industry and the expected size of the field. At any given levels of oil prices and development and production costs, economic factors that decrease the share of net revenue retained by the industry (higher income taxes, royalties or severance taxes) will decrease the per barrel rate of return on investment in a given field. As the per barrel return decreases, the field size required to make the development economically feasible becomes larger. As the required field size increases, the probability of finding such a field decreases, discouraging exploration except in areas of exceptional promise.

Although all taxes influence the decision to explore, the difference in impact of income taxes and excise taxes (taxes levied on the value of production) is substantial. The University of Alaska, Institute of Social and Economic Research (ISER) has concluded that excise taxes negatively influence the decision to explore to a greater degree than do income taxes (net profit shares):

...net profit shares have roughly the same impact on the value of exploration property as a royalty and excise tax share that is somewhat less than one-half as large. In other words, a combination of royalty and excise taxation that added to 25 percent of the gross value of production would have around the same value to producers as if the same area were leased with a 60 percent net profit share and no royalty or excise tax.⁹

⁹Alaska Petroleum Revenues, The Influence of Federal Policy, University of Alaska, Institute of Social and Economic Research, October 1984, page 94.

Development Decisions--Unlimited Capital

If a field is to be profitably developed, it must be of sufficient size that the expected revenue from the field exceeds the expected development costs. State taxation policies affect the revenue stream and therefore influence the development decision by affecting the minimum economic field size.

At any given price of oil, the higher the excise tax rate--this would include severance tax and royalties--the larger the oil field must be to be developed economically. Based on North Slope economic conditions, ISER has estimated minimum viable field size to range from 300 million barrels of recoverable oil at a zero percent excise tax to 1.5 billion barrels at a 30 percent excise share, assuming a real wellhead price for oil of \$15 per barrel. If the price is assumed to be \$20 per barrel, the minimum field size ranges from 100 million barrels at a zero percent excise tax share to 500 million barrels at a 30 percent excise share.¹⁰ (The State excise share has varied between 20 and 30 percent.)

Income taxes (net profit shares) do not have the same effect as severance taxes and royalties. The Institute of Social and Economic Research notes the following concerning these taxes:

At the margin of development, there are no net profits to share with net profit share lease payments, even though there may be a substantial royalty and excise tax liability. Under the assumption of low risks to development investments, net profit shares do not affect the minimum economic field sizes, just as they leave unaffected the margin of production.¹¹

However, under conditions of great risk, income taxes may influence the margin of development to some degree. Income taxes require the petroleum company to share profits (through income taxes) if the development proves to be profitable. However, if the development proves to be unprofitable, the oil company must absorb the loss. This assumption of risk increases the minimum field size required for development to proceed.

Production Decisions--Unlimited Capital

The production decision occurs after a field has been developed and is producing. The producer must decide at what point to stop production. (This is also called the time of abandonment.) Production will stop at

¹⁰Alaska Petroleum Revenues, page 89.

¹¹Alaska Petroleum Revenues, page 91.

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the point in time that the value of the oil produced from the field is less than the cost of producing the oil. This decision is not influenced by the development costs that have already been spent on the field. These previous expenditures are known as sunk costs because that money is spent and cannot be recouped.

The production decision depends upon current and expected economic factors, some of which the State controls. Although the State has no control over the most important factor, the price of oil, it does control State taxation policies. The University of Alaska, Institute of Social and Economic Research concluded that although severance tax and royalties have the effect of encouraging premature abandonment of oil fields, income taxes do not. This is because royalties and severance taxes are levied on the gross revenues or gross production from the field. These taxes must be paid regardless of the profitability of the field. Income taxes are levied only if the field is making a profit. The ISER study concludes:

Net profit shares, unlike excise shares, do not affect the margin of production in any way. Since there is no income to share at the time of abandonment, neither the landowner nor the producer would wish to change the margin of production.¹²

Economic theory suggests that income taxes affect exploration decisions but have little or no impact on production or development decisions, assuming a company has unlimited capital. In the case of development and production decisions, income taxes are irrelevant because there is no profit to be taxed at these decision points. So long as a company has unlimited capital, it will continue to invest in all projects that return a reasonable profit. However, in the real world, companies are faced with capital constraints that are a major factor in investment decisions.

Decisions When Capital is Limited

Corporations make investment decisions by determining the rate of return they expect to make on a project, comparing that return with the rate of return from other potential investment projects and choosing the projects that best fit their capital availability.

In this decision-making process, income taxes affect decisions by decreasing the net cash flow of projects that are heavily taxed. A reduced net cash flow makes a project less desirable compared to projects with higher rates of after-tax return. Also, as money is diverted from the company to pay taxes, capital information--and therefore, future

¹²Alaska Petroleum Revenues, page 87.

investment options--is limited. Corporations cannot invest in every project that is profitable; they must choose the projects that appear to be most profitable.

In summary, State income taxes could negatively effect a decision to invest in Alaska by lowering the expected rate of return and making the project less competitive with other investment opportunities. Assuming that State income taxes of some kind are going to be imposed, determining the income tax that is least detrimental to decisions becomes an important issue.

ECONOMIC EFFECT: HB 353 AND FORMULA APPORTIONMENT

Marginal Fields

Earlier in this chapter, we defined a marginal oil field as one in which the projected risk-adjusted return on the investment approximates the minimal return required to provide sufficient incentive to proceed with the development of the oil field. Economic theory suggests that House Bill 353 would have less negative effect than modified apportionment on marginal field investment decisions because, under separate accounting, income taxes are directly related to the profit made from an investment.¹³ Apportionment, however, does not directly tax income earned in Alaska; it taxes worldwide income in proportion to the company's economic activity in Alaska. Consequently, apportionment could cause a petroleum company to pay Alaska income taxes that are not based on the actual profitability of a field.

This asymmetry of taxation and profit under modified apportionment could cause higher taxes to be levied against marginal fields than the profits from the marginal fields warrant. These higher taxes reduce net cash flow, which in turn reduces the rate of return from the investment and makes the development project less competitive when rated against other potential project options the company may have. In addition, the reduced cash flow may limit the industry's financing of development of other fields in the future.

¹³Designation of "marginal field" is based on projected risk-adjusted rate of return. This is the rate of return upon which development decisions are based. After the development decision has been made and production begins, risk is no longer a factor in the rate of return on the investment. The actual rate of return on a field may be above the average corporate rate of return on all oil and gas related investments resulting in higher taxes under HB 353 than under current law. In our analysis, all the marginal fields were taxed more heavily under current law than HB 353.

EFFECT OF STATE TAX POLICY

A provision of HB 353 would lower the severance tax to 12.25 percent beginning in 1987. We have seen that severance taxes, because they are levied on production rather than profit, can deter development. Lowering the severance tax could help to mitigate some of these detrimental effects.

It must be noted however that highly profitable investments will be taxed more heavily under HB 353 than under modified apportionment. If an Alaska investment has a higher rate of return than the average of the company's worldwide investments, separate accounting will tax the earnings of the Alaska investment more heavily than would the modified apportionment formula. However, if the Alaska investment is less profitable than the average of the worldwide investments, current law would impose a higher tax liability than HB 353.¹⁴ Several models project higher income tax revenues under HB 353 than under current law. The bulk of those collections are attributable to the highly profitable Prudhoe Bay and Kuparuk fields.

Nonmarginal Fields

Although HB 353 may be less detrimental than current law to projects with lower than average profitability, it may have a greater impact than current law on decisions affecting the development of more profitable projects. Because of capital constraints, these nonmarginal projects still have to compete with other investment opportunities. Higher income taxes imposed by separate accounting will make them less attractive relative to projects taxed at lower rates. As one oil industry representative noted, oil companies are not in the marginal field oil business and State income tax law should be evaluated based on its investment impact on all projects, not just the impact on marginally profitable ones.

However, some economists disagree that oil companies are not in the marginal oil field business. These economists argue that oil companies may not be in the marginal oil field business during exploration, but certainly are in the marginal business if the development of those marginal fields can earn an acceptable rate of return.

¹⁴The previous two statements are true but need clarification. It would be more accurate to say that if the earnings per unit of sales, property and production is higher in Alaska than the average worldwide, income taxes would be higher under HB 353 than under formula apportionment. If the average per units of those factors were lower in Alaska than the average worldwide, formula apportionment would impose a higher tax liability.

Opponents of HB 353 note that proposals to modify the tax laws are detrimental to petroleum investment in Alaska because they increase investment risk. We mentioned that investment projects are ranked based on their projected rate of return over the life of the project. If the structure upon which forecasts are based is subject to change, increased risk must be factored into the forecast. Increased risk raises potential costs and lowers projected return. Critics of HB 353 argue that a change in taxation policy will mean Alaska projects will incur additional risk in the eyes of investment decision makers and become less attractive when ranked with other projects.

Proponents of HB 353 point out that it is uncertainty over changes in tax law and not the change itself that increases risk. Therefore, adopting HB 353 does not necessarily mean additional risk to investment projects. In addition, they acknowledge that although State tax laws have changed several times in the past few years, the federal tax code is changed every year and oil companies adapt to those changes.

Capital Accumulation and Income Taxes

As mentioned earlier, income taxes reduce the amount of profit corporations retain from their economic activities. It is this profit (retained earnings) that accounts either directly or indirectly for the capital used for future investments.

Direct investments are outflows of cash from retained earnings. Indirectly, retained earnings account for capital formation through stock dividends and improved cash flows. Higher dividends make it easier to raise capital through stock sales while improved cash flow helps a corporation secure commercial loans at lower interest rates. Because income taxes affect the ability of a corporation to raise the capital needed to implement investment decisions, it is necessary to examine the additional income tax burden that HB 353 would place on the oil industry and discuss the impact of this burden on investment decisions.

Tax Collection Under HB 353. Table 2 projects petroleum companies' income and severance tax payments under HB 353 and Alaska's current modified apportionment law assuming the Department of Revenue's (DOR) June 1985 mean price forecast. As the table indicates, an additional \$1.6 billion dollars (1985 value) would be collected if HB 353 were in effect between 1986 and 2005. If oil prices are significantly lower than the forecast, we would expect less difference between income tax collections under HB 353 and current law. The difference in tax collections under the two laws is primarily from the more profitable Prudhoe Bay and Kuparuk fields. Figure 3 compares projected annual collections from current law and HB 353 while Figure 4 shows additional collections under HB 353.

EFFECT OF STATE TAX POLICY

Table 2
Projected State Income Tax and Severance Tax Collections
Current Law and HB 353
1986-2005
(Millions of 1985 Dollars)

Year	Inc. Tax Collect. Cur. Law	Inc. Tax Collect. HB 353	Sev. Tax Collect. Cur. Law	Sev. Tax Collect. HB 353	Total Collect. Cur. Law	Total Collect. HB 353	Additional Collection Under 353
1986	219.93	673.30	1161.76	1161.76	1381.69	1835.05	453.37
1987	223.16	561.25	992.05	905.78	1215.21	1467.02	251.81
1988	219.47	499.45	731.24	603.99	950.72	1103.44	152.72
1989	211.73	461.39	665.95	554.60	877.69	1015.99	138.30
1990	202.86	414.75	608.00	511.46	810.86	926.21	115.35
1991	191.29	362.08	537.88	458.84	729.17	820.92	91.76
1992	179.98	338.28	518.40	441.93	698.38	780.20	81.82
1993	167.34	319.41	492.48	417.23	659.82	736.64	76.82
1994	153.26	280.91	427.75	363.96	581.02	644.87	63.86
1995	139.58	246.90	386.10	327.54	525.68	574.44	48.76
1996	126.95	214.01	335.45	283.87	462.40	497.88	35.48
1997	115.50	187.46	294.91	249.61	410.40	437.08	26.68
1998	104.84	165.34	258.65	219.53	363.49	384.87	21.38
1999	95.33	146.22	227.83	194.17	323.15	340.39	17.23
2000	86.20	131.70	198.37	169.01	284.57	300.72	16.15
2001	76.79	109.66	160.87	139.09	237.66	248.75	11.09
2002	67.85	85.25	129.08	111.89	196.93	197.14	0.21
2003	60.19	64.26	105.50	92.33	165.70	156.59	-9.10
2004	53.29	50.18	87.44	78.40	140.73	128.58	-12.15
2005	46.79	36.29	73.65	67.16	120.43	103.44	-16.99
	2,742.34	5,348.09	8,393.35	7,352.14	11,135.70	12,700.23	1,564.54

Source Memorandum of October 31, 1985 from Vince Wright to Revenue Commissioner Nordale, table 1.
Assumes Department of Revenue mean case oil price forecast.
Deflator based on inflation projections in Department of Revenue "Revenue Sources", January 1986.
Prepared by the House Research Agency, January 1986

FIGURE 3

Income and Severance Tax Collections

Current Law and HB 353

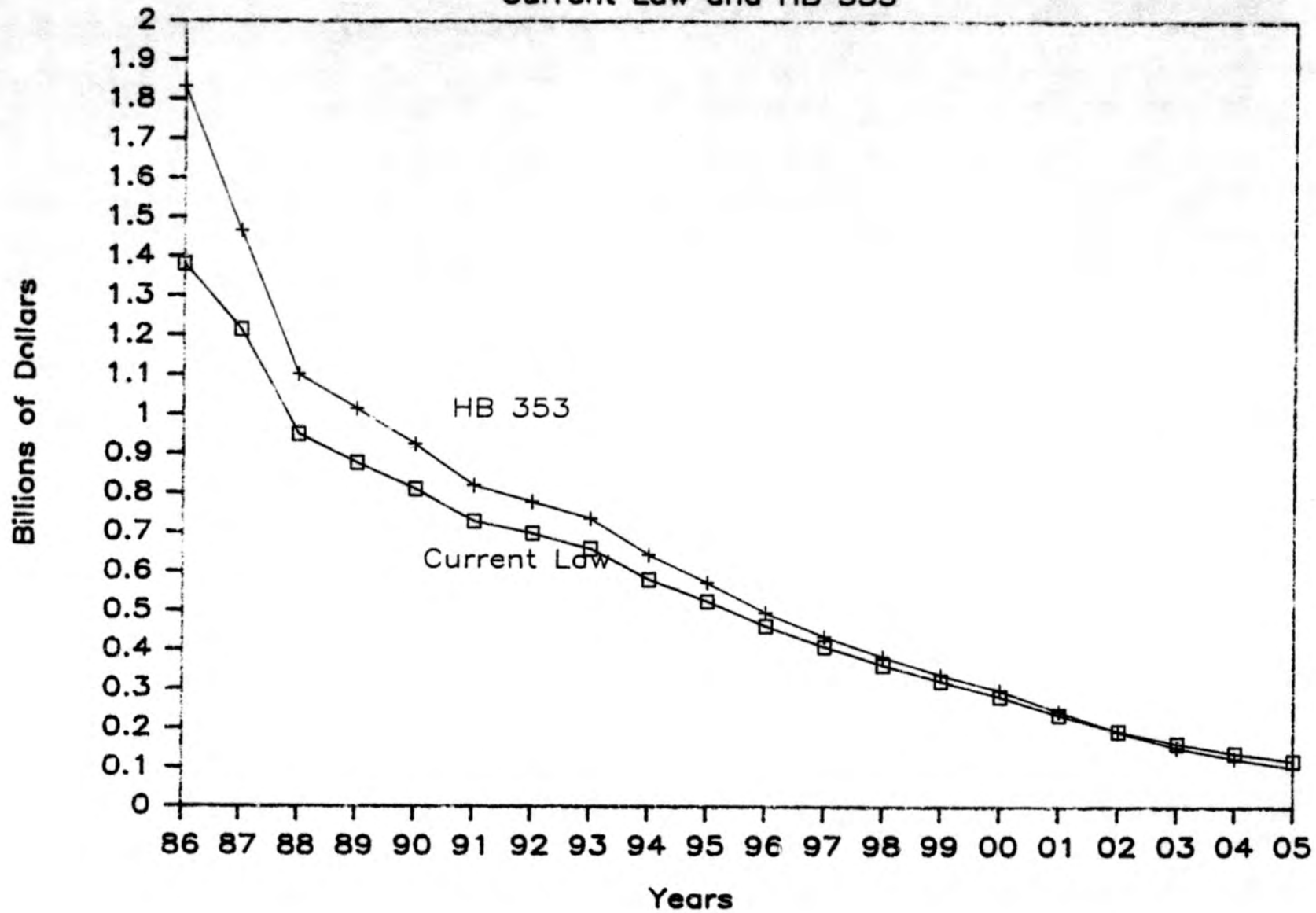


FIGURE 4

Additional Income Tax Collections

Impact of HB 353: 1986-2005

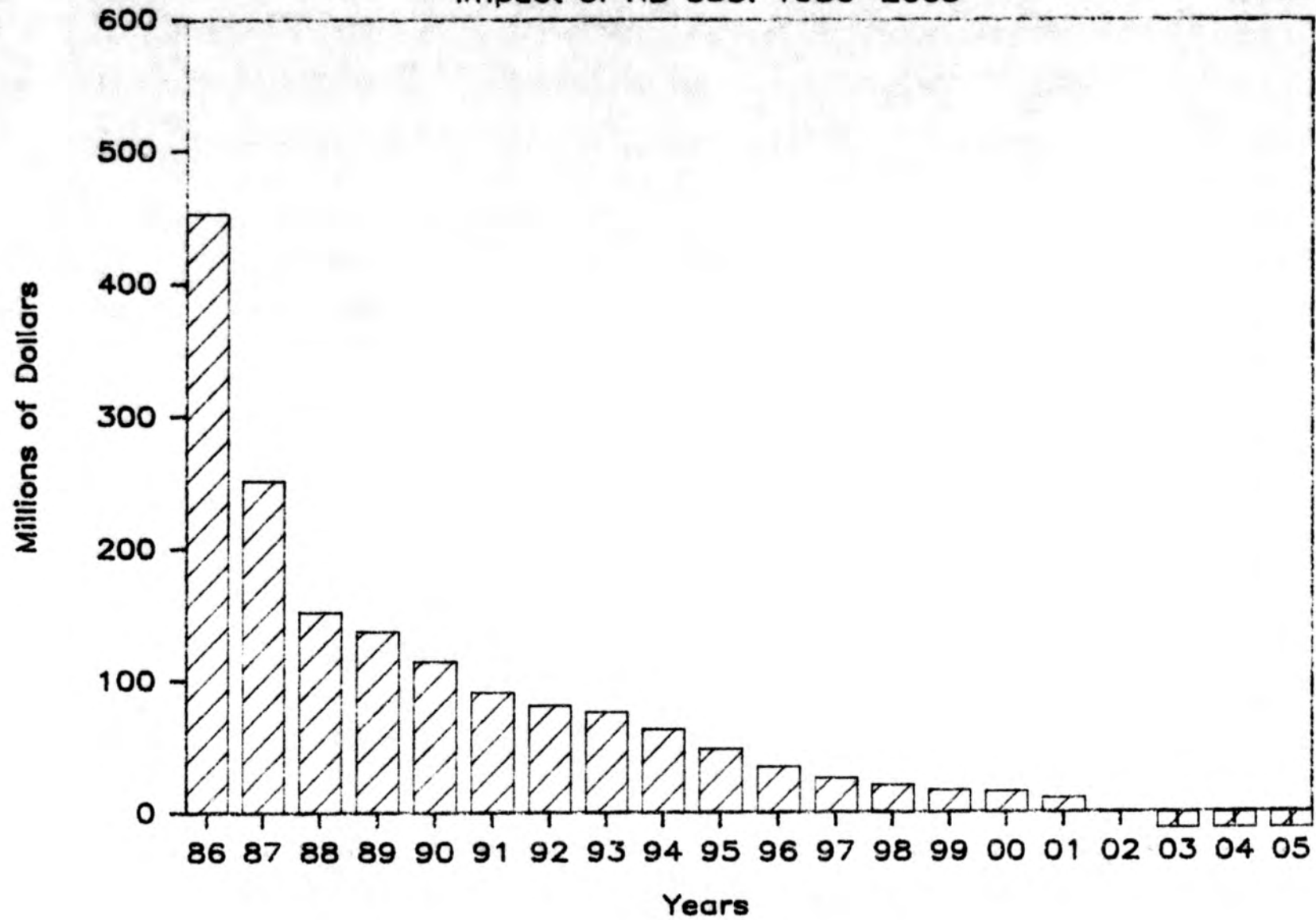


Table 2 indicates that income tax collections under both tax systems decline steadily throughout the period of analysis. Note, however, that the collections gap between the two tax laws narrows over time. Beyond the year 2003, collections under current law are projected to exceed collections under HB 353. This occurs as production from the fields declines over time, reducing profitability.

Because taxes under separate accounting are directly dependent on Alaska profitability, tax collections under separate accounting are much more sensitive to changes in the price of oil than are collections from modified apportionment. As prices fall, tax collections from separate accounting would decline at a faster rate than collections under modified apportionment. As prices rise, collections under separate accounting increase more rapidly than under modified apportionment.

This volatility of collections under separate accounting was examined in the Department of Revenue's review of HB 353. Under modified apportionment, 1985-2005 cumulative revenues under the 30 percent Department Revenue price forecast were projected to be 5.04 percent lower than collections under the mean forecast, while collections under the 70 percent price forecast were projected to be 16.94 percent higher than the mean forecast. Projected collections under HB 353 during the same period deviated 14.52 percent and 30.83 percent from the mean for the 30 percent and 70 percent price forecasts.¹⁵

Opponents of the tax changes proposed by HB 353 also claim that although the Prudhoe Bay and Kuparuk fields are profitable, it is this profit that will provide capital for future exploration and development activities. They claim that the additional collections under HB 353 would reduce the amount of capital that petroleum companies would have to reinvest in exploration and development of other oil fields. To examine this issue, it is necessary to examine some investment practices common to the petroleum industry.

Financing the Petroleum Industry

This report will not provide a detailed explanation of the corporate finances of the petroleum industry. However, we hope to present information that will help lawmakers assess the impact of higher tax collections on investments in Alaska. We begin with a look at the source of petroleum corporations' investment capital and then examine the factors involved in investment decisions and the implications the decision process has for Alaska.

¹⁵Department of Revenue analysis of HB 353, memorandum from Vince Wright to Commissioner Nordale, October 31, 1985, page 49.

EFFECT OF STATE TAX POLICY

Sources of Capital. Three sources of capital are generally available to corporations: proceeds from stock sales, proceeds from bond sales or commercial loans and cash generated from operations. Table 3 provides a summary of the sources of capital for a group of worldwide petroleum companies during 1983 and 1984. As the table indicates, internal operations was the primary source of capital during these two years, supplying 80 and 75 percent of available capital, respectively. Changes in income tax directly (and inversely) affect the funds available from internal operations because the cash generated from operations is the retained earnings of the corporation after all costs and taxes have been paid.

TABLE 3
Sources of Capital for Selected Petroleum Companies 1983-1984

<u>Source</u>	<u>Billions of Dollars</u>		<u>Percent</u>	
	<u>1983</u>	<u>1984</u>	<u>1983</u>	<u>1984</u>
Net Income	\$20.3	\$19.3	31	27
Depreciation	26.2	29.0	40	41
Other non-cash charges	<u>5.9</u>	<u>5.0</u>	<u>9</u>	<u>7</u>
Total from Operations	\$52.4	\$53.3	80	75
Total from Capital Markets	\$ 7.3	\$17.8	11	25
Other	<u>5.8</u>	<u>0.0</u>	<u>9</u>	<u>0</u>
Total	\$65.6	\$71.1	100	100

Source: Financial Analysis of a Group of Petroleum Companies 1984, Chase Manhattan Bank Global Petroleum Division, July 1985, page 13.

* * * * *

Funds from the capital markets (sale of stocks and bonds) accounted for 11 percent of funds in 1983 and 25 percent in 1984. According to the Global Petroleum Division of Chase Manhattan Bank, this increase in reliance on debt was primarily related to the need for funds to finance mergers and acquisitions.¹⁶

Future sources of capital are expected to follow a similar pattern. Capital expenditures are expected to reach \$1.05 trillion dollars (in

¹⁶Financial Analysis of a Group of Petroleum Companies 1984, Chase Manhattan Bank Global Petroleum Division, July 1985, page 15.

1980 dollars) for the years 1981 through 2000. Eighty to eighty-five percent of this investment capital is expected to be provided through internal sources.¹⁷

Uses of Capital. Table 4 summarizes the uses of capital in 1983 and 1984 by a group of petroleum companies. In both years, the largest use of capital was for capital expenditures, 68.4 percent in 1983 and 51.7 percent in 1984. Within this category of capital expenditures, exploration and drilling used the most funds, consuming 46.4 and 37.02 percent of the total capital used in 1983 and 1984 respectively. It is this type of capital expenditure that would be most likely to occur in Alaska.¹⁸

TABLE 4
Uses of Capital by Selected Petroleum Companies 1983-1984

<u>Uses</u>	<u>Billions of Dollars</u>		<u>Percent</u>	
	<u>1983</u>	<u>1984</u>	<u>1983</u>	<u>1984</u>
Exploration & Production	\$29.0	\$31.0	46.4	37.0
Marketing	2.6	3.1	4.2	3.7
Processing Facilities	6.3	5.0	10.1	6.0
Transportation	0.9	0.9	1.4	1.0
Other	4.0	3.3	6.4	4.0
Total Capital Expenditures	\$42.7	\$43.2	68.4%	51.7%
Dividends	9.3	9.7	14.9	11.6
Repayment of Debt	6.1	8.3	9.8	10.0
Retirement of Stock	1.2	5.6	1.9	6.7
Investment in Companies	2.7	16.0	4.3	19.2
Other	0.5	0.6	0.8	1.0
Total	\$62.5	\$83.4	100.0	100.0

Source: Financial Analysis of a Group of Petroleum Companies 1984, pages 15-17.

¹⁷Uwe H. Jahnke and P. Gordon Webb, "A Bankers View of Petroleum Funding," Petroleum Economist, October 1983.

¹⁸During the course of our research on this project, several individuals suggested that we document previous oil industry capital and exploration expenditures in Alaska and compare these to net revenues earned by oil companies in Alaska during the same period. This comparison would provide a ratio of oil industry investment to oil industry profit in Alaska. However, it is very difficult to relate investments to profits because of the uncertainty of the timing of the cash flows.

EFFECT OF STATE TAX POLICY

In 1983, the largest use of capital--other than capital expenditures--was for dividend payments, which consumed 14.88 percent of total funds. In 1984, investments in other companies--totalling 16 percent of expended capital--was the largest consumer of funds other than capital investments.

Previous Capital Expenditures. Table 5 provides a summary of capital and exploration expenditures in the United States, by use, for selected years 1974 through 1984. It can be seen that expenditures in the United States decreased significantly in 1983 and 1984 after showing steady increases during the previous ten years. Oil industry analysts point to the drop in the price of oil for this investment decline. The Global Petroleum Division of the Chase Manhattan Bank notes:

Several factors contributed to the lower amount of capital spending, the most important being lower crude oil and product prices and reduced refining profit margins. These served to reduce cash flow for most industry participants and also contributed to the development of more bearish expectations concerning future petroleum prices and profitability.¹⁹

Oil industry representatives also argue that during times of low expected earnings, capital availability becomes a more important factor in investment decisions than during times of higher oil prices. This occurs because as earnings fall, reducing available capital, capital rationing may exclude some projects with acceptable rates of return.

However, some petroleum industry analysts do not cite capital shortages as a reason for the decline in capital investment in 1983 and 1984. Mr. David Behling, writing in the Oil and Gas Journal, concluded the following concerning capital availability:

This has not been an important factor for most companies in the Chase group, however, either in 1983 or 1984. Profitability and cash flow of these companies generally increased in both years. Further, most in the group have had continued access to commercial bank, insurance and other credit sources. However, several of the group currently are repurchasing outstanding equity and paying down long term debt rather than expanding their asset base. This is by choice and not because of any availability constraint on external finance.²⁰

¹⁹Capital Investments of the World Petroleum Industry, Chase Manhattan Bank Global Petroleum Division, September 1985, page 5.

²⁰David Behling, "Capital Needs and Availability for World Oil," Oil and Gas Journal, November 12, 1984.

TABLE 5
CAPITAL AND EXPLORATION EXPENDITURES IN THE UNITED STATES
Selected Years 1974-1984
(millions of dollars)

<u>Activity</u>	<u>1974</u>	<u>1976</u>	<u>1978</u>	<u>1980</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Crude Oil and Natural Gas Production	\$11,225	\$13,135	\$17,325	\$32,350	\$50,900	\$36,625	\$37,375
Natural Gas Liquid Plants	225	325	325	750	1,375	650	675
Pipe Lines	1,400	3,625	750	1,550	775	625	700
Tankers	200	275	600	600	525	375	275
Refineries	1,775	1,575	1,750	3,250	5,350	3,750	3,025
Chemical Plants	825	2,200	2,300	2,400	2,200	1,350	1,175
Marketing	650	625	950	1,300	1,400	1,375	1,900
Other	<u>325</u>	<u>325</u>	<u>465</u>	<u>700</u>	<u>1,025</u>	<u>850</u>	<u>725</u>
Total Capital Expenditures	\$16,625	\$22,085	\$24,475	\$42,900	\$63,550	\$45,600	\$45,850
Geological & Geophysical Expense & Lease Rents	<u>1,130</u>	<u>1,375</u>	<u>1,975</u>	<u>3,850</u>	<u>4,500</u>	<u>4,250</u>	<u>4,075</u>
Combined Total	\$17,755	\$23,460	\$26,450	\$46,750	\$68,050	\$49,850	\$49,925

Source: Capital Investments of the World Petroleum Industry, Chase Manhattan Bank Global Petroleum Division, September 1985.

EFFECT OF STATE TAX POLICY

Behling goes on to project the capital needs and capital availability of the oil industry between the years 1983 and 1990:

...we foresee total capital expenditures for the industry growing only about 6 percent annually between 1983 and 1990. This is a little higher than expected U.S. inflation. With much lower growth expected in capital needs, financing availability should not prove to be a major problem, particularly for the larger multinational companies.²¹

Although cash from operations--which would include savings from lower income taxes--is the primary source of investment capital for petroleum industry investments, some investment analysts think that the price of oil and earnings expectations will be more important factors in future investment decisions than capital availability. They foresee: 1) reduced investment requirements in the future due to lower future earnings expectations; and 2) sufficient available capital to meet these investment requirements.

Economic Benefits and Taxation

Using their mean case price forecast, the Alaska Department of Revenue has projected that adoption of HB 353 in 1986 would result in additional State tax collections of \$1.6 billion (in 1985 value) between 1986 and 2005.²² If HB 353 is not adopted, the petroleum industry will have this money available for their investment opportunities.

Clearly, the impact to the State's economy will be different depending upon whether HB 353 or the current law is in effect. Below, we present several scenarios illustrating possible disposition of this \$1.6 billion. Although the scenarios are presented as mutually exclusive events, in reality this would not be the case. We present them this way to better illustrate each scenario's potential impact to the State's economy.

If the State adopts HB 353 and collects this additional revenue, the funds become unrestricted general funds and can be appropriated at the discretion of the legislature. These additional revenues impact the state's economy through direct employment as well as through secondary effects. Positive impacts to the state's economy of adopting HB 353 would be greatest in the near future when difference in income tax collections between HB 353 and current law are expected to be largest.

²¹Behling, November 12, 1984.

²²Memorandum from Revenue Research Section to Commissioner Nordale, October 31, 1985, page 24.

Table 2 (on page 28) indicates that 45 percent of the additional revenues from HB 353 would be collected in 1986 and 1987. By the year 2003, income tax collections under current law are projected to exceed collections under HB 353.

If current law remains in effect, the petroleum industry would retain this \$1.6 billion dollars for their own investment projects. One investment option available to the petroleum industry is onshore exploration and development projects. If successful, these projects would stimulate the state's economy through additional employment and increased oil production that would be taxed.

There is no guarantee, however, that petroleum company investments would occur onshore. Petroleum companies could also invest in the exploration of Outer Continental Shelf (OCS) leases or development of OCS production facilities. Because of the specialized nature of the equipment required for these activities, little economic activity would be generated in the state unless onshore production facilities are constructed. Most equipment needed for OCS activity is manufactured outside of Alaska and towed to location. In addition, state royalties, severance taxes, and income taxes are not levied on OCS production; OCS activity would generate only minor benefits to the state's economy.

Finally, the \$1.6 billion retained by the petroleum industry could be invested outside of Alaska. Earlier, we noted that investments in Alaska must compete with other investment opportunities of the corporation. Petroleum investments in Alaska are primarily related to crude oil exploration, development and production. In times of falling crude oil prices, these investments could be vulnerable to competition from other projects with higher expected rates of return.

CHAPTER 3

EFFECT OF INCOME TAXES ON MARGINAL FIELD NET REVENUE

In the previous chapter, we noted that economic theory suggests that income taxes have a limited impact on development and production decisions. We also observed that modified apportionment may have a more detrimental effect upon the economic feasibility of marginal oil fields than separate accounting. In this chapter, we examine this theory by comparing the shares of net revenue from petroleum production and transportation that would be captured by the State government, federal government and oil industry under current law and HB 353.

We first present the division of net revenue for all Alaska production and then present the shares of net revenue for each marginal field.²³ The marginal fields presented here include Lisburne, Milne Point and Endicott. Although the West Sak sands have very large reserves that may be recoverable, the development of the technology to produce this oil is not yet complete. As a result, cost and production information for this project is very speculative and difficult to use. The Prudhoe Bay Enhanced Oil Recovery project has been excluded because the incremental production from the project cannot be separated from other Prudhoe Bay production in the severance tax calculation.

In computing shares of net revenue, we summed revenues from oil production and transportation and then deducted the costs associated with earning this revenue.²⁴ Revenue, cost and tax information used to compute the shares analysis is located in the appendix.

Net revenues are gross revenues minus all the allowable nontax expenses (deductions) associated with earning those revenues. Expenses include items such as direct operating costs, depreciation, costs associated with acquiring oil leases, interest costs, exploration cost and administrative costs. It is net revenue that constitutes the pie that is split among the industry, the State and federal governments. The State and federal share of net revenue is comprised of all royalty, tax and rental income. The industry share is the amount of net revenue retained after the State and federal portions are deducted.

²³The information on shares of net revenue from all fields is a summary of information contained in a House Research Report completed in December 1985. That report is available upon request.

²⁴The source for all revenue, cost and tax data for the shares analysis of all production is Department of Revenue, Research Section, memorandum of October 31, 1985 to Revenue Commissioner Mary Nordale.

EFFECT ON MARGINAL FIELDS

This analysis assumes that the quantity of oil produced is not affected by whether current law or HB 353 is in effect. Consequently, royalty payments, rental payments, property tax collections and conservation tax collections will be the same under either law.²⁵

SHARES OF NET REVENUE: ALL PRODUCING FIELDS

Shares of net revenues for all the producing fields are presented below. The first analysis uses the Department of Revenue mean oil price forecast and the second uses the department's 30 percent oil price forecast.

Summary of State, Federal and Industry Share--Mean Oil Price Forecast

Table 6 compares the division of net petroleum production and transportation revenue under current law with the division of this income under a combination HB 353 and AS 43.21 (the State's previous separate accounting law) for the years 1982-2005. As the table indicates, under both tax schemes, the federal and industry shares decline between 1986 and 2005 while the State share increases. Figure 5 shows State, federal and industry shares of net revenue for the years 1985-2005 for both current law and HB 353.

Federal Share. Under both tax scenarios, the federal share decreases steadily throughout the period 1982-2005. However, between the years 1986 and 2002, the federal share is slightly higher if the current law is in effect than if HB 353 is in effect. During the last three years of the period, the federal share is higher under HB 353. This occurs because because State income taxes are allowed as federal income tax deductions. Consequently, lower State taxes increase federal taxable income. Between the years 1986 and 2002, the State collects more total taxes under HB 353 than under current law. After 2002, current law generates more State revenue.

In computing the federal share, we used an effective federal income tax rate of 29 percent rather than the 46 percent statutory rate because the shares analysis is based on percentages of net revenue actually captured.²⁶ We determined that this effective rate more accurately reflects the percentage of net revenue that petroleum companies were paying as federal taxes. However, problems exist in applying this or any other effective tax rate.

²⁵Alaska Department of Revenue, Research Section, Memorandum from Vince Wright to Revenue Commissioner Mary Nordale, October 31, 1985, page 8.

²⁶The 29 percent effective rate is from an American Petroleum Institute study as reported in the Oil and Gas Journal, Sept. 16, 1985, page 76.

EFFECT ON MARGINAL FIELDS

TABLE 6: STATE, FEDERAL AND INDUSTRY SHARES OF PETROLEUM PRODUCTION AND TRANSPORTATION NET REVENUE 1982-2005

Comparison of Current Law and HB 353 (effective 1985)
Alaska Department of Revenue Mean Oil Price Forecast

Fiscal Year	Total Net Revenue	State Share Cur.Law	State Share HB 353	Federal Share Cur.Law	Federal Share HB 353	Industry Share Cur.Law	Industry Share HB 353
82	13,616.3	30.3%	28.8%	30.8%	31.2%	38.9%	39.9%
83	12,313.1	28.7	30.0	26.7	26.3	44.6	43.7
84	11,462.4	29.7	31.1	23.0	22.6	47.3	46.3
85	11,385.1	29.3	32.8	21.0	20.0	49.7	47.2
86	10,000.0	31.0	35.7	20.4	19.0	48.7	45.3
87	8,583.4	33.1	36.2	19.6	18.7	47.3	45.1
88	7,408.6	32.1	34.3	19.8	19.2	48.0	46.5
89	6,868.8	32.5	34.6	19.7	19.1	47.8	46.3
90	6,191.0	34.0	35.9	19.3	18.7	46.7	45.4
91	5,433.0	35.4	37.1	18.9	18.4	45.7	44.5
92	5,160.7	35.4	37.0	18.8	18.4	45.7	44.6
93	4,853.2	35.5	37.1	18.8	18.3	45.7	44.5
94	4,216.1	36.7	38.2	18.5	18.0	44.8	43.8
95	3,762.4	37.5	38.8	18.2	17.9	44.3	43.4
96	3,270.8	38.9	39.7	17.8	17.6	43.2	42.7
97	2,887.9	39.4	40.3	17.7	17.4	42.9	42.3
98	2,565.8	39.9	40.8	17.5	17.3	42.5	41.9
99	2,204.0	40.6	41.3	17.4	17.2	42.0	41.5
00	2,062.9	40.5	41.3	17.4	17.2	42.1	41.6
01	1,695.1	42.1	42.7	17.0	16.8	40.9	40.5
02	1,340.1	44.9	44.9	16.2	16.2	38.9	38.9
03	1,049.0	48.5	47.6	15.2	15.4	36.4	37.0
04	854.1	50.5	49.1	14.6	15.0	34.9	35.9
05	643.3	56.2	53.7	13.0	13.8	30.8	32.6

Notes: Shares assume current law in effect from 1982-2005, AS 43.21 in effect 1982-1984 and HB 353 in effect from 1985-2005. 1982 State share under current law is based on actual collections for that year.

Assumes effective federal income tax rate of 29 percent.

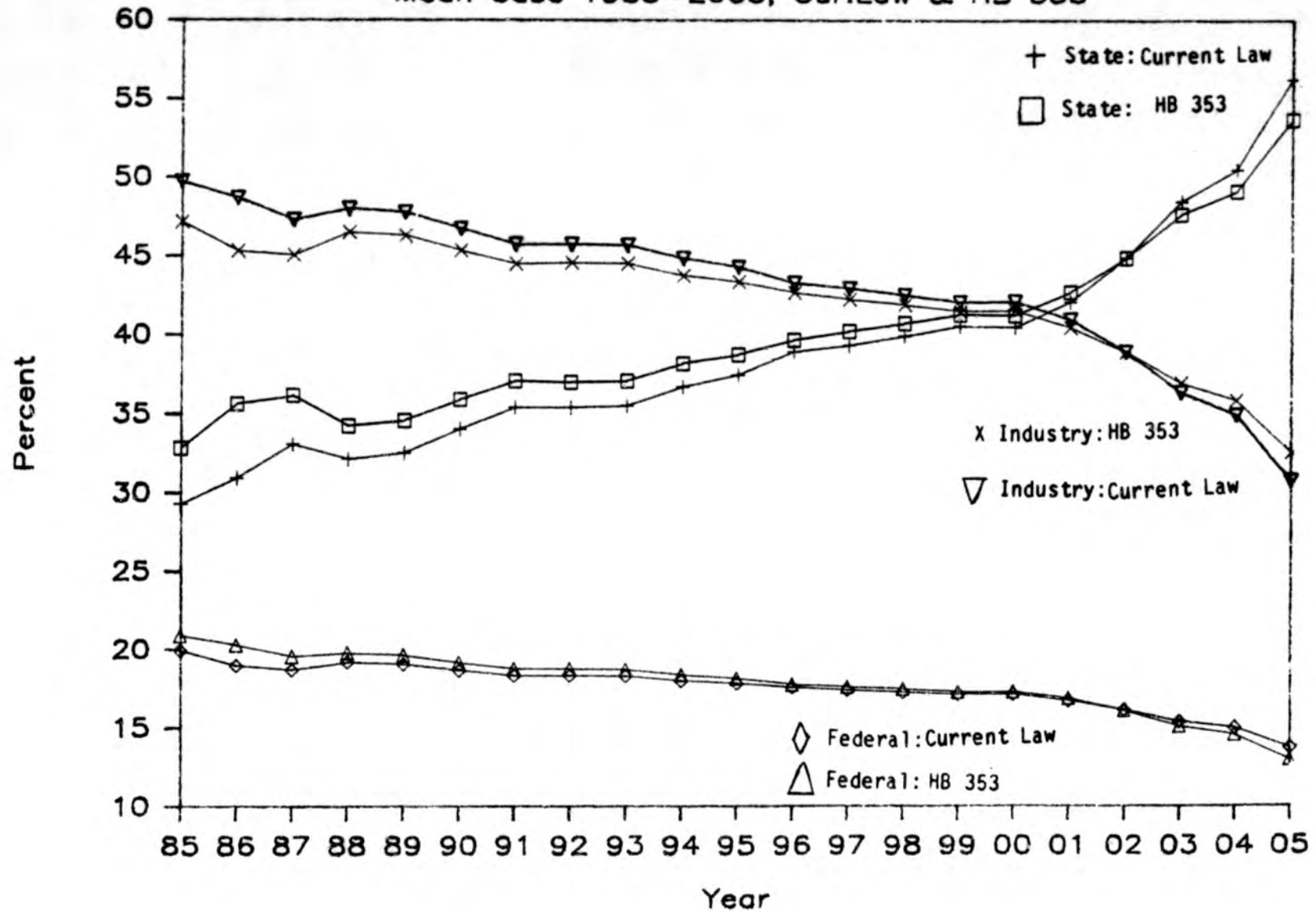
1982-1985 net revenue is actual dollars. 1986-2005 net revenue is deflated to 1986 dollars based on inflation rates found in: Revenue Sources FY 1984-87, January, 1985 page 38, published by the Alaska Department of Revenue.

Prepared by the House Research Agency 12-12-85.

FIGURE 5

Shares of Petroleum Net Revenue

Mean Case 1985-2005; Cur.Law & HB 353



First, the effective rate used here applies to all oil company activities, i.e., exploration, production, transportation, refining and marketing. In Alaska, exploration, production and transportation activities are the primary contributors to oil industry income. Therefore, the effective rate that we have used may, to some degree, distort the actual federal income tax payments associated with income earned in Alaska.

Secondly, we have applied the same effective rate throughout the period 1982-2005. In reality, the effective rate will fluctuate as tax laws change and as changes occur in the mix of petroleum industry activities. Because the petroleum industry is allowed tax incentives to explore for and develop oil fields, effective rates will generally be lower in periods of intense exploration activity and higher in periods of less intense exploration and development activity. By using the same rate throughout the period, we have assumed that the mix of oil industry activity in Alaska is similar to the mix used to calculate the effective rate and that similar levels of industry activity will continue in Alaska.

The choice of the federal income tax rate alters the division of net revenue between the federal government and industry, but does not affect the State share. A higher effective income tax rate would increase the federal share and decrease the industry share. House Research has estimated that if the statutory tax rate of 46 percent were used rather than effective rate of 29 percent, the industry share of net revenue would be approximately 10 percent lower under HB 353 or current law in every year from 1982 - 2005.

The federal share also includes the proceeds from the Windfall Profits Tax; a tax that is dependent on the price of oil. The decrease in the federal share between the years 1982 and 1985 is largely due to reduced Windfall Profit Tax collections as a result of oil price declines.

State Share. The State share of production and transportation net revenue increases under both the State tax schemes. This is primarily due to royalties and severance taxes, which comprise a substantial portion of total State revenue collections throughout the period. Both of these sources of income are assessed as a percentage of gross production rather than as a percentage of net income, so are unaffected by changes in the cost of production. If net income were a relatively constant percentage of gross revenue throughout the period, the State's share would also remain relatively constant even as gross revenues decline. However, per barrel production costs will increase in the later years of Prudhoe Bay and Kuparuk production and as marginal fields begin production. Consequently, net revenue declines more rapidly than total State collections, resulting in the State capturing an increasingly larger share of net revenue.

EFFECT ON MARGINAL FIELDS

As Figure 5 indicates, the State share is higher for every year from 1986-2002 under HB 353 than under current law. This difference is due primarily to higher corporate income tax collections under HB 353 than under current law for the period 1986-2004. The higher severance tax rate under current law does not compensate for the income tax difference until 2003, the first year that combined severance tax and corporate income tax collections under current law will exceed severance and income tax collections under HB 353.

Industry Share. The industry share of net revenue is the portion of net revenue remaining after the State and federal shares have been subtracted. The industry share of net revenue declines throughout the period 1986-2005 under both HB 353 and current law.

Between the years 1986 and 2002, the industry share of net revenue is consistently higher under current law than it would be if HB 353 were adopted. From 2003 until 2005 (the end of the period of analysis) the industry share is greater under HB 353.

Summary of State, Federal and Industry Share--30 Percent Oil Price Forecast

Table 7 compares the division of net revenue among the State government, federal government and petroleum industry under current law and HB 353 under the Department of Revenue 30 percent oil price forecast. Figure 6 presents this information graphically. As with the mean oil price forecast, the federal and industry shares decline over time while the State share increases regardless of the law that is in effect.

Assuming the 30 percent oil price forecast, the State share is higher under HB 353 than under current law from 1986-2000 and lower than the current law from 2001-2005. The industry share of net revenue is higher under current law than HB 353 from 1986-2000 and lower under current law beginning in 2001.

The State share is considerably higher by the end of the study period under the 30 percent price forecast than it is if the mean oil price forecast is used. This occurs because cost deductions do not decline as the price of oil falls. Consequently, costs are a higher percentage of gross revenue under the 30 percent forecast than under the mean forecast. However, because a substantial portion of the State's petroleum collections are based on gross production rather than net revenue, the State share increases as net revenue declines.

EFFECT ON MARGINAL FIELDS

TABLE 7: STATE, FEDERAL AND INDUSTRY SHARES OF PETROLEUM PRODUCTION AND TRANSPORTATION NET REVENUE 1982-2005

Comparison of Current Law and HB 353 (effective 1985)
Alaska Department of Revenue 30% Oil Price Forecast

Fiscal Year	Total Net Revenue	State Share Cur. Law	State Share HB 353	Federal Share Cur. Law	Federal Share HB 353	Industry Share Cur. Law	Industry Share HB 353
1982	13,616.3	30.3%	28.8%	30.8%	31.2%	38.9%	39.9%
1983	12,313.1	28.7	30.0	26.7	26.3	44.6	43.7
1984	11,462.4	29.7	31.1	23.0	22.6	47.3	46.3
1985	11,385.1	29.3	32.8	21.0	20.0	49.7	47.2
1986	9,743.6	31.1	35.8	20.3	18.9	48.6	45.3
1987	7,700.2	33.8	36.8	19.4	18.5	46.8	44.7
1988	6,793.1	33.1	35.0	19.5	19.0	47.4	46.0
1989	6,192.7	33.9	35.6	19.3	18.8	46.8	45.6
1990	5,526.0	35.7	37.1	18.8	18.3	45.6	44.5
1991	4,768.2	37.4	38.6	18.3	17.9	44.3	43.5
1992	4,530.6	37.4	38.4	18.3	18.0	44.4	43.6
1993	4,272.0	37.2	38.6	18.3	17.9	44.4	43.5
1994	3,709.4	38.7	39.7	17.9	17.6	43.4	42.7
1995	3,291.0	39.5	40.4	17.7	17.4	42.8	42.2
1996	2,872.8	40.9	41.3	17.3	17.2	41.8	41.6
1997	2,526.8	41.5	42.0	17.1	17.0	41.4	41.1
1998	2,211.6	42.5	42.8	16.8	16.7	40.7	40.5
1999	1,923.2	43.7	43.8	16.5	16.5	39.8	39.8
2000	1,678.6	44.6	44.5	16.3	16.3	39.2	39.2
2001	1,293.1	48.8	47.8	15.1	15.3	36.2	36.8
2002	985.5	53.3	51.4	13.8	14.4	32.9	34.2
2003	727.5	61.0	57.3	11.6	12.7	27.4	30.0
2004	542.7	68.9	63.5	9.4	11.0	21.6	25.5
2005	316.8	97.3	85.7	1.5	4.8	1.3	9.5

Notes: Shares assume current law in effect from 1982-2005. AS 43.21 in effect 1982-1984 and HB 353 in effect from 1985-2005. 1982 State share under current law is based on actual collections for that year.

Assumes effective federal income tax rate of 29 percent.

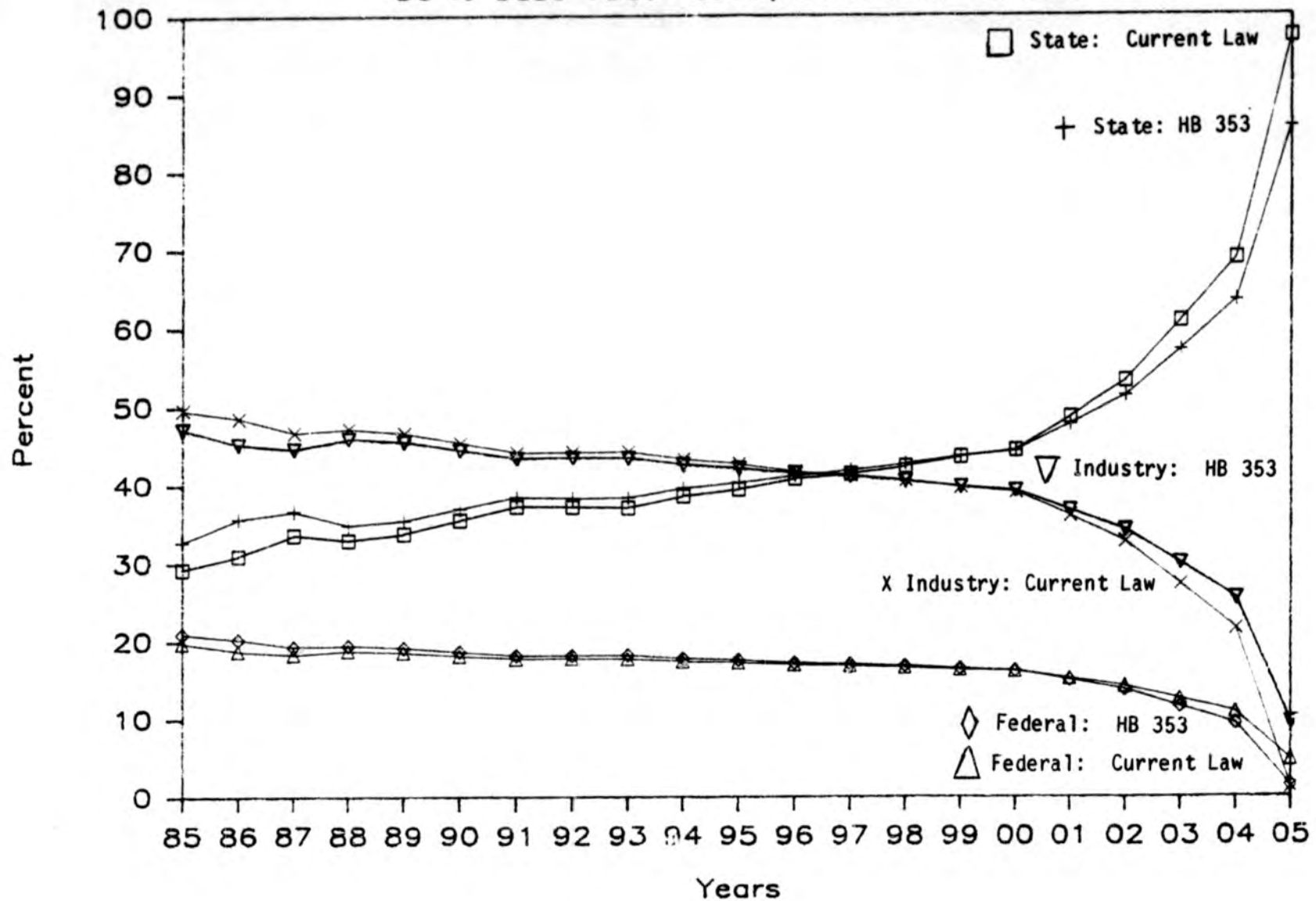
1982-1985 net revenue is actual dollars. 1986-2005 net revenue is deflated to 1986 dollars based on inflation rates found in: Revenue Sources FY 1984-87, January, 1985 page 38, published by the Alaska Department of Revenue.

Prepared by the House Research Agency 12-12-85.

FIGURE 6

Shares of Petroleum Net Revenue

30 % Case 1985--2005; Cur.Law.& HB 353



SHARES OF NET REVENUE--MARGINAL FIELDS

This section discusses the computation of the State, federal and industry shares of net revenue for each of the following marginal oil fields: Milne Point, Endicott and Lisburne. The approach used to determine the shares of net income for these marginal fields is the same as was used in the preceding analysis of all fields except that acquisition costs have been excluded. From gross income we deducted operating costs to determine net revenue. Next, we calculated all the revenues collected by the State and federal governments and subtracted these from net revenue to determine the portion of net revenue retained by the industry.

The computer model that we used to complete the shares analysis is a derivation of the model FINDOIL, which was developed by the University of Alaska, Institute of Social and Economic Research.²⁷ The model does not replicate the timing and amount of all tax deductions relevant to the development of these marginal oil fields. However, we feel that the model approximates accounting relationships and actual economic conditions to the extent that it can be used to illustrate the impact on marginal oil fields of implementing HB 353 or retaining the current law.²⁸ (Model assumptions are found in the appendix).

Summary of State, Federal and Industry Shares

Tables 8-10 show the division of net oil production and transportation income among the State government, federal government and industry under both current law and HB 353 for the three marginal fields. (Tables showing the composition of the State collections can be found in the appendix.)

For each of the marginal fields we analyzed, the industry retains a larger share of net revenues (and the State gains a smaller share) under HB 353 than under the current law. This result is contrary to the findings of the previous section in which Prudhoe Bay and Kuparuk were included in the analysis.

²⁷Alaska Petroleum Revenues: The Influence of Federal Policy, University of Alaska, Institute of Social and Economic Research, October 1984.

²⁸The model, which has been developed using a Lotus 123 spreadsheet format, is available from the House Research Agency.

Table 8
Hilme Point
State, Federal and Industry Share of Net Revenue
1985-2010
(1985 dollars)

Year	Wellhd.	Oil. Prod	Price Of Oil	Hdbbl/Yr. DNR	Total Revenue \$1000	Products. Cost \$1000	State Share of Net Revenue				Federal Share of Net Revenue				Industry Share of Net Revenue				
							Net Revenue	Current Law		HB 353		Current Law		HB 353		Current Law		HB 353	
								Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1982																			
1983																			
1984																			
1985	14.37	0	0	0	0	0	1,696	0%	1,430	0%	0	0%	0	0%	0	0%	0%		
1986	13.51	10,950	201,946	38,530	163,416	48,558	30%	48,267	30%	12,610	8%	12,867	8%	102,248	63%	102,283	63%		
1987	10.84	10,950	167,910	38,957	128,953	40,133	31%	37,511	29%	19,179	15%	20,385	16%	69,642	54%	71,057	55%		
1988	10.29	10,950	159,065	39,310	119,754	38,165	32%	34,966	29%	19,590	16%	21,062	18%	62,000	52%	63,727	53%		
1989	9.82	9,125	125,810	33,066	92,744	30,425	33%	27,285	29%	18,481	20%	19,925	21%	43,838	47%	45,534	49%		
1990	9.61	7,300	97,458	26,813	70,645	23,906	34%	21,134	30%	18,990	27%	20,265	29%	27,750	39%	29,246	41%		
1991	9.45	5,475	71,762	20,499	51,263	18,224	36%	15,371	30%	13,507	26%	14,819	29%	19,533	38%	21,073	41%		
1992	10.09	5,475	74,124	21,423	52,701	19,265	37%	16,427	31%	13,877	26%	15,182	29%	19,559	37%	21,092	40%		
1993	10.46	3,650	50,438	14,553	35,884	12,876	36%	11,123	31%	9,666	27%	10,472	29%	13,343	37%	14,289	40%		
1994	10.43	3,650	49,888	15,150	34,737	12,757	37%	10,943	32%	9,361	27%	10,195	29%	12,619	36%	13,599	39%		
1995	10.35	3,650	49,288	15,737	33,551	15,020	45%	12,530	37%	7,897	24%	9,042	27%	10,634	32%	11,979	36%		
1996	11.18	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%		
1997	11.99	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%		
1998	12.52	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%		
1999	13.08	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%		
2000	13.56	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%		
2001	13.36	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%		
2002	13.10	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%		
2003	12.67	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%		
2004	12.97	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%		
2005	12.37	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%		
2006	11.58	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%		
2007	10.94	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%		
2008	10.40	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%		
2009	9.97	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%		
2010	9.81	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%		
			71,175	1,047,688	264,038	783,650	261,025	33%	236,986	30%	143,156	18%	154,214	20%	381,165	49%	393,880	50%	

Notes: All dollars have been deflated to 1985 value. Inflation factors based on Department of Revenue "Revenue Sources", January 1986, page 40.
Oil price projections based on Department of Revenue "Petroleum Production Revenue Forecast", December, 1985 page 11.
Annual oil production projections from "Historic and Projected Oil and Gas Consumption", Department of Natural Resources, January 1986, page 11.
prepared by the House Research Agency, January, 1985

Table 9
Endicott
State, Federal and Industry Share of Net Revenue
1985-2010
(1985 dollars)

Year	Wellhd. Oil. Prod Price HBbl/Yr. Of Oil	Prod DNR	Total Revenue \$1000	Products. Cost \$1000	Net Revenue	State Share of Net Revenue				Federal Share of Net Revenue				Industry Share of Net Revenue			
						Current Law Amount	Percent	HB 353 Amount	Percent	Current Law Amount	Percent	HB 353 Amount	Percent	Current Law Amount	Percent	HB 353 Amount	Percent
1982																	
1983																	
1984																	
1985	14.68	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
1986	13.82	0	0	0	0	5,219	0%	4,400	0%	0	0%	0	0%	0	0%	0	0%
1987	11.15	0	0	0	0	10,438	0%	8,800	0%	0	0%	0	0%	0	0%	0	0%
1988	10.60	10,250	270,765	72,817	197,948	60,783	31%	53,070	27%	0	0%	0	0%	137,165	69%	144,878	73%
1989	10.13	36,500	514,553	146,863	367,690	108,307	29%	93,363	25%	0	0%	0	0%	259,304	71%	274,327	75%
1990	9.92	36,500	498,607	148,666	349,941	105,827	30%	89,818	26%	17,721	5%	25,085	7%	226,393	65%	235,038	67%
1991	9.76	36,500	489,728	151,260	338,468	103,756	31%	87,222	26%	35,505	16%	63,111	19%	179,207	53%	188,136	56%
1992	10.40	36,500	505,476	157,417	348,058	107,806	31%	92,138	26%	100,465	29%	107,672	31%	139,788	40%	148,248	43%
1993	10.77	31,025	438,337	136,113	302,224	96,131	32%	79,764	26%	86,976	29%	94,505	31%	119,117	39%	127,955	42%
1994	10.74	27,375	382,643	124,576	258,067	84,190	33%	69,246	27%	74,338	29%	81,213	31%	99,539	39%	107,609	42%
1995	10.66	23,725	327,728	111,779	215,949	72,194	33%	58,738	27%	62,030	29%	68,219	32%	81,725	38%	88,991	41%
1996	11.49	23,725	345,470	113,623	231,847	77,586	33%	64,720	28%	67,680	29%	73,598	32%	86,582	37%	93,529	40%
1997	12.30	21,900	336,025	106,145	229,880	75,927	33%	64,950	28%	68,510	30%	73,560	32%	85,443	37%	91,370	40%
1998	12.83	20,075	324,713	99,709	225,003	72,490	32%	63,368	28%	68,698	31%	72,894	32%	83,816	37%	88,741	39%
1999	13.39	18,250	322,156	92,310	229,845	68,101	30%	61,835	27%	73,014	32%	75,896	33%	88,731	39%	92,114	40%
2000	13.87	16,425	305,834	84,307	221,526	63,281	29%	58,645	26%	71,507	32%	73,639	33%	86,739	39%	89,242	40%
2001	13.67	14,600	274,725	76,456	198,269	55,651	28%	51,745	26%	64,455	33%	66,251	33%	78,164	39%	80,273	40%
2002	13.41	7,300	138,207	39,042	99,166	25,597	26%	24,214	24%	33,264	34%	33,900	34%	40,305	41%	41,052	41%
2003	12.98	3,650	68,598	19,822	48,776	13,248	27%	12,381	25%	16,055	33%	16,454	34%	19,473	40%	19,941	41%
2004	13.28	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
2005	12.68	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
2006	11.89	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
2007	11.25	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
2008	10.71	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
2009	10.28	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
2010	10.12	0	0	0	0	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
372,300 5,543,564 1,680,905 3,862,659 1,206,532						31%	1,038,419	27%	860,217	22%	925,997	24%	1,811,567	47%	1,911,444	49%	

Notes: All dollars have been deflated to 1985 value. Inflation factors based on Department of Revenue "Revenue Sources", January 1986, page 40.
Oil price projections based on Department of Revenue "Petroleum Production Revenue Forecast", December, 1985, page 11.
Annual oil production projections from "Historic and Projected Oil and Gas Consumption", Department of Natural Resources, January 1986, page 11.
prepared by the House Research Agency, January, 1985

Table 10
Lisburne
State, Federal and Industry Share of Net Revenue
1985-2010
(1985 dollars)

Year	Wellhd. Of Oil	Oil Prod MMbbl/Yr	Total Revenue \$1000	Productn. Cost \$1000	Net Revenue	State Share of Net Revenue				Federal Share of Net Revenue				Industry Share of Net Revenue				
						Current Law		HB 353		Current Law		HB 353		Current Law		HB 353		
						Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	
1982																		
1983																		
1984																		
1985	17.48	0	0	0	0	5,219	0%	4,400	0%	0	0%	0	0%	0	0%	0	0%	
1986	16.62	0	0	0	0	10,438	0%	8,800	0%	0	0%	0	0%	0	0%	0	0%	
1987	13.95	18,250	336,607	41,279	275,329	68,592	25%	69,517	25%	0	0%	0	0%	206,737	75%	205,811	75%	
1988	13.40	21,900	306,238	74,240	311,998	73,675	24%	74,373	24%	0	0%	0	0%	233,323	76%	237,625	76%	
1989	12.93	25,550	431,727	87,474	344,253	79,745	23%	79,779	23%	0	0%	0	0%	264,508	77%	264,475	77%	
1990	12.72	29,200	480,645	101,413	379,233	88,037	23%	87,495	23%	82,296	22%	82,545	22%	208,900	55%	209,192	55%	
1991	12.56	32,050	532,735	116,424	416,311	96,435	23%	95,559	23%	136,754	33%	137,157	33%	183,123	44%	183,596	44%	
1992	13.20	36,500	607,676	135,517	472,158	113,042	24%	108,831	23%	154,903	33%	156,840	33%	204,213	43%	206,488	44%	
1993	13.57	36,500	617,890	138,232	479,658	123,274	26%	117,625	25%	154,489	32%	157,088	33%	201,894	42%	204,945	43%	
1994	13.54	36,500	612,390	144,201	468,189	122,985	26%	116,505	25%	151,028	32%	154,009	33%	194,176	41%	197,675	42%	
1995	13.46	32,050	545,757	135,061	410,696	109,973	27%	103,357	25%	132,443	32%	135,487	33%	168,278	41%	171,851	42%	
1996	14.29	29,200	506,954	122,324	384,630	102,226	27%	97,534	25%	125,677	33%	127,836	33%	156,727	41%	159,261	41%	
1997	15.19	26,280	476,815	111,606	365,208	96,520	26%	93,448	26%	120,655	33%	122,068	33%	148,033	41%	149,692	41%	
1998	15.63	23,725	450,181	103,603	346,578	89,772	26%	88,255	25%	116,252	34%	116,950	34%	140,554	41%	141,373	41%	
1999	16.19	21,170	432,977	94,378	338,599	82,327	24%	83,356	25%	116,135	34%	115,662	34%	140,136	41%	139,581	41%	
2000	16.67	18,980	406,352	86,030	320,318	75,849	24%	77,955	24%	110,937	35%	109,968	34%	133,732	42%	132,595	41%	
2001	16.47	17,155	370,836	79,543	291,293	68,141	23%	70,236	24%	101,187	35%	100,223	34%	121,966	42%	120,834	41%	
2002	16.21	15,330	333,159	72,790	260,370	60,198	23%	62,162	24%	90,766	35%	89,862	35%	109,406	42%	108,346	42%	
2003	15.78	13,870	299,508	67,000	232,508	68,195	29%	66,039	28%	74,400	32%	75,392	32%	89,913	39%	91,077	39%	
2004	16.08	12,410	270,681	66,129	204,552	62,315	30%	59,825	29%	64,363	31%	65,509	32%	77,874	38%	79,218	39%	
2005	15.48	11,315	242,691	55,996	186,695	55,366	30%	53,375	29%	59,450	32%	60,366	32%	71,879	39%	72,954	39%	
2006	14.69	10,220	208,045	51,087	156,958	48,252	31%	45,672	29%	49,162	31%	50,349	32%	59,544	38%	60,937	39%	
2007	14.05	9,125	177,344	45,949	131,395	42,068	32%	39,131	30%	40,357	31%	41,708	32%	48,970	37%	50,557	38%	
2008	13.51	7,300	136,126	37,170	98,956	33,288	34%	30,570	31%	29,633	30%	30,884	31%	36,035	36%	37,503	38%	
2009	13.08	5,475	98,169	27,881	70,288	25,535	36%	22,990	33%	20,165	29%	21,336	30%	24,589	35%	25,963	37%	
2010	12.92	3,650	63,747	18,594	45,153	18,355	41%	16,205	36%	12,050	27%	13,039	29%	14,748	33%	15,909	35%	
			495,305	9,025,452	2,033,924	6,991,528	1,819,821	26%	1,772,992	25%	1,943,104	28%	1,964,278	28%	3,244,260	46%	3,267,458	47%

Notes: All dollars have been deflated to 1985 value. Inflation factors based on Department of Revenue "Revenue Sources", January 1986, page 40.
Oil price projections based on Department of Revenue "Petroleum Production Revenue Forecast", December, 1985 page 11
Annual oil production projections from "Historic and Projected Oil and Gas Consumption", Department of Natural Resources, January 1986, page 11.
prepared by the House Research Agency, January, 1985

The State and industry shares are sensitive to the inclusion or exclusion of specific oil fields because of the large disparity in the profitability of oil production among different fields. We have noted that economic activities with higher profitability than the average corporate profitability would be taxed more heavily under HB 353 than under modified apportionment while economic activities with lower profitability than the corporate average would be taxed more heavily under modified apportionment than under HB 353. The marginal fields are, by definition, less profitable than the average investment so are subject to higher taxation under modified apportionment than under HB 353. In contrast, the relatively high profitability of production and transportation activities associated with the Prudhoe Bay and Kuparuk fields cause income from these fields to be taxed more heavily under separate accounting than under current law.

One consequence of the adoption of HB 353 is an immediate increase in State tax collections. Table 2 in Chapter 2 shows that by 2005, the State would have collected \$1.6 billion more (in 1985 dollars) under HB 353 than under current law. However, beyond 1990, the difference in tax revenues collected under the two income tax schemes narrows rapidly until 2003, when more revenue is collected under current law than under HB 353. Table 2 also indicates that a significant percentage of the additional tax revenues from the imposition of HB 353 would be collected in the next few years. We have seen that adoption of HB 353 in 1986 results in additional tax collections of \$1.6 billion by year 2005. If HB 353 were not adopted until 1988, total additional collections would fall by \$705 million to \$859 million, a decline of 45 percent.

Our analysis of the marginal fields indicates that the State share of net revenue from these fields is higher under the current law than it would be under separate accounting. However, over the life of the marginal fields, the difference in the State and industry revenues under current law and HB 353 is relatively small. Total State revenues (from the marginal fields) under current law would exceed collections under HB 353 by 5.2 percent (approximately \$180 million) over the life of the three marginal fields. The industry share is 1.8 percent (approximately \$103 million) higher under HB 353 than under current law. This means that Prudhoe Bay and Kuparuk would generate about \$1.8 billion in additional taxes under HB 353. These increased collections will be partially offset by the loss in collections from the marginal fields.

It also appears that the adoption of HB 353 would not have an adverse effect on the development of known marginal fields. The industry share of net income from marginal fields is higher under the separate accounting law than under the current modified apportionment law, making the fields a more attractive investment. As noted in Chapter 2, the decision to develop may be constructed by the availability of capital.

EFFECT ON MARGINAL FIELDS

However, when compared to economic factors such as the price of oil, Capital accumulation is not so critical to the development of marginal fields.

In a previous chapter, we noted that State revenues under HB 353 may be more vulnerable to oil price fluctuations than revenues under current law. The results of our analysis support this conclusion. As we reduced the expected price of oil, State revenues under HB 353 decreased by a larger percent than revenues under current law. As we increased the expected price of oil, revenues from HB 353 increased more than revenues under current law. Because of the apparent chaos in world oil markets, this feature of HB 353 suggests the total State petroleum revenues would be subject to more uncertainty under HB 353 than under current law.

While the immediate impact of the adoption of HB 353 is increased State income tax revenues, the economic impact of retaining current law is not so clear or immediate. Assuming that current law remains unchanged, the industry will retain the \$1.6 billion the State would collect under HB 353. Clearly, the benefit to the State's economy of industry retention of this money depends upon how it is spent by the industry. Onshore exploration and development of future oil fields on State land could have a long-term positive effect on the state's economy. Industry investments in offshore development would have relatively minor impacts while investments in other parts of the world would have virtually no impact on the state's economy.

Other long-term considerations involve exploration. In Chapter Two, we noted that higher taxes have a detrimental impact on exploration activity because discoveries must be larger to make development feasible. However, the relative impact of a change from current law to HB 353 is difficult to assess. Although larger oil fields would pay higher taxes under HB 353 than under current law, smaller, marginal fields would pay lower taxes. In addition, current law provides a disincentive to explore because exploration activities indicate economic presence for the State. Because modified apportionment assigns income to Alaska in proportion to the level of activity that occurs in state, exploration activity in Alaska is taxed regardless of whether any oil is ever produced.

In considering the economic impact to the State's economy of the adoption of HB 353, the legislature is faced with a dilemma common to all economic problems: weighing return against risk. Adoption of HB 353 would result in increased income tax revenues without adversely affecting the development of known marginal fields. However, this decision involves some risk. Adoption of HB 353 may discourage future exploration by reducing the potential value of large fields, leaving potential oil fields undiscovered and ultimately lowering potential State revenues. It could also subject the State to excessive revenue declines if oil prices are lower than projected.

APPENDIX

COST AND FINANCIAL DATA USED TO CALCULATE SHARES OF NET REVENUES
FROM ALL FIELDS

Petroleum Production and Transportation Financial Data
Department of Revenue Mean Case
1982-2005

Fiscal Year	Total Revenue	State Royalty Share	Prod'n Cons Tax	Prod. Cons. Taxes	Total Property Tax	Mineral Rents	-----Collections-----			Total Depre	Total Acquis Costs	(mil current FY \$)			Admin Costs	Other Deductns	Total Deductns	Total Net Income
							HB 353 1)	AS 43.20 2)	Oper'g Costs			Windfall Profits Tax	Interest Expense Uncap	Exploratn Costs				
82	16455.80	1564.30	1219.03	1581.7	275.90	28.9	837.62	668.90	939.80	602.58	0.77	2017.66	720.69	190.90	236.20	148.58	7916.41	8539.40
83	15469.75	1442.73	1098.94	1493.7	306.55	55.1	796.15	236.00	1100.56	780.16	0.98	1018.38	676.04	204.26	252.30	142.39	7023.30	8446.46
84	14955.04	1370.57	1032.93	1393.1	357.66	21.7	782.86	263.10	1259.34	998.45	1.09	412.33	614.13	218.56	264.90	136.20	6666.16	8298.87
85	15135.99	1362.44	1377.52	1388.5	396.56	20.4	581.52	168.60	1449.17	1093.32	0.80	69.59	565.55	233.86	278.20	130.00	6887.41	8248.58
86	13905.72	1220.81	1204.74	1204.74	420.27	21.6	698.21	228.07	1477.66	1224.05	0.76	39.85	541.76	245.55	292.10	123.82	6731.52	7154.20
87	13017.78	1098.54	979.68	1072.99	465.05	22.9	607.04	241.37	1599.63	1441.20	7.86	18.80	517.87	257.83	306.70	117.63	6791.98	6225.79
88	12634.59	1025.54	685.93	830.45	501.61	22.9	567.21	249.25	1644.96	1583.60	25.26	9.83	490.28	270.72	322.00	114.43	6664.33	5970.26
89	12632.59	1017.67	661.33	794.12	518.92	22.9	550.19	252.48	1672.48	1698.84	55.27	6.32	466.41	284.26	338.10	105.24	6819.52	5814.06
90	12386.27	1014.66	640.39	761.26	542.76	22.9	519.30	254.00	1760.02	1711.70	93.64	4.14	442.64	298.47	355.00	97.05	6958.33	5427.94
91	11789.55	983.67	603.23	707.14	537.14	22.9	476.02	251.48	1747.62	1653.39	124.08	2.71	418.55	313.40	372.80	92.86	6846.74	4942.81
92	11834.36	1008.16	610.04	715.61	528.09	22.9	466.96	248.45	1763.64	1618.38	129.44	1.72	393.54	329.07	391.40	86.67	6858.43	4975.93
93	11738.58	1022.99	609.35	719.25	515.73	22.9	466.49	244.40	1761.02	1535.91	130.52	0.70	367.83	345.52	411.00	80.48	6780.35	4958.23
94	11023.66	982.41	562.39	660.96	501.06	22.9	434.06	236.82	1727.71	1405.20	126.96	0.03	345.21	362.79	431.50	74.29	6519.52	4504.14
95	10538.10	958.25	535.46	631.2	484.11	22.9	403.64	228.19	1674.87	1305.73	124.63	0.00	328.97	380.93	453.10	68.10	6314.15	4223.95
96	9936.75	922.47	490.79	580.2	464.38	22.9	370.16	236.82	1649.40	1199.88	113.07	0.00	316.45	399.98	475.70	61.91	6094.23	3842.52
97	9515.63	904.71	456.78	539.66	442.44	22.9	343.05	211.35	1632.22	1116.78	97.80	0.00	304.62	419.98	499.50	55.72	5930.55	3585.08
98	9171.58	891.76	427.43	503.6	418.20	22.9	321.93	204.13	1621.84	1052.52	80.44	0.00	293.02	440.98	524.50	49.53	5800.22	3371.36
99	8885.20	884.73	402.26	471.98	392.51	22.9	302.91	197.49	1619.95	1002.70	70.07	0.00	283.10	463.03	550.70	43.34	5712.39	3172.81
2000	8645.68	877.78	372.55	437.26	365.75	22.9	290.31	190.00	1584.89	949.30	59.65	0.00	273.89	486.18	578.30	37.14	5585.42	3060.26
01	8025.03	831.91	326.22	377.3	313.85	22.9	257.19	180.10	1580.39	879.42	50.65	0.00	265.99	510.49	607.20	30.95	5397.07	2627.96
02	7343.31	775.51	279.22	322.12	262.26	22.9	212.73	169.31	1567.70	812.89	43.16	0.00	262.91	536.01	637.50	24.76	5201.92	2141.39
03	6811.31	725.47	245.16	280.13	211.62	22.9	170.62	159.82	1380.84	762.60	35.11	0.00	263.33	562.81	699.40	18.57	5104.91	1706.40
04	6367.79	684.66	221.49	247.03	161.34	22.9	141.77	150.55	1539.73	719.23	28.51	0.00	264.44	590.95	702.90	12.38	4925.63	1442.16
05	5850.75	637.09	201.86	221.37	111.27	22.9	109.07	140.64	1507.31	672.99	24.26	0.00	264.88	620.50	738.00	6.19	4784.35	1066.49

Notes: All revenue, cost and tax data from October 31, 1985 memo from Vince Wright to Revenue Commissioner Nordale.

AS 43.20 collections for 1982 reflect total income tax collections in that year. HB 353 collections assume AS 43.21 in effect 1982-1984 and HB 353 in effect 1985-2005.

First "prod. cons. tax" column provides severance tax collections assuming AS 43.21 in effect 1982-1984 and HB 353 in effect 1985-2005.

Second "prod. cons. taxes" column provides severance taxes assuming current law in effect 1982-2005.

Projections based on 6/85 Department of Revenue mean case price and production assumptions.

Petroleum Production and Transportation Financial Data
Department of Revenue 30 Percent Case
1982-2005

1982-2005										Income Tax Estimates (all current FY \$)									
Fiscal Year	Total Revenue	State Royalty Share	Prod'n Cons Tax	Sever. Taxes	Total Property Tax	Mineral Rents	-----Collections-----			Total Depre	Total Acquis Costs	Windfall Profits Tax	Interest Expense Uncap	Explorato Costs	Admin Costs	Other Deductns	Total Deductns	Total Net Income	
							HB 353 1)	AS 43.20 2)	Oper'g Costs										
82	16455.80	1564.30	1219.03	1581.7	275.90	28.9	837.62	668.90	939.80	602.58	0.77	2017.66	720.69	190.90	236.20	148.58	7916.41	8539.40	
83	15469.75	1442.73	1098.94	1493.7	306.55	55.1	796.15	236.00	1100.56	780.16	0.98	1018.38	676.04	204.26	252.30	142.39	7023.30	8446.46	
84	14955.04	1370.57	1032.93	1393.1	357.66	21.7	782.86	265.10	1259.34	998.45	1.09	412.33	614.13	218.56	264.90	136.20	6666.16	8288.87	
85	15135.99	1362.44	1377.52	1388.5	396.56	20.4	581.52	168.60	1449.17	1093.32	0.80	69.59	565.55	233.86	278.20	130.00	6887.41	8248.58	
86	13648.52	1187.44	1172.84	1172.84	420.27	21.6	684.73	223.67	1477.66	1224.05	0.76	35.96	541.76	244.80	292.10	123.82	6685.50	6963.02	
87	12293.68	1008.96	904.34	989.98	465.05	22.9	563.79	232.71	1597.00	1437.62	6.25	10.87	517.87	256.24	306.70	117.63	6617.65	5676.03	
88	11908.06	946.18	638.67	773.71	501.61	22.9	515.28	238.38	1629.36	1562.56	17.75	4.06	490.28	268.23	322.00	114.43	6491.08	5416.98	
89	11697.10	929.31	610.81	737.88	518.92	22.9	491.39	241.26	1625.11	1624.89	33.16	2.14	466.41	280.77	338.10	105.24	6532.71	5164.38	
90	11377.10	922.19	586.91	703.35	539.00	22.9	456.84	241.28	1702.64	1619.49	57.70	0.51	442.64	293.90	355.00	99.05	6618.51	4758.59	
91	10708.14	885.09	541.91	642.15	532.83	22.9	410.91	238.09	1686.99	1546.15	80.98	0.00	418.55	307.65	372.80	92.86	6465.81	4242.34	
92	10766.04	908.04	546.70	646.31	523.25	22.9	401.05	235.48	1709.49	1516.09	94.23	0.00	393.54	322.03	391.40	86.67	6491.44	4274.61	
93	10718.44	924.67	552.78	639.54	510.39	22.9	401.31	232.44	1715.39	1448.71	102.58	0.00	367.83	337.09	411.00	80.48	6450.92	4267.51	
94	10099.09	890.42	507.40	595.9	495.27	22.9	373.10	225.67	1691.98	1333.24	107.22	0.00	345.21	352.86	431.50	74.29	6229.38	3869.70	
95	9623.39	863.98	480.40	562.13	477.91	22.9	344.91	217.58	1640.12	1230.56	108.41	0.00	328.97	369.36	453.10	68.10	6020.92	3602.48	
96	9118.50	833.24	443.18	516.64	457.82	22.9	316.61	225.67	1621.89	1127.87	103.73	0.00	316.45	386.63	475.70	61.91	5828.43	3290.08	
97	8719.61	812.20	415.23	484.75	435.59	22.9	292.49	202.00	1606.92	1035.88	97.12	0.00	304.62	404.71	499.50	55.72	5667.49	3052.12	
98	8319.52	789.94	388.95	451.24	411.37	22.9	270.06	194.51	1592.93	947.57	84.77	0.00	293.02	423.64	524.50	49.53	5506.22	2813.30	
99	7936.71	770.14	361.51	418.64	386.00	22.9	247.16	187.15	1584.30	871.20	74.87	0.00	283.10	443.45	550.70	43.34	5368.61	2568.09	
2000	7567.89	750.23	332.77	384.15	359.60	22.9	226.90	178.63	1542.66	802.43	64.20	0.00	273.89	464.19	578.30	37.14	5205.41	2262.48	
01	6769.50	687.20	283.19	328.46	307.43	22.9	184.23	167.79	1513.33	709.22	53.36	0.00	265.99	485.89	607.20	30.95	4943.76	1825.74	
02	6187.36	640.81	245.12	278.92	256.93	22.9	141.64	156.78	1516.82	647.61	45.77	0.00	262.91	508.62	637.50	24.76	4786.85	1400.51	
03	5687.43	601.02	214.35	243.63	206.77	22.9	102.09	147.24	1533.59	598.56	38.15	0.00	263.33	532.40	699.40	18.57	4706.14	981.29	
04	5211.32	564.20	198.20	217.3	157.02	22.9	70.65	137.62	1489.05	559.16	31.62	0.00	264.44	557.30	702.90	12.38	4536.28	675.04	
05	4618.09	509.52	181.65	199.81	107.53	22.9	29.57	126.56	1494.37	511.86	26.27	0.00	264.88	583.36	738.00	6.19	4423.63	194.46	

Notes: All revenue, cost and tax data from October, 31, 1985 memo from Vince Wright to Revenue Commissioner Nordale.

AS 43.20 collections for 1982 reflect total income taxes collected in that year. HB 353 collections assume AS 43.21 in effect 1982-1984 and HB 353 in effect First "prod. cons. tax" column provides severance tax collections assuming AS 43.21 in effect 1982-1984 and HB 353 in effect 1985-2005.

Second "prod. cons. tax" column provides severance tax collections assuming current law in effect 1982-2005.

Projections based on 6/83 Department of Revenue 30% case price and production assumptions.

ASSUMPTIONS USED FOR ANALYSIS OF SHARES OF NET REVENUE FROM
MARGINAL FIELDS

-----Field Specific Variables-----

		MILNE	ENDICTT	LISBURNE
ROIL	royalty percentage	0.2	0.15	0.121
CAPOIL	Peak capacity (1000bpd)	30	100	100
FIXED	Exploration/Development	325000	2000000	2000000
NOIL	Years of Peak Production	3	4	3
POILDELT	\$/b less than Prud.Price	3.11	2.8	0
RESERVTD	Initial Reserves (000)	71000	375000	495000
TO	Year of Initial Production	1986	1988	1987
VARIABLE	Variable Dev. cost/bar.	0	0	0
QOIL84	oil produced in 1984	0	0	0
COIL84	cum oil pumped thru 1984	0	0	0
CBBL	operating cost (\$/b)	3	3.4	2.8
CWOIL	operating cost/oil well	0	0	0
RENTAL	lease payments (\$/b/yr)	0	0.1	0

-----Parameters Applicable to All Fields-----

GAMMA	production decline rate	0.094682
PDILBASE	1985 Prudhoe Wellhead Price	30
CONSRATE	Oil Cnsv. Tax Rate (\$/b)	0.00125
DEPRATE	Average Depreciation Rate	0.12
PCTINTAN	% Intangible Drilling Costs	0.9
PELOIL	Oil Prod at Econ Lat (b1000/yr	109.5
PROPRATE	Property Tax Rate	0.02
CENTSBBL	minimum severance tax (\$/b)	0.8
DRILLING	cost of drilling (\$/ft)	498
ELOILEXP	exponent ELF formula	1.533
OILPCT1	severance tax rate (fraction)	0.15
DEPALLRT	depletion allowance	0.18
FRINDEPN	fraction oil from independents	0.013
FCORPRT	effective federal tax rate	0.46
INVTXCR	federal investment tax credit	0.1
SCORPRT	state corp income tax rate	0.094
EXPLINCR	exploration incentive credit (	0
BONUS	Bonus	0
Y/Q	extraction fraction for mod ap	13
Y/S	sales fraction for mod apport	0.21
Y/K	property fraction for mod appo	0.12

Department of Revenue
Oil Price and Inflation Forecast
1985-2010

Year	DOR Oil Price Forecast (Nominal)	DOR Inflation Forecast	DOR Deflator
1985	17.48	1	1
1986	17.24	1.037	1.0318
1987	15.07	1.042	1.0762
1988	15.2	1.05	1.1224
1989	15.4	1.05	1.1707
1990	15.91	1.05	1.2210
1991	16.5	1.05	1.2736
1992	18.2	1.05	1.3398
1993	19.8	1.058	1.4094
1994	20.9	1.058	1.4827
1995	21.98	1.058	1.5598
1996	24.7	1.058	1.6410
1997	27.6	1.058	1.7378
1998	30.4	1.064	1.8403
1999	33.5	1.064	1.9489
2000	36.72	1.064	2.0639
2001	38.6	1.064	2.1856
2002	40.4	1.064	2.3168
2003	41.86	1.064	2.4558
2004	45.39	1.064	2.6031
2005	46.5	1.064	2.7593
2006	47.2	1.07	2.9249
2007	48.3	1.07	3.1004
2008	49.7	1.07	3.2957
2009	51.5	1.07	3.5033
2010	54.4	1.07	3.7240

Department of Revenue
Projections of Producing Oilwells

Year	Milne Point	Endicott	Lisburne
1982	0	0	0
1983	0	0	0
1984	0	0	0
1985	0	0	0
1986	22	0	0
1987	22	0	51
1988	22	62	80
1989	20	111	104
1990	17	111	120
1991	15	111	135
1992	14	111	155
1993	13	111	120
1994	13	100	116
1995	0	90	105
1996	0	81	95
1997	0	73	85
1998	0	65	77
1999	0	60	70
2000	0	53	62
2001	0	48	56
2002	0	43	51
2003	0	40	0
2004	0	0	0
2005	0	0	0
2006	0	0	0
2007	0	0	0
2008	0	0	0
2009	0	0	0
2010	0	0	0

Oil Production by Field
DNR Projections Mbbl/yr (000)

Year	Hilne Point	Endicott	Lisburne
1985	0	0	0
1986	10950	0	0
1987	10950	0	18250
1988	10950	18250	21900
1989	9125	36500	25550
1990	7300	36500	29200
1991	5475	36500	32850
1992	5475	36500	36500
1993	3650	31025	36500
1994	3650	27375	36500
1995	3650	23725	32850
1996	0	23725	29200
1997	0	21900	26280
1998	0	20075	23725
1999	0	18250	21170
2000	0	16425	18980
2001	0	14600	17155
2002	0	7300	15330
2003	0	3650	13870
2004	0	0	12410
2005	0	0	11315
2006	0	0	10220
2007	0	0	9125
2008	0	0	7300
2009	0	0	5475
2010	0	0	3650
	71175	372300	495305

PROJECTED STATE REVENUE AND ADDITIONAL FINANCIAL INFORMATION
APPLICABLE TO THE MILNE POINT, ENDICOTT AND LISBURNE FIELDS

Milne Point

Projected State Revenues: Current Law and HB 353

1985-2010

(1985 dollars)

71,175	152,002	51,959	48,949	89	24,775	0	32,200	11,172	261,025	236,986
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Notes: All dollars have been deflated to 1985 value. Inflation factors based on Department of Revenue "Revenue Sources", January, 1986, page 40. Oil price projections based on Department of Revenue "Petroleum Production Revenue Forecast", December, 1986. Annual oil production projections from "Historic and Projected Oil and Gas Consumption", Department of Natural Resources, January 1986, page 11.

Prepared by the House Research Agency, January 1986.

Milne Point
Miscellaneous Information
1985-2010

Year	Field Intangibl Dev Cost (1000)	Dev Cost (1000)	Taxbase (1000)	Statutory ----- Cur.Law	Sev Tax HB 353	Sev. tax \$/bar. ----- Cur.Law	HB 353	Calculate Econ.L.F.	E L F Applied	Actual Sev.Tax \$ ----- Cur.Law	HB 353	Fed. Taxable Inc. ----- Cur.Law	HB 353	State Taxable Inc. ----- Cur.Law	HB 353	Reserves (1000 bar)
1982	0	0	0													
1983	0	0	0													
1984	65,000	29250	35750													
1985	130,000	58500	71500	0.1225	0.1225	1.76	1.76	0.000	0.000	0.0000	0.0000	(23,634)	(23,369)	2,831	(1,430)	71,000
1986	130,000	58500	71500	0.1225	0.1225	1.66	1.66	0.683	0.683	0.0837	0.0837	43,916	44,473	52,820	49,728	60,050
1987	0	0	60473	0.1225	0.1225	1.33	1.33	0.683	0.683	0.0837	0.0837	42,326	44,950	52,209	24,313	49,100
1988	0	0	51146	0.1225	0.1225	1.26	1.26	0.683	0.683	0.0837	0.0837	43,244	46,443	51,774	17,746	39,150
1989	0	0	44573	0.1225	0.1225	1.20	1.20	0.657	0.657	0.0804	0.0804	40,796	43,937	43,094	9,684	29,025
1990	0	0	39990	0.1225	0.1225	1.18	1.18	0.637	0.637	0.0780	0.0780	41,777	44,549	34,600	5,110	21,725
1991	0	0	36906	0.15	0.1225	1.42	1.16	0.579	0.579	0.0668	0.0709	29,727	32,580	26,178	2,841	16,250
1992	0	0	34060	0.15	0.1225	1.51	1.24	0.604	0.604	0.0907	0.0740	30,544	33,382	26,034	3,653	10,775
1993	0	0	32309	0.15	0.1225	1.57	1.28	0.469	0.469	0.0703	0.0574	21,269	23,022	17,714	3,249	7,125
1994	0	0	30648	0.15	0.1225	1.56	1.28	0.469	0.469	0.0703	0.0574	20,603	22,418	17,643	2,517	3,475
1995	0	0	29073	0.15	0.1225	1.55	1.27	1.000	1.000	0.1500	0.1225	17,417	19,908	17,656	(271)	0
1996	0	0	0	0.15	0.1225	1.68	1.37	0.000	0.000	0.0000	0.0000	0	(0)	0	0	0
1997	0	0	0	0.15	0.1225	1.80	1.47	0.000	0.000	0.0000	0.0000	0	(0)	0	0	0
1998	0	0	0	0.15	0.1225	1.88	1.53	0.000	0.000	0.0000	0.0000	0	(0)	0	0	0
1999	0	0	0	0.15	0.1225	1.96	1.61	0.000	0.000	0.0000	0.0000	0	(0)	0	0	0
2000	0	0	0	0.15	0.1225	2.03	1.66	0.000	0.000	0.0000	0.0000	0	(0)	0	0	0
2001	0	0	0	0.15	0.1225	2.00	1.64	0.000	0.000	0.0000	0.0000	0	(0)	0	0	0
2002	0	0	0	0.15	0.1225	1.96	1.60	0.000	0.000	0.0000	0.0000	0	(0)	0	0	0
2003	0	0	0	0.15	0.1225	1.90	1.55	0.000	0.000	0.0000	0.0000	0	(0)	0	0	0
2004	0	0	0	0.15	0.1225	1.95	1.59	0.000	0.000	0.0000	0.0000	0	(0)	0	0	0
2005	0	0	0	0.15	0.1225	1.86	1.52	0.000	0.000	0.0000	0.0000	0	(0)	0	0	0
2006	0	0	0	0.15	0.1225	1.74	1.42	0.000	0.000	0.0000	0.0000	0	(0)	0	0	0
2007	0	0	0	0.15	0.1225	1.64	1.34	0.000	0.000	0.0000	0.0000	0	(0)	0	0	0
2008	0	0	0	0.15	0.1225	1.56	1.27	0.000	0.000	0.0000	0.0000	0	(0)	0	0	0
2009	0	0	0	0.15	0.1225	1.50	1.22	0.000	0.000	0.0000	0.0000	0	(0)	0	0	0
2010	0	0	0	0.15	0.1225	1.47	1.20	0.000	0.000	0.0000	0.0000	0	(0)	0	0	0

Notes All dollars have been deflated to 1985 value. Inflation factors based on Department of Revenue "Revenue Sources", January, 1986, page 40.
Oil price projections based on Department of Revenue "Petroleum Production Revenue Forecast", December, 1985.
Annual oil production projections from "Historic and Projected Oil and Gas Consumption", Department of Natural Resources, January 1986, page 11.
Prepared by the House Research Agency, January 1986.

Endicott

Projected State Revenues: Current Law and HB 353

1985-2010

(1985 dollars)

Year	Wellhd.	Oil Prod.	Royalty	Sev. Tax Revenue		Conser-	Rental		State Income Tax		Total St. Income	
	Price	Mbbl/Yr	Oil	-----		vation	Property	Payments	-----		-----	
	Of Oil	DNR	Income	Cur. Law	HB 353	Tax	Tax		Cur. Law	HB 353	Cur. Law	HB 353
1982								0.1				
1983								0.1				
1984								0.1				
1985	14.68	0	0	0	0	0	0	0.1	0	0	0	0
1986	13.82	0	0	0	0	0	4,400	0.1	819	0	5,219	4,400
1987	11.15	0	0	0	0	0	8,800	0.1	1,638	0	10,438	8,800
1988	10.60	18,250	29,009	9,869	9,869	23	12,450	0	9,432	1,719	60,783	53,070
1989	10.13	36,500	55,445	20,688	20,688	46	15,110	0	17,018	2,075	108,307	93,363
1990	9.92	36,500	54,307	20,263	20,263	46	14,359	0	16,852	843	105,827	89,818
1991	9.76	36,500	53,450	19,943	19,943	46	13,623	0	16,694	160	103,756	87,222
1992	10.40	36,500	56,924	21,240	21,240	46	13,040	0	16,557	889	107,806	92,138
1993	10.77	31,025	50,122	19,881	16,236	39	11,961	0	14,128	1,406	96,131	79,764
1994	10.74	27,375	44,096	17,129	13,989	34	10,423	0	12,507	703	84,190	69,246
1995	10.66	23,725	37,929	14,158	11,562	30	9,127	0	10,951	91	72,194	58,738
1996	11.49	23,725	40,905	16,963	13,853	30	8,650	0	11,038	1,282	77,586	64,720
1997	12.30	21,900	40,395	17,116	13,978	27	8,116	0	10,272	2,433	75,927	64,950
1998	12.83	20,075	38,629	16,783	13,706	25	7,562	0	9,491	3,447	72,490	63,368
1999	13.39	18,250	36,644	15,714	12,833	23	7,015	0	8,704	5,319	68,101	61,835
2000	13.87	16,425	34,184	14,894	12,163	21	6,279	0	7,903	5,998	63,281	58,645
2001	13.67	14,600	29,946	12,842	10,488	18	5,780	0	7,065	5,513	55,651	51,745
2002	13.41	7,300	14,679	2,550	2,083	9	4,512	0	3,847	2,932	25,597	24,214
2003	12.98	3,650	7,107	0	0	5	3,916	0	2,220	1,354	13,248	12,381
2004	13.28	0	0	0	0	0	0	0	0	0	0	0
2005	12.68	0	0	0	0	0	0	0	0	0	0	0
2006	11.89	0	0	0	0	0	0	0	0	0	0	0
2007	11.25	0	0	0	0	0	0	0	0	0	0	0
2008	10.71	0	0	0	0	0	0	0	0	0	0	0
2009	10.28	0	0	0	0	0	0	0	0	0	0	0
2010	10.12	0	0	0	0	0	0	0	0	0	0	0
		372,300	623,772	240,032	212,894	465	165,125	1	177,137	36,162	1,206,532	1,039,419

Notes: All dollars have been deflated to 1985 value. Inflation factors based on Department of Revenue "Revenue Sources", January, 1986, page 40. Oil price projections based on Department of Revenue "Petroleum Production Revenue Forecast", December, 1986. Annual oil production projections from "Historic and Projected Oil and Gas Consumption", Department of Natural Resources, January 1986, page 11.

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