

**ALASKA LEGISLATURE**

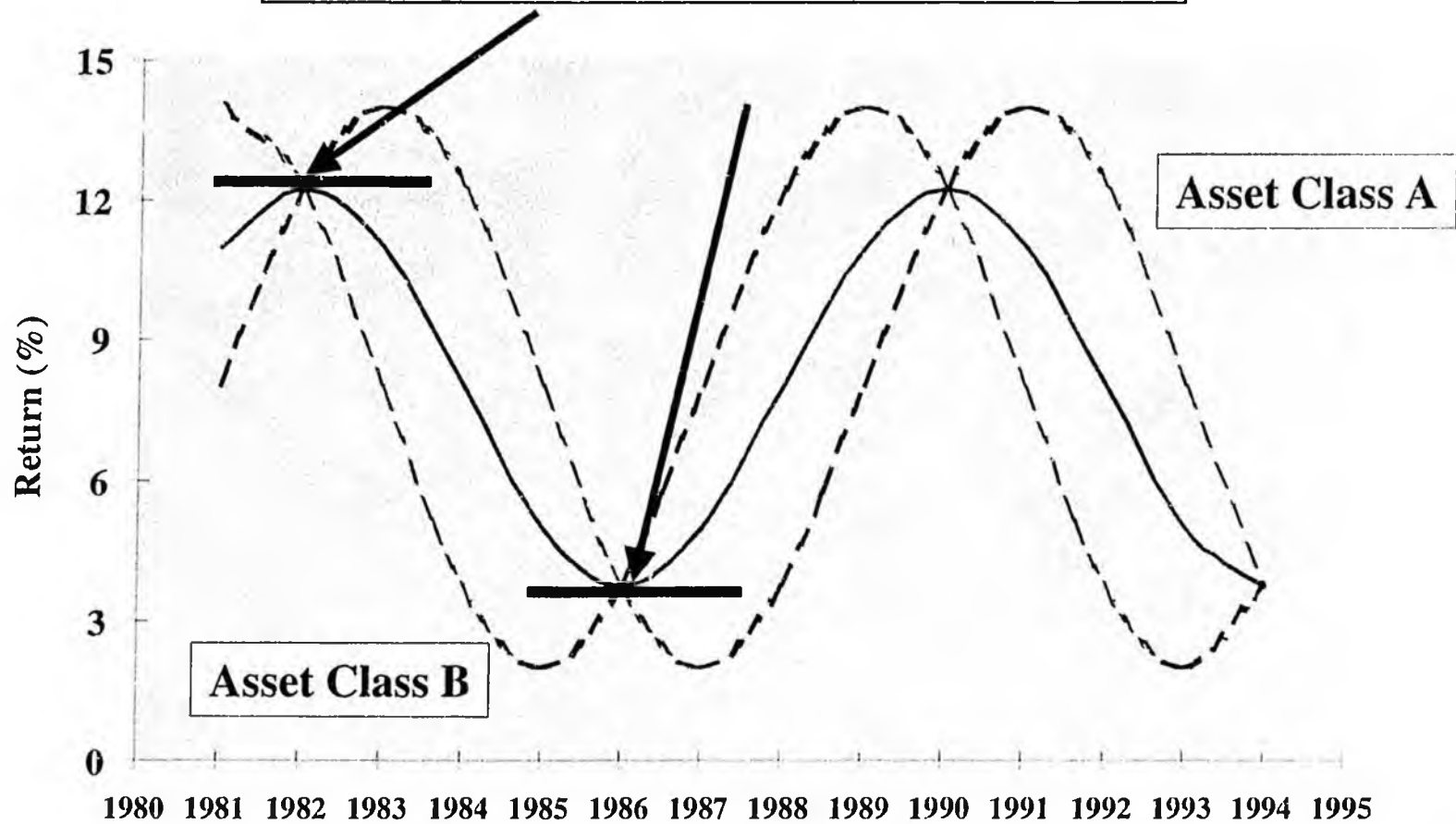
**1883**

**HOUSE and SENATE FINANCE COMMITTEE FILES, 1999 - 2000**

39

# Correlation and Diversification

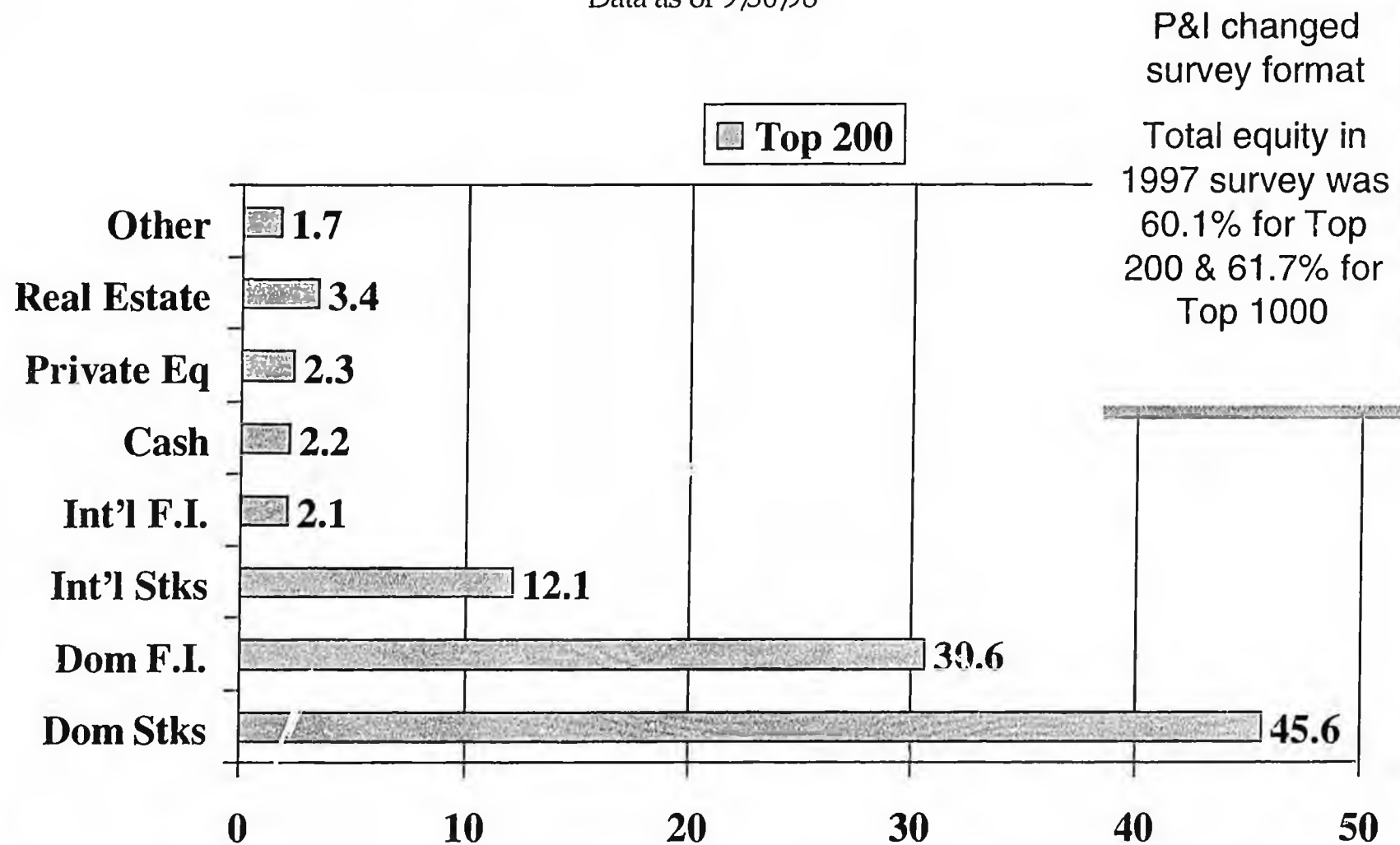
**Portfolio Volatility Reduced  
with 50% Asset Class A & 50% Asset Class B**



# Large DB Plan Diversification

Pensions & Investments 1/25/99

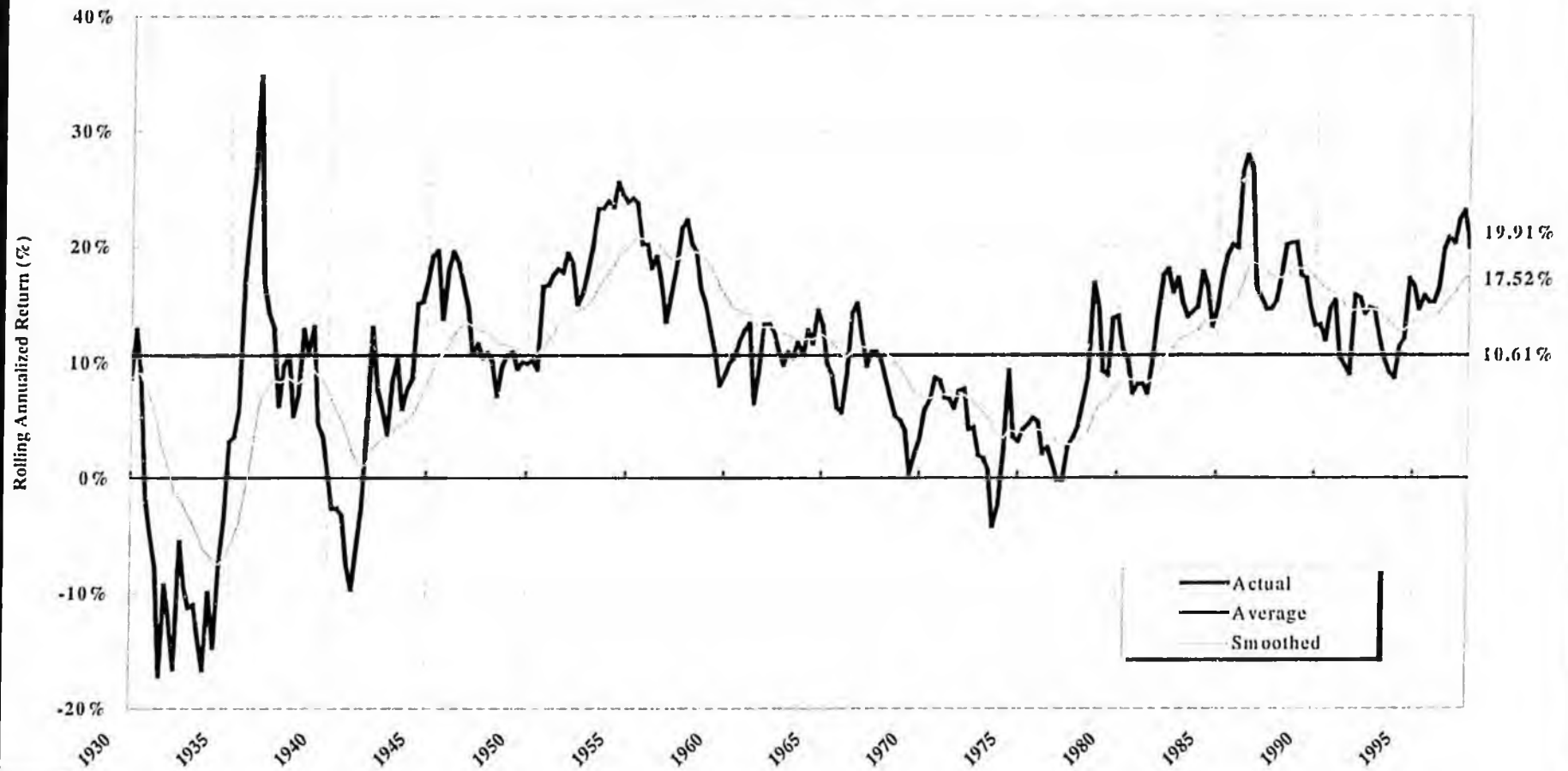
Data as of 9/30/98



# S&P 500

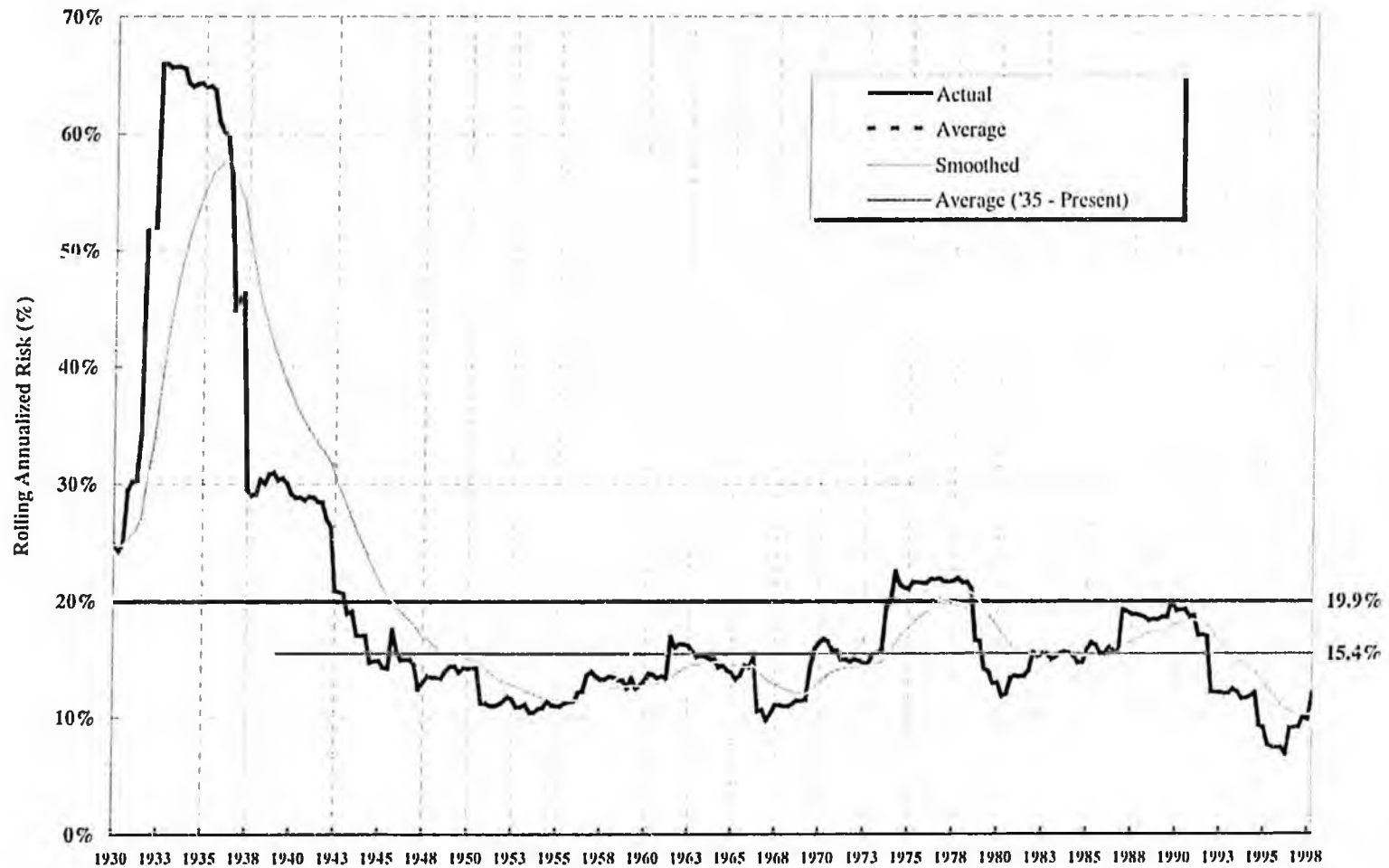
## Rolling 5 Year Returns

Rolling 5 Year Return for S&P 500  
(1926 - Present)



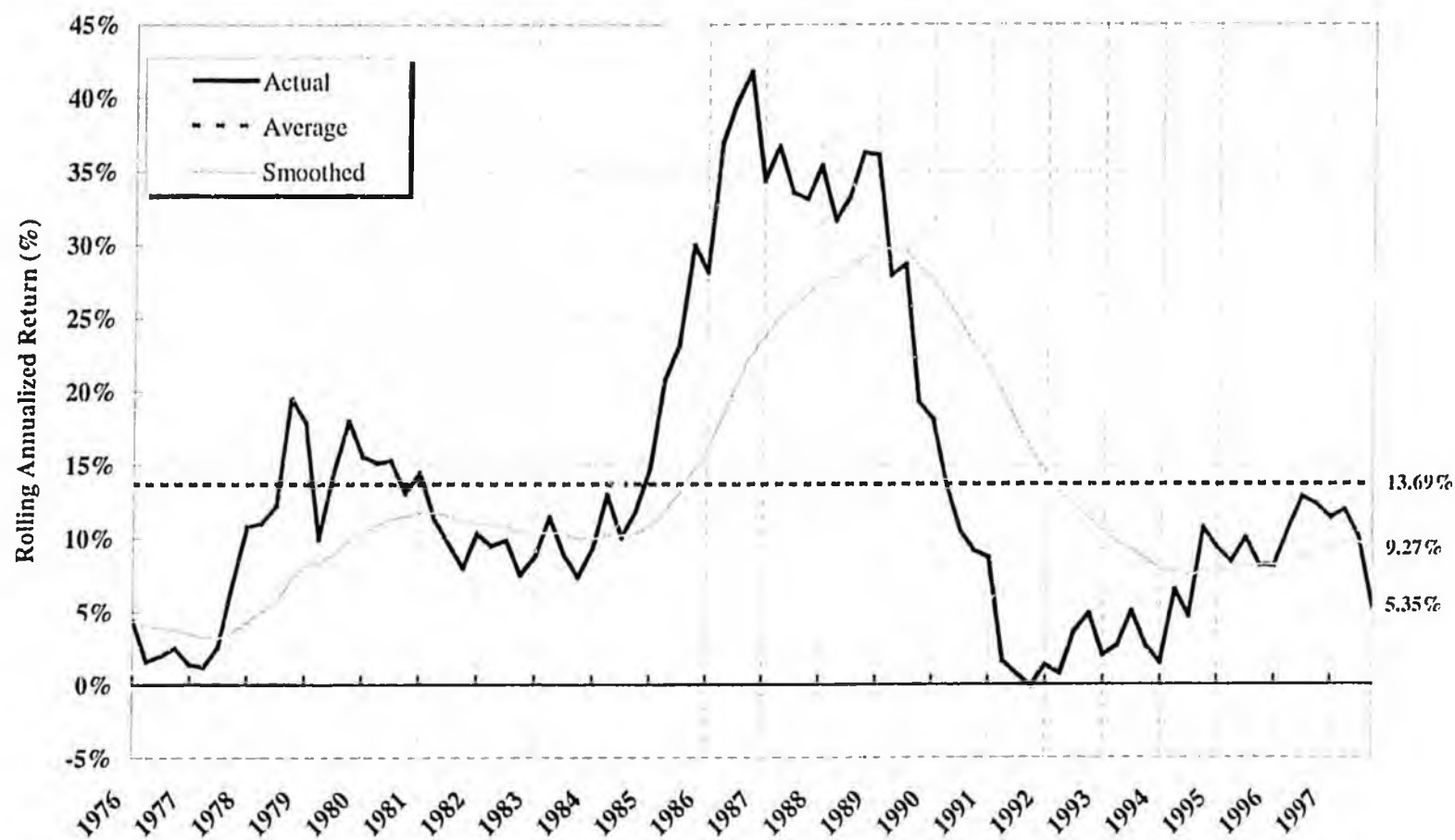
# S&P 500 Historic Risk Perspective

Rolling 5 Year Standard Deviation for S&P 500 (1926 to Present)



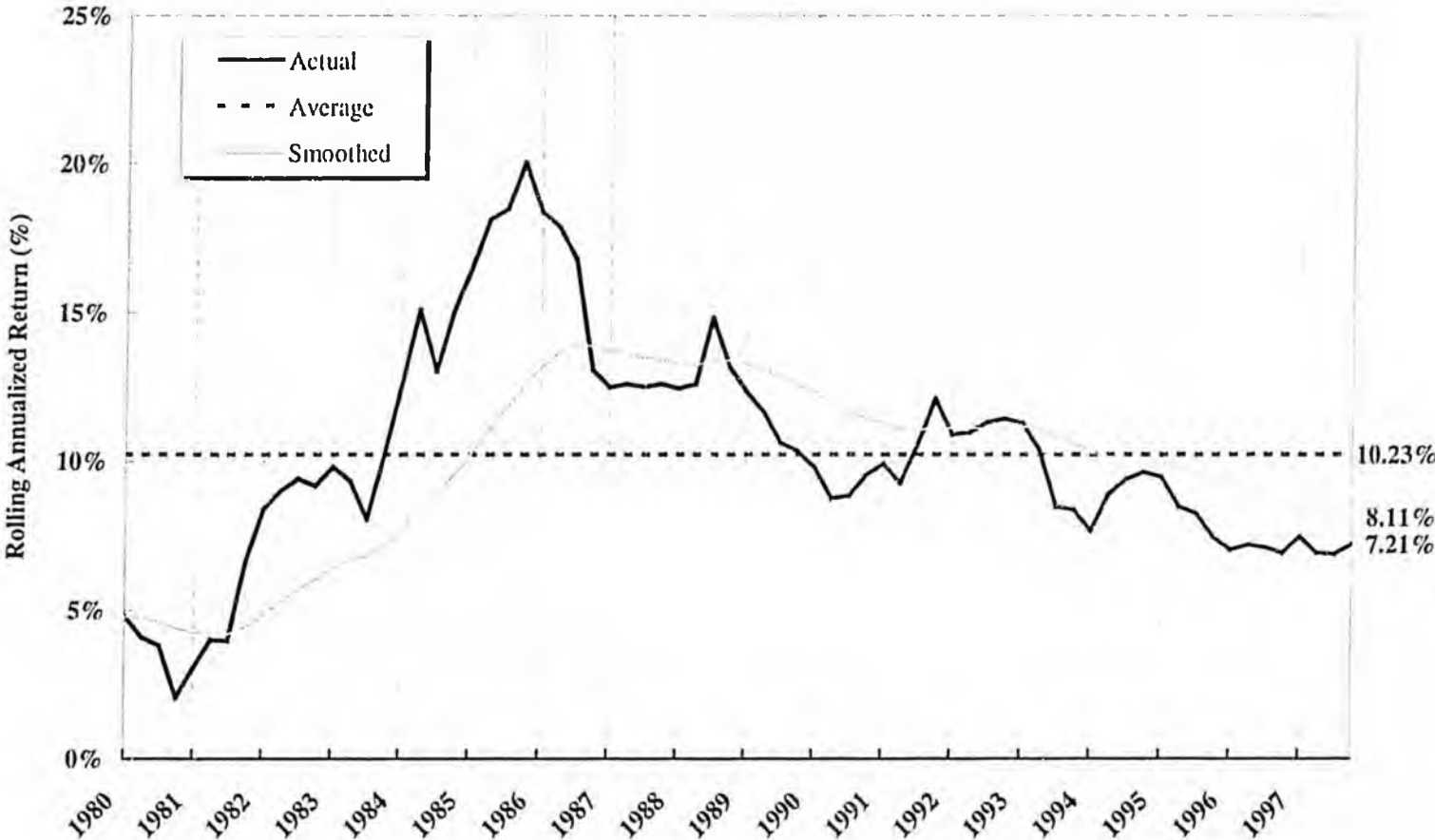
# International Equity Returns

## Rolling 5 Year Return for MSCI EAFE



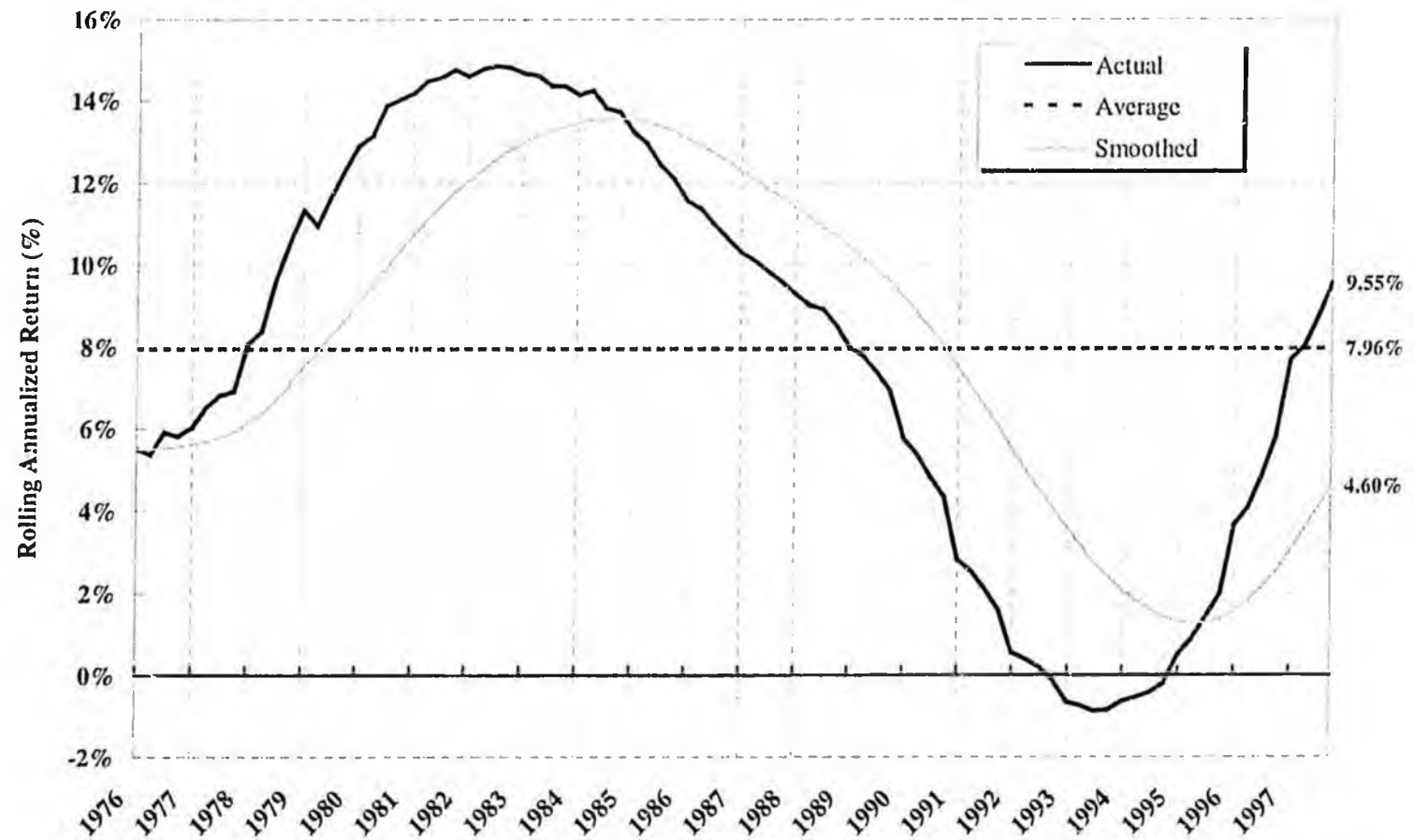
# Bond Returns

## Rolling 5 Year Return for Lehman Aggregate



# Real Estate Recovery

Rolling 5 Year Return for CRES



# Large Cap Domestic Equity

## 1950-1998

(195 quarters of rolling 5-year data - first five-year period begins in 1950)

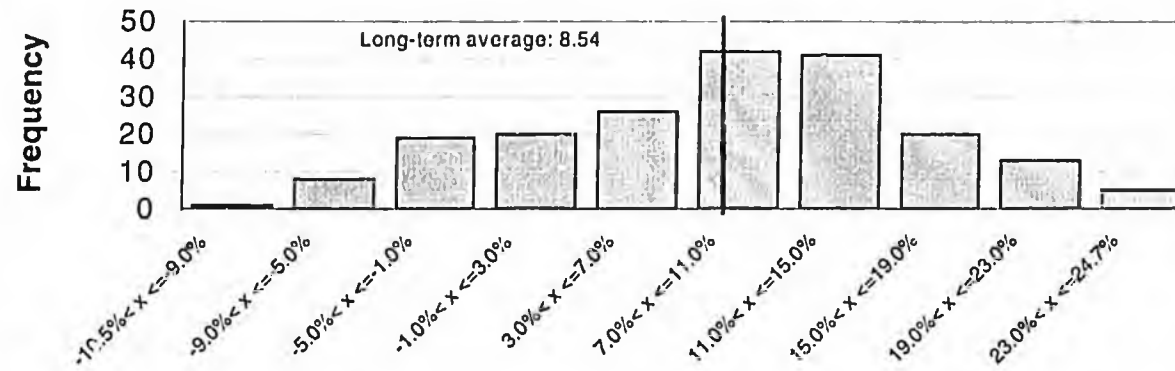
Defining flat inflation as -1.5 to 1.5 percent change in a five-year period

	Large Cap		Large Cap	
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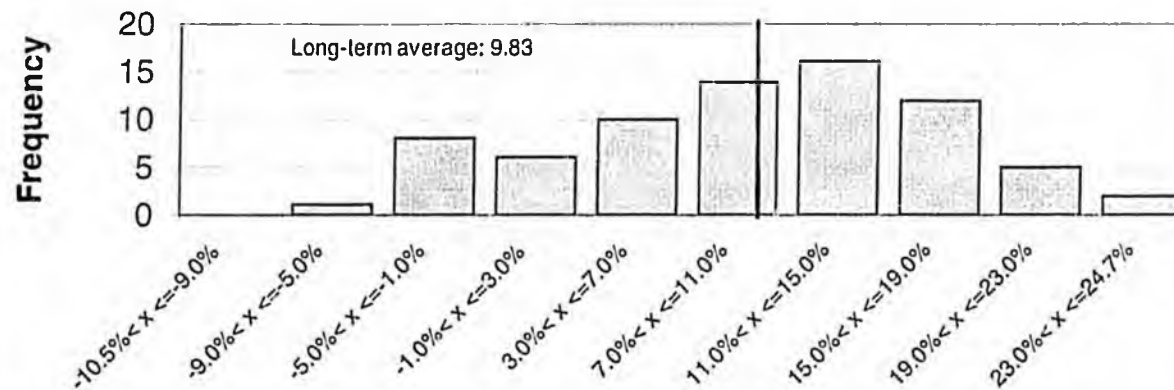
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# Distribution of Large Cap Real Returns

All Scenarios 1950-1998 (195 quarters)

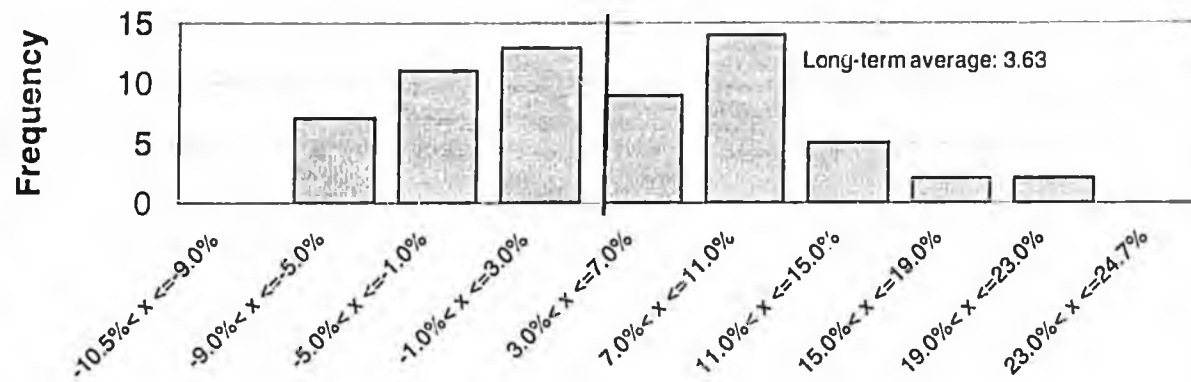


Level Scenario 1950-1998 (74 quarters)

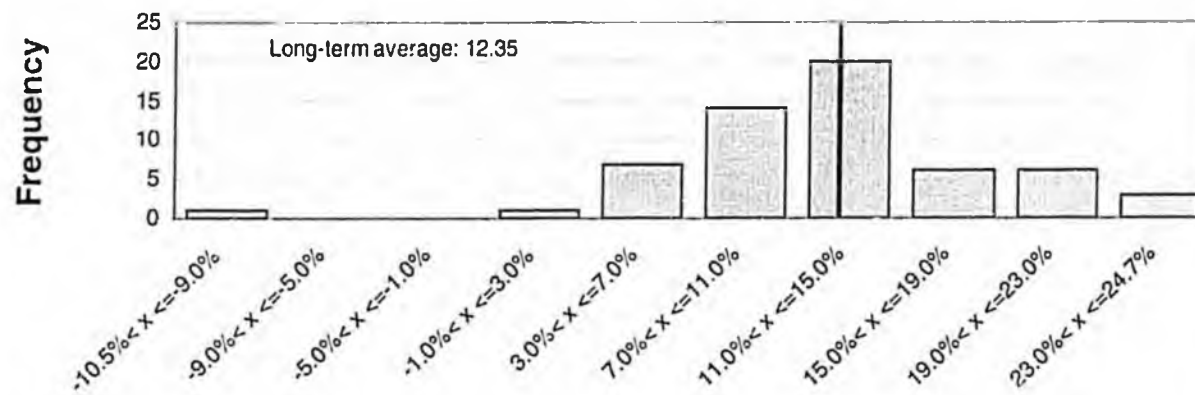


# Distribution of Large Cap Real Returns

Rising Scenario 1950-1998 (64 quarters)



Falling Scenario 1950-1998 (57 quarters)



# The Economic Environment for the Next Five Years

- U.S. economy coming off third straight year of GDP growth >3%, and is eight years into the current expansion...
- Despite troubles in Asia and Russia, and the potential for problems spreading to Latin America
- Inflation remains low, despite lowest unemployment in 28 years
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- Risk of recession is real, but receding

## We Have a Point of View

- The U.S. economy will slow, but avoid recession
- Asian financial crisis has stabilized. Asia is in recession, but the bottom seems in sight.
- The dollar appears to have peaked.
- Inflation is near its trough.
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# As Usual - All Forecasts Are Consistent With Long Term Record & Based On Sound Fundamentals

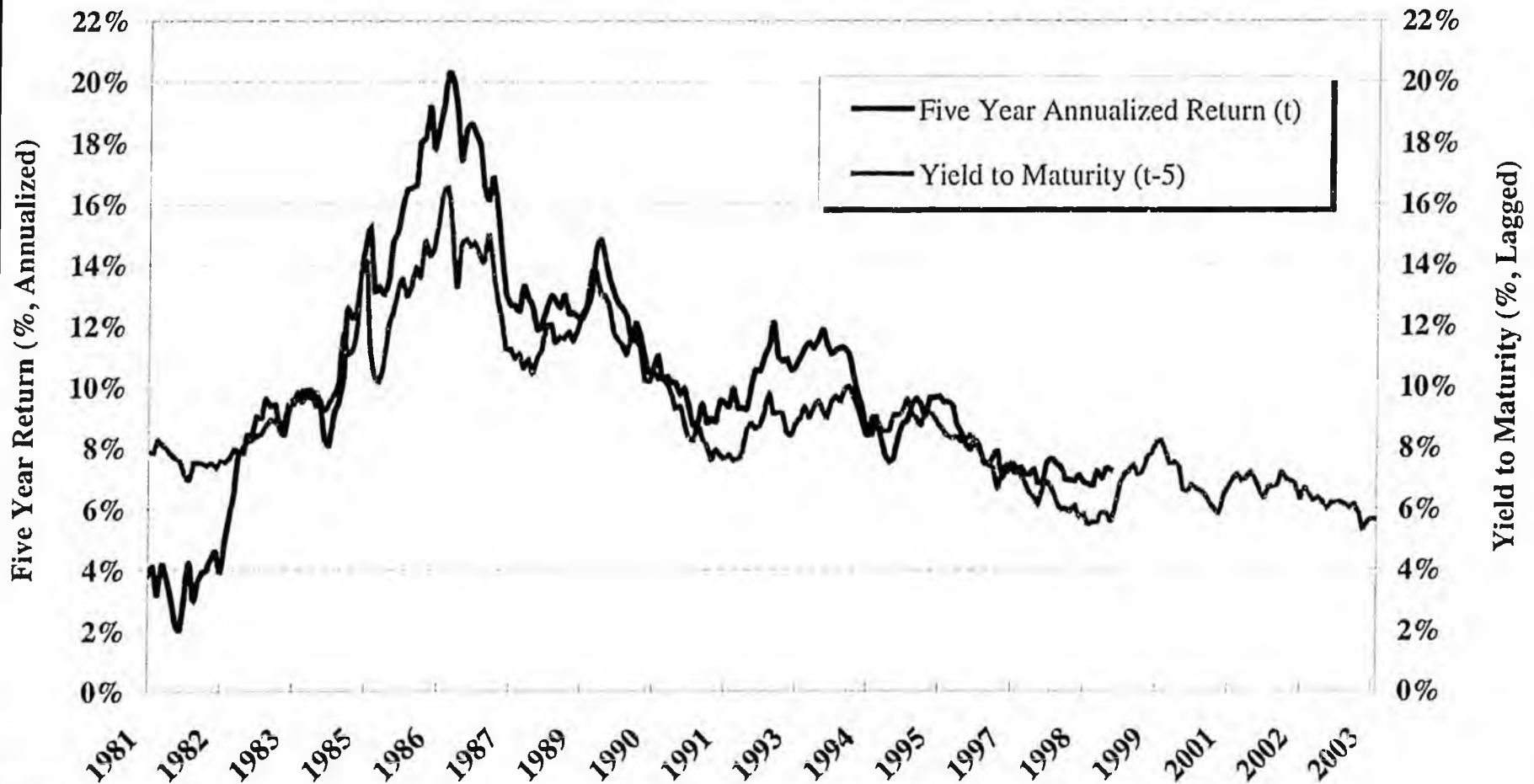
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  - ✓ Over the long term;
    - Stocks earn more than bonds
    - Bonds earn more than cash
    - Unlevered real estate something between the two
  - ✓ We forecast the range of returns
    - Stocks = 9% plus or minus 15%
    - Two thirds of the time, we expect the 12 month return for the S&P to be between 24% and negative 6.0%
    - One third of the time it may be either higher or lower
  - ✓ Stocks, particularly small cap & int'l stocks, are riskier than bonds

# Where are we today?

- Interest rates are much lower than Dec. 1997
- Stock prices, particularly for a small group of large cap growth companies, are much higher
- P/E ratios are astoundingly high, but are not inconsistent with long-term interest rates
  - markets may be overvalued, but the high p/e overstates the problem
  - almost all appreciation in the S&P500 during 1998 was due to price appreciation - earnings growth has disappeared, and is not likely in 1999

# Current Yield To Maturity Future Bond Returns

Lehman Aggregate Bond Index 5 Year Returns vs. Lagged Yield to Maturity

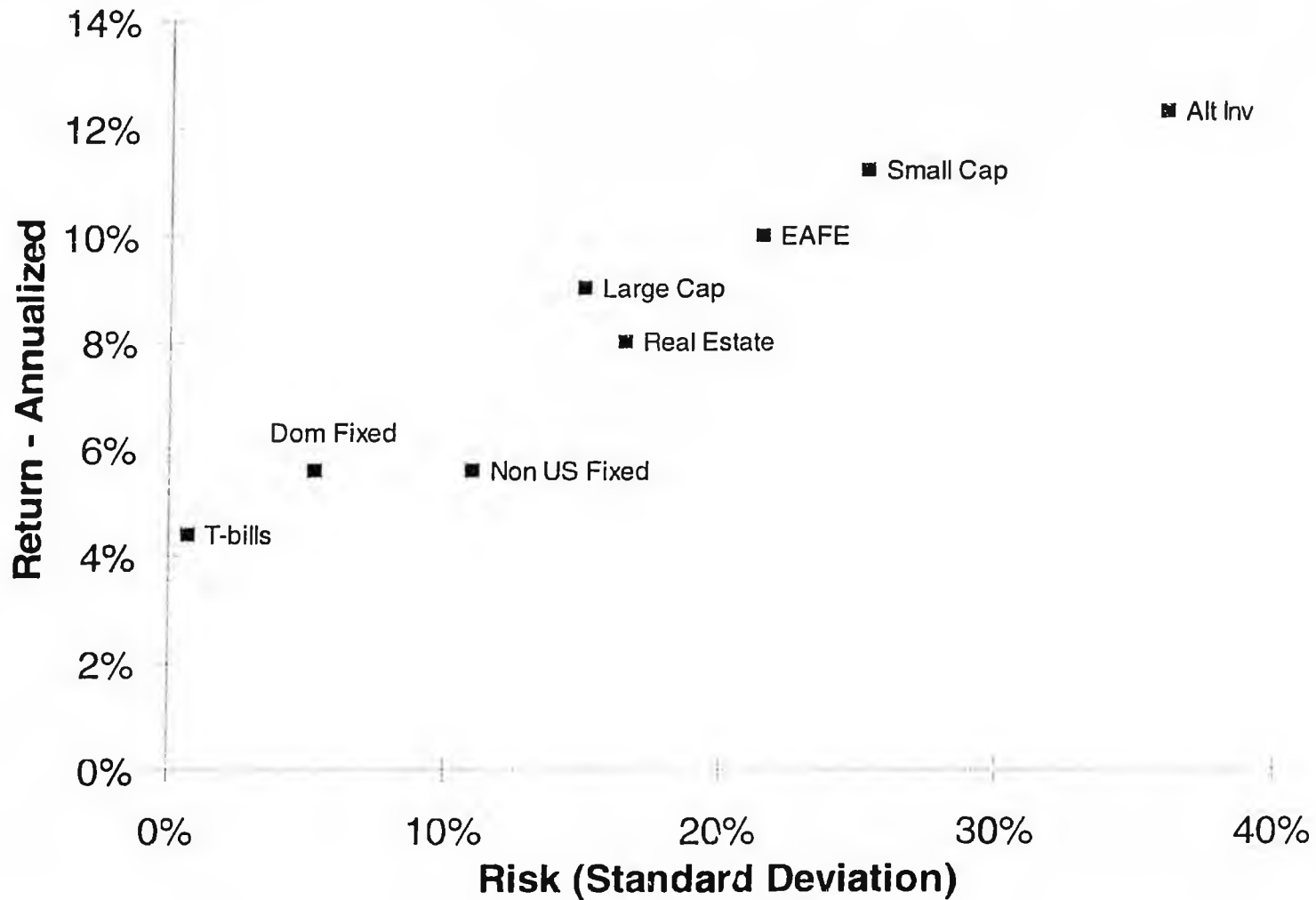


## 1999 Capital Market Projections

Asset Class	Index	Expected Return			Expected Risk		
		1998	1999	Change	1998	1999	Change
<b>Equities</b>							
Large Cap	S&P 500	9.10	<b>9.00</b>	-0.10	13.30	<b>15.00</b>	1.70
Small Cap	CAI Small	10.10	<b>11.20</b>	1.10	19.10	<b>25.30</b>	6.20
International	MSCI EAFE	9.60	<b>10.00</b>	0.40	18.50	<b>21.50</b>	3.00
<b>Fixed Income</b>							
Domestic	LB Agg	6.60	<b>5.60</b>	-1.00	5.50	<b>5.30</b>	-0.20
International	SB Non-US	6.55	<b>5.60</b>	-0.95	11.20	<b>11.00</b>	-0.20
<b>Other</b>							
Real Estate	CRES	8.25	<b>8.00</b>	-0.25	14.50	<b>16.50</b>	2.00
Alternatives	Veco 100	12.30	<b>12.30</b>	0.00	35.00	<b>36.00</b>	1.00
Cash Equiv.	90-day T-bill	4.80	<b>4.40</b>	-0.40	1.00	<b>0.70</b>	-0.30
Inflation	CPI-U	3.40	<b>3.00</b>	-0.40	0.95	<b>1.75</b>	0.80

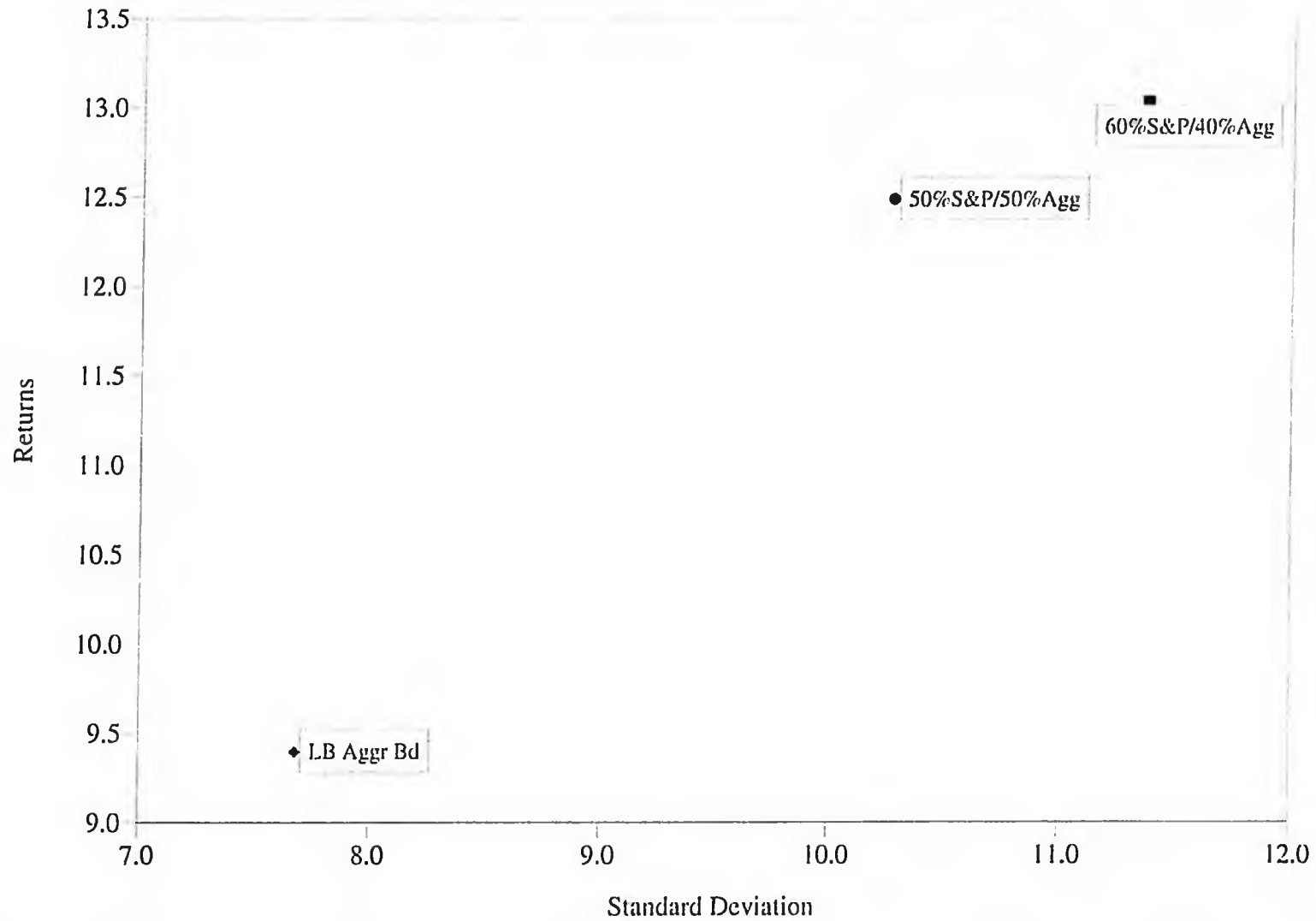
# Five-Year Capital Market Projections

*Higher Returns at the Price of Higher Risk*

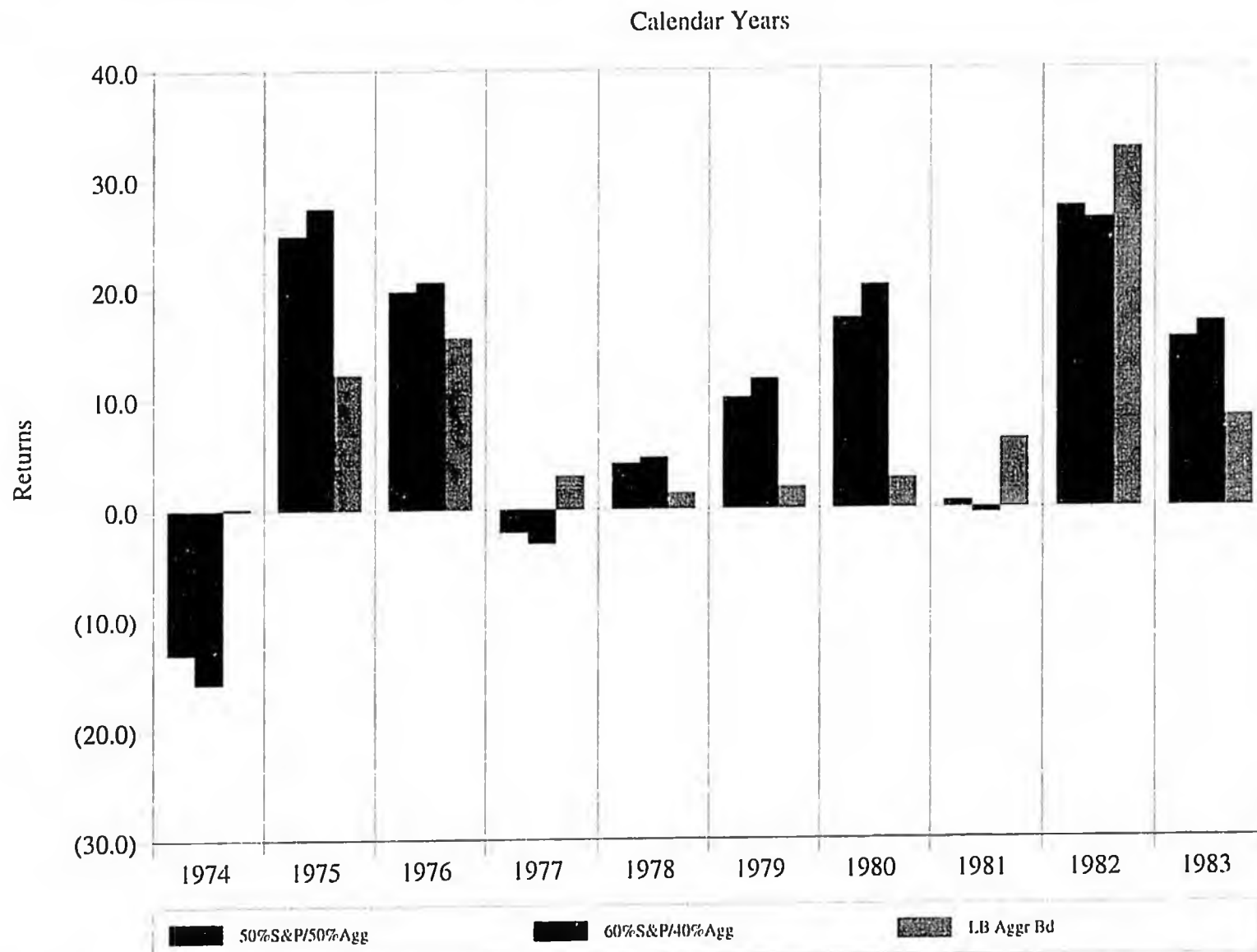


# Historical Risk and Reward

Scatter Chart for 25 Years Ended December 31, 1998

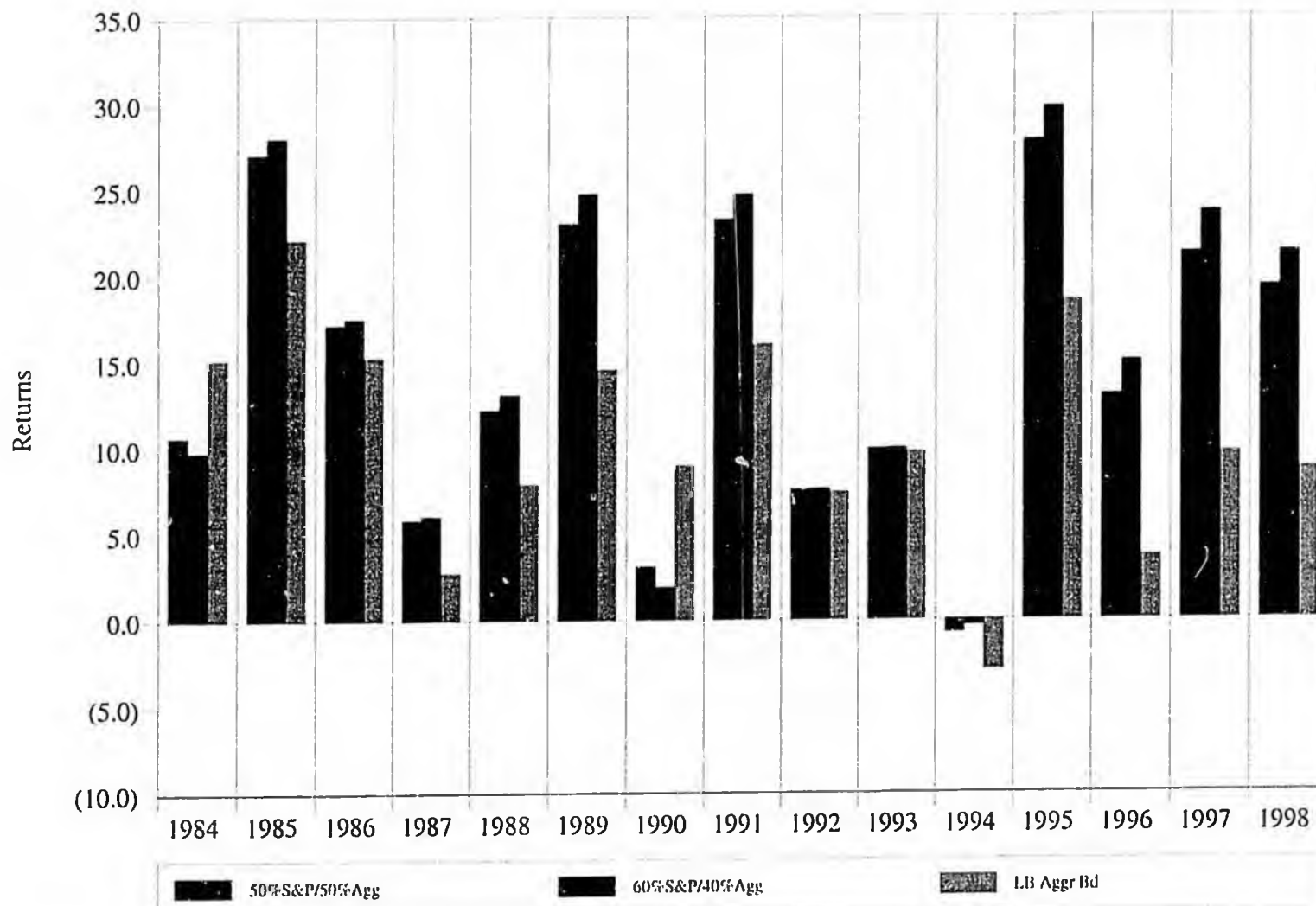


# Calendar Year Returns for 3 Policy Mixes



# Calendar Year Returns

Calendar Years

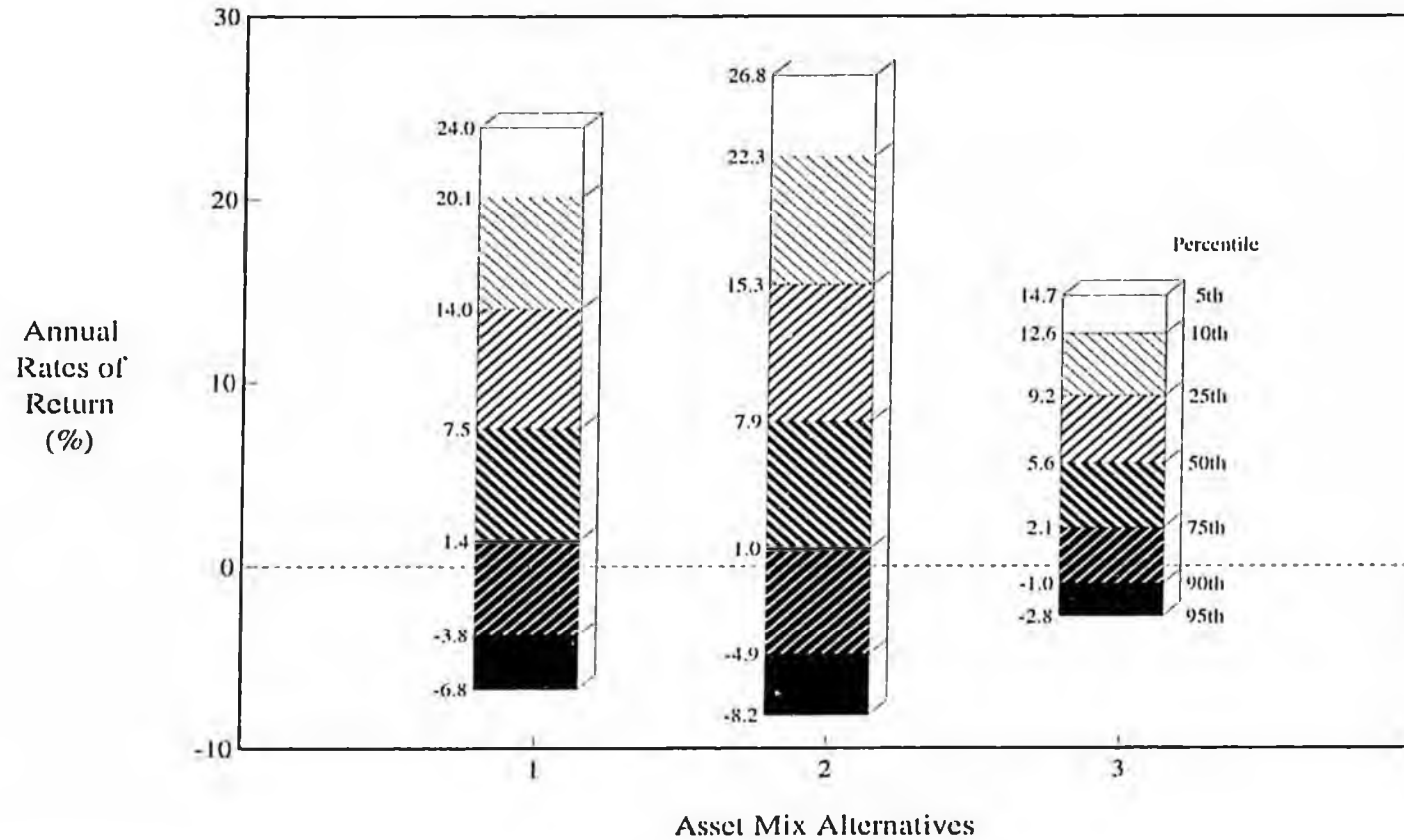


# Projected Return for 3 Policy Mixes

	<u>Asset Mix Alternatives</u>		
Portfolio Component	1	2	3
<b>Broad Dom Equity</b>	<b>50%</b>	<b>60%</b>	<b>0%</b>
<b>LB Agg</b>	<b>50%</b>	<b>40%</b>	<b>100%</b>
<b>Totals</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Median</b>	<b>7.5%</b>	<b>7.9%</b>	<b>5.6%</b>
<b>Std Dev</b>	<b>9.4%</b>	<b>10.7%</b>	<b>5.3%</b>

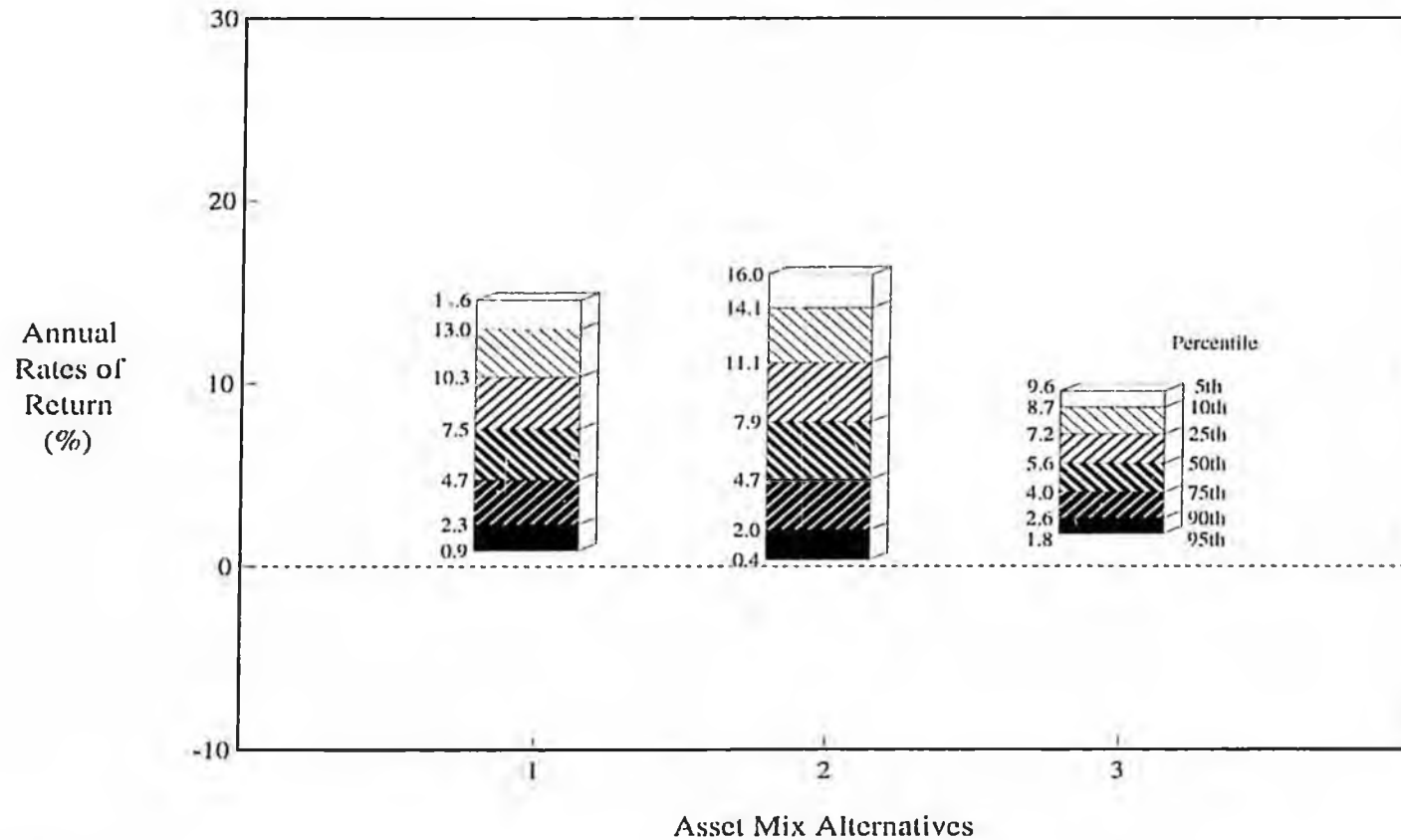
# Projected Range of Returns for the 3 Policy Mixes, over 1 year

Range of Projected Rates of Return  
(Projection period: one year)



# Projected Range of Returns for the 3 Policy Mixes, over 5 years

Range of Projected Rates of Return  
(Projection period: 5 years)



# Alaska State Senate Finance Committee

1999 Capital Market



March 1999  
CALLAN ASSOCIATES

Michael J. O'Connell  
Executive Vice President

# 1999 Capital Market Projections

## *Summary of Today's Presentation*

- Callan Associates background
- Recap of key concepts, tools & terms
- Review of historic returns
- Callan's 1999 five year projections
- Implications of new estimates

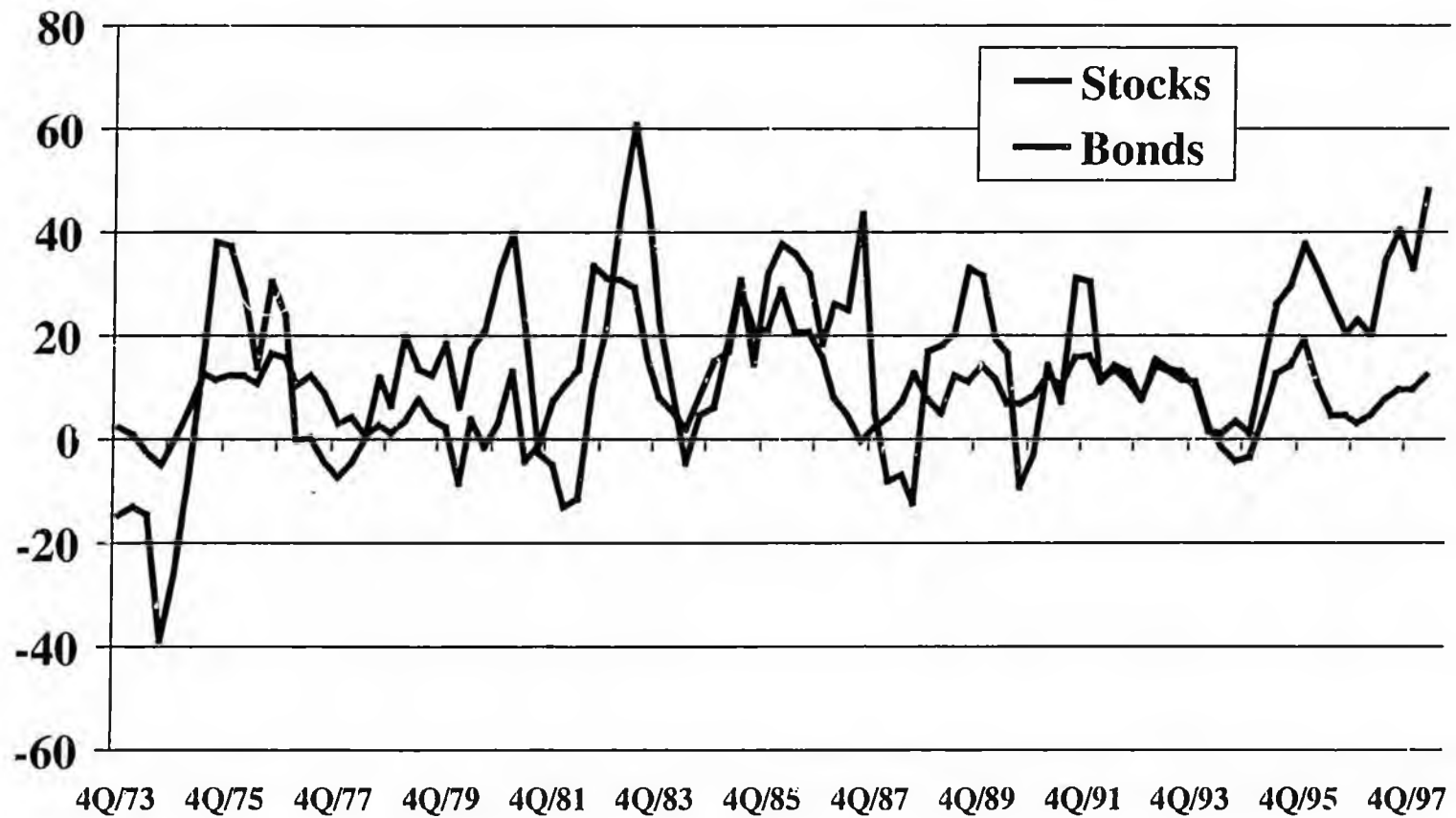
## Callan Associates Inc.

- National pure investment consulting firm
- 290+ Institutional clients nationally who in aggregate have more than \$600 billion
- Headquarters in S.F., offices in Atlanta, Chicago, Denver and Morristown, N.J.
- APFC client since 1989, ASPIB client since 1992
- Services include: strategic planning, asset allocation modeling, manager selection & performance evaluation

# Michael O'Leary CFA

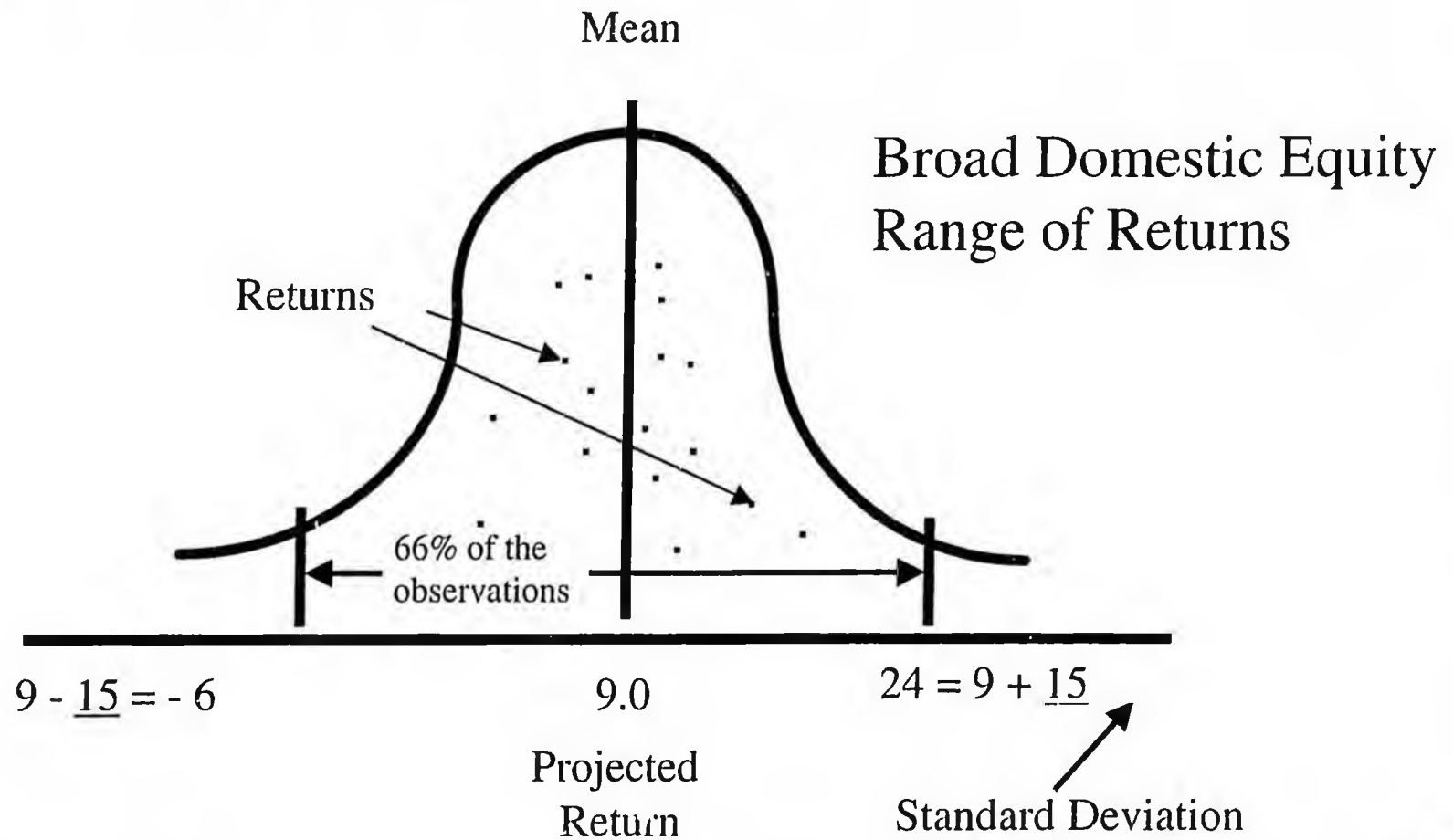
- 30 years of investment experience
- Joined Callan in 1984
- Prior experience with bank trust departments as: analyst, portfolio manager, research director, head of portfolio management
- Currently, Executive VP; member of Management Committee; Vice Chair of Client Policy Review Committee & Chair of Manager Search Committee

# Volatility / Uncertainty

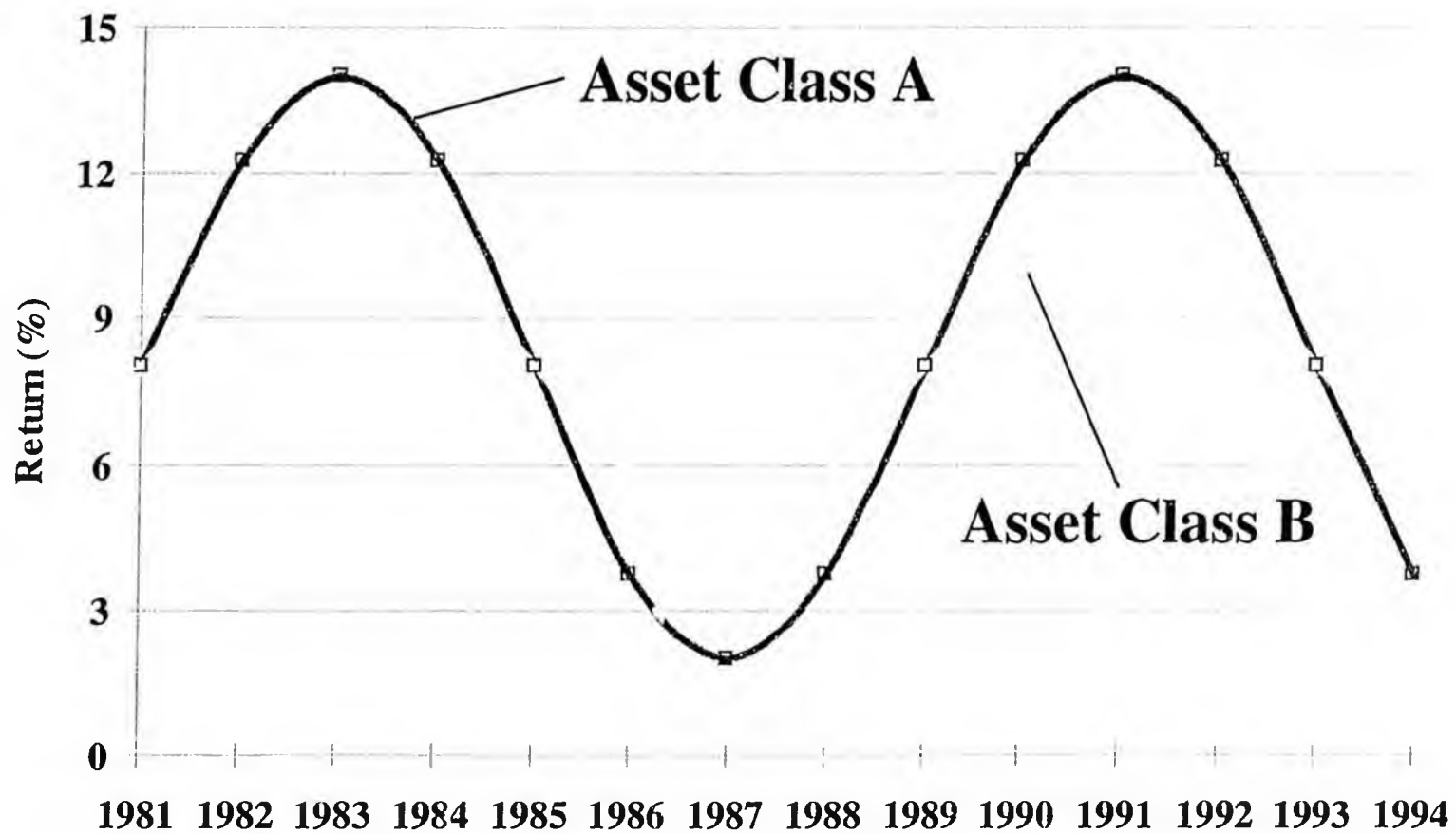


# Measuring Risk

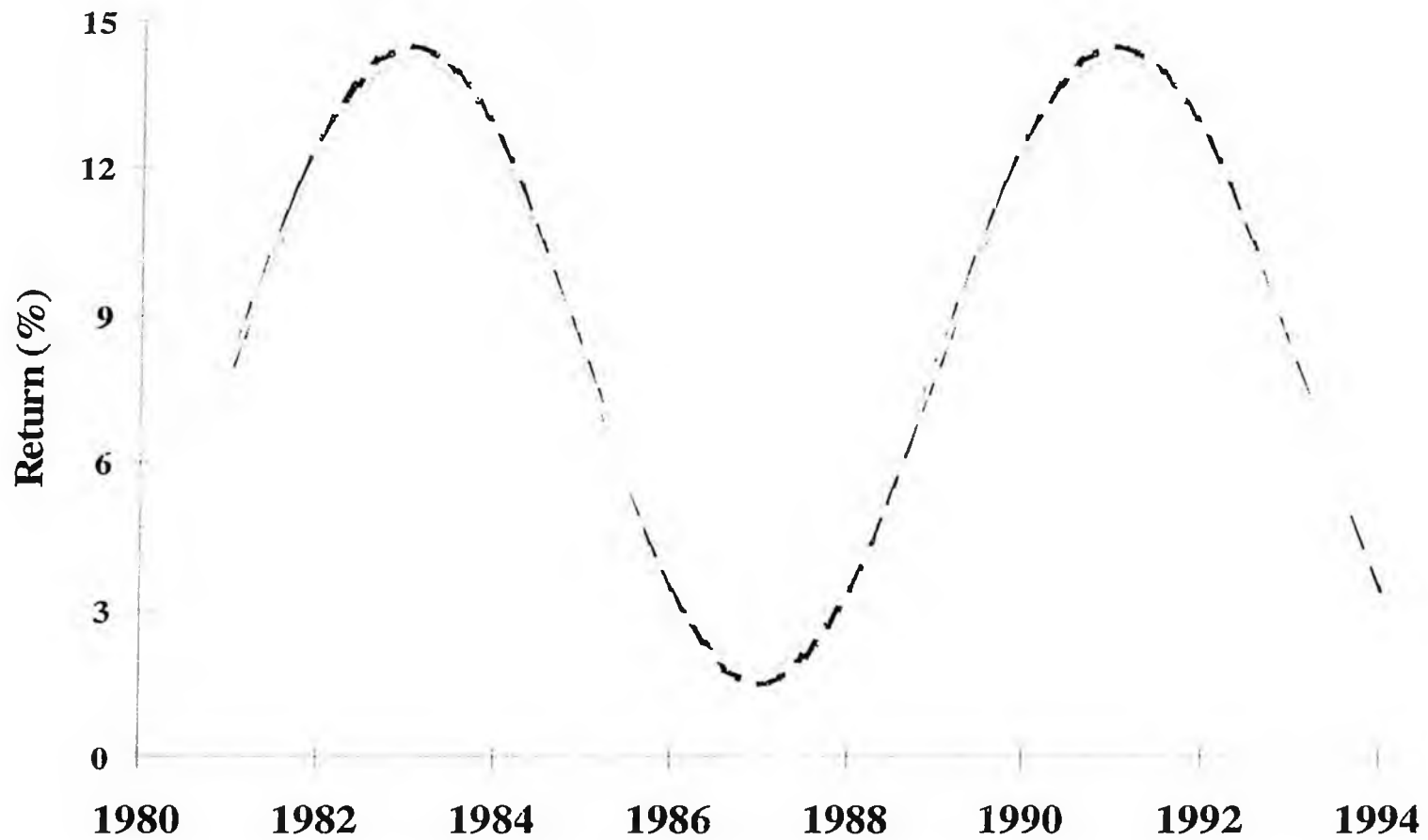
- Standard Deviation - Measures the Variability of Returns from Their Mean



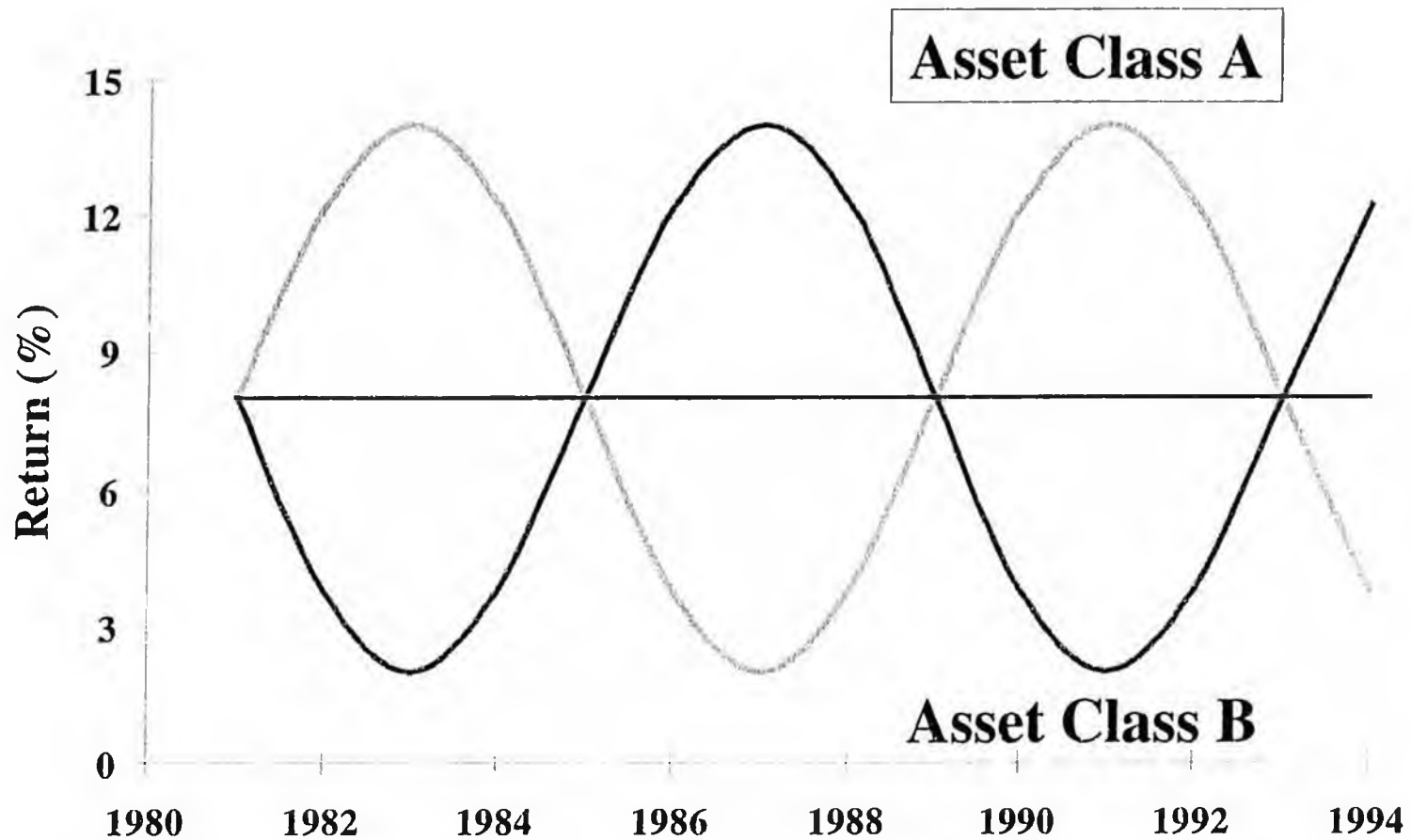
# Returns Will Go Up and Down



# Perfect Correlation (+1)

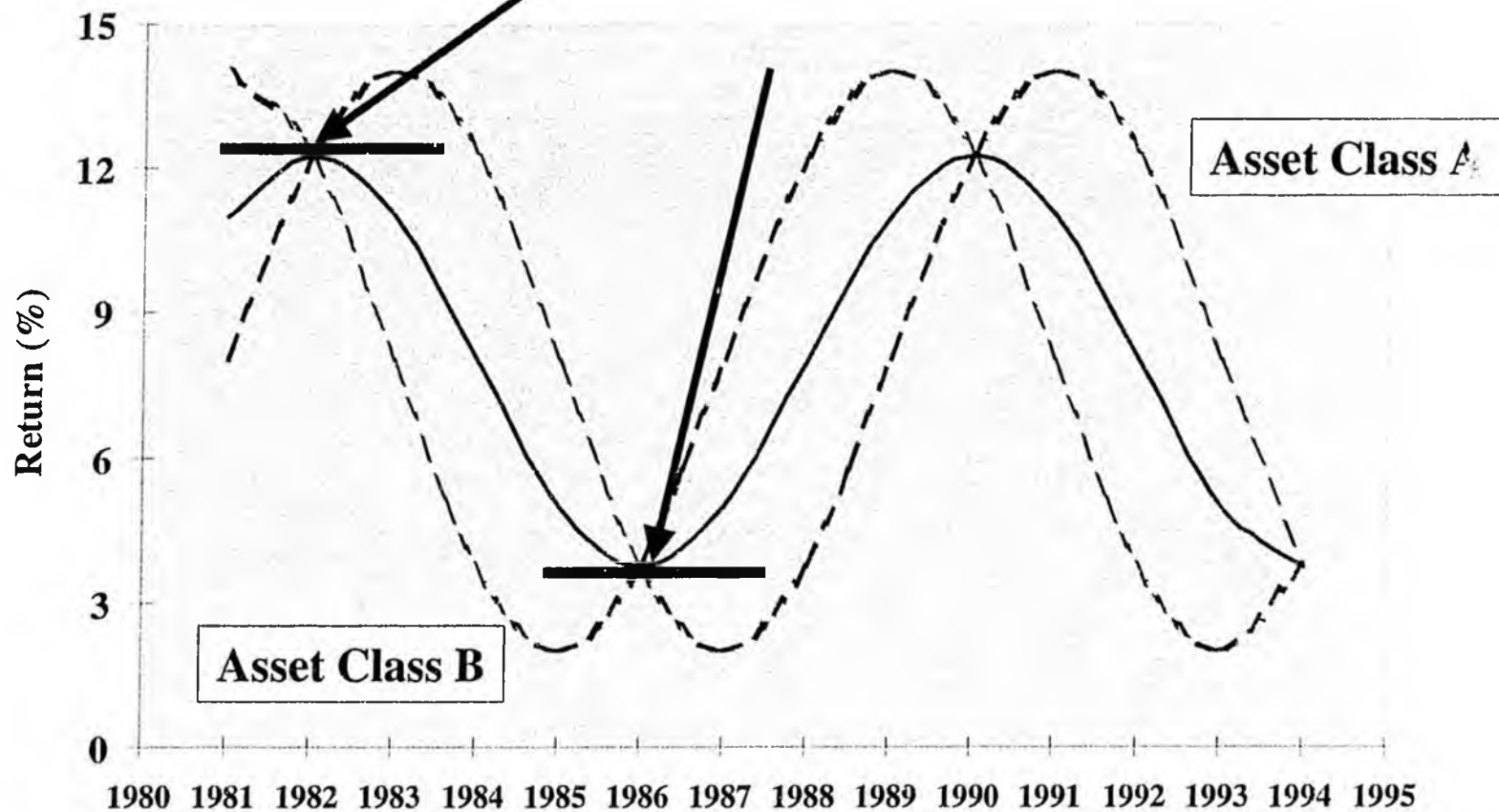


# Perfect Negative Correlation (-1)



# Correlation and Diversification

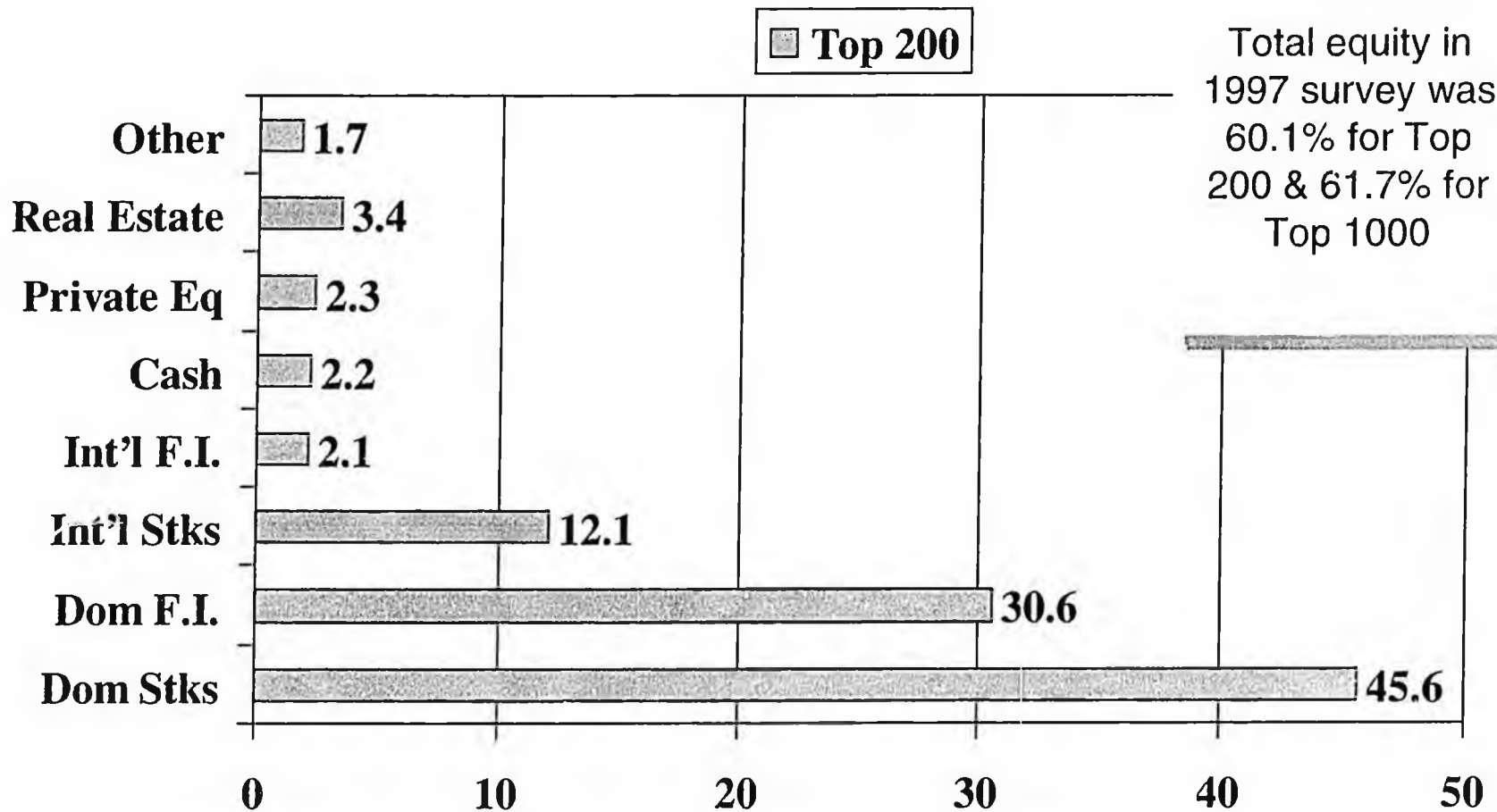
**Portfolio Volatility Reduced  
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# Large DB Plan Diversification

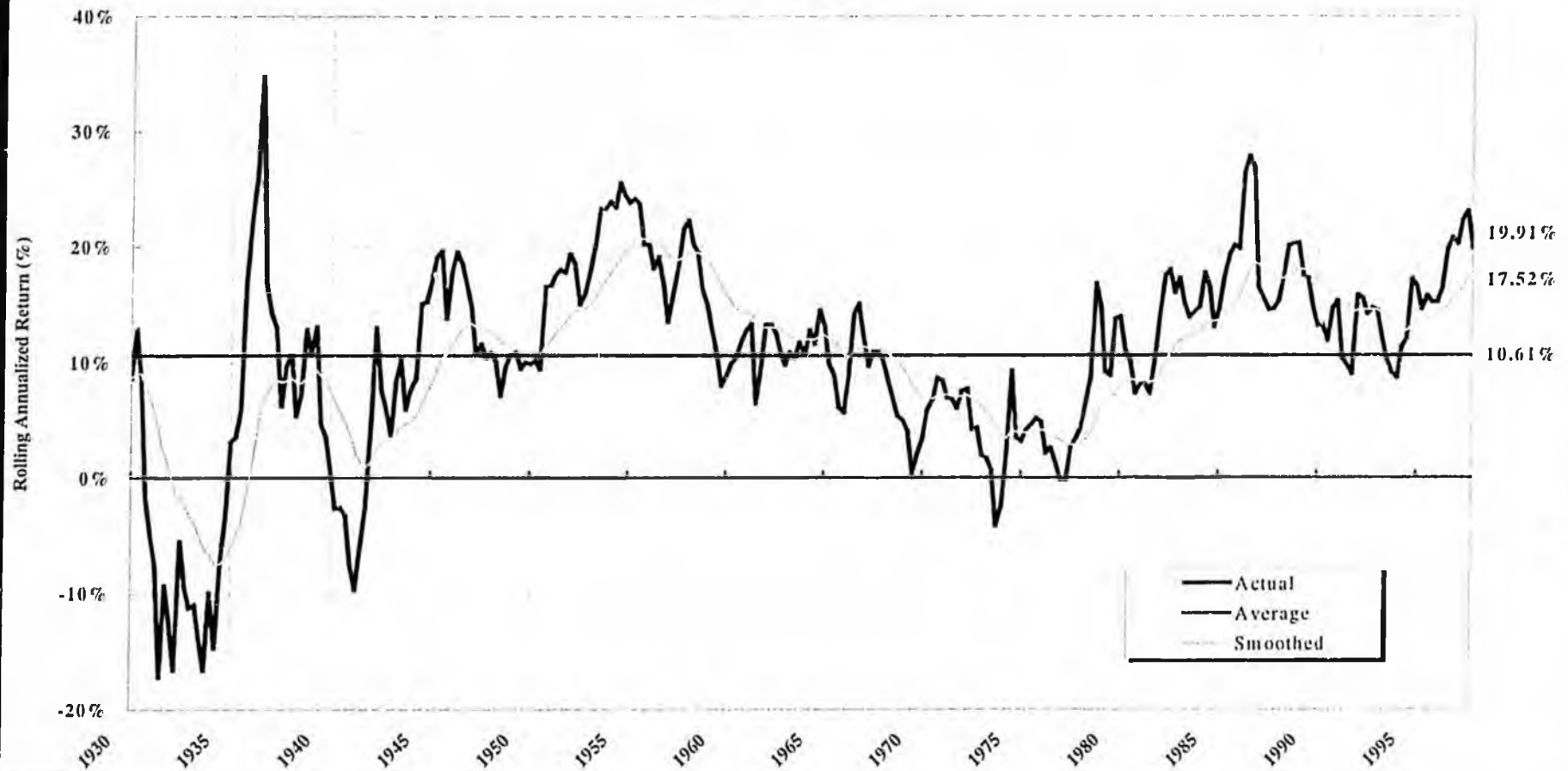
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Data as of 9/30/98



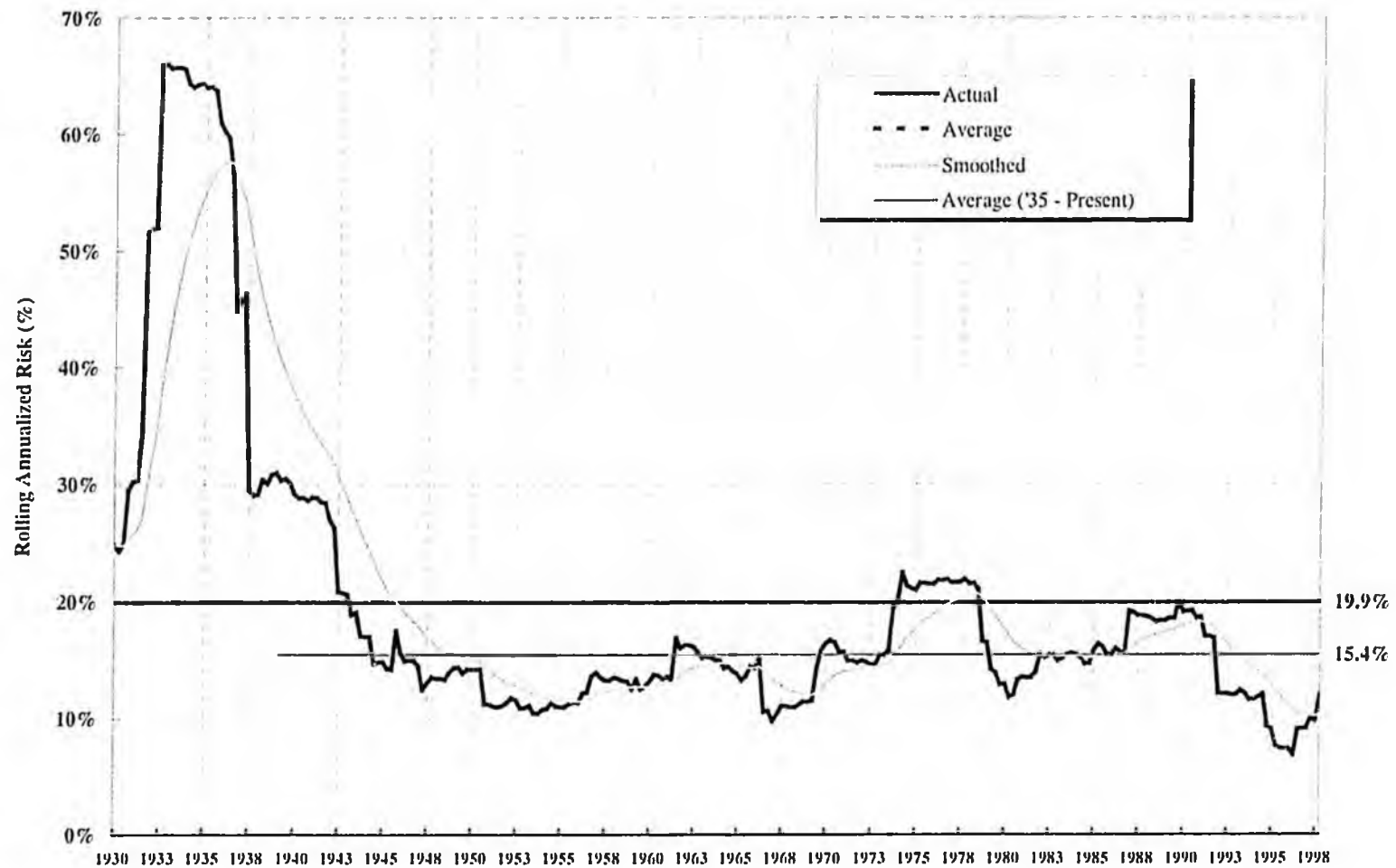
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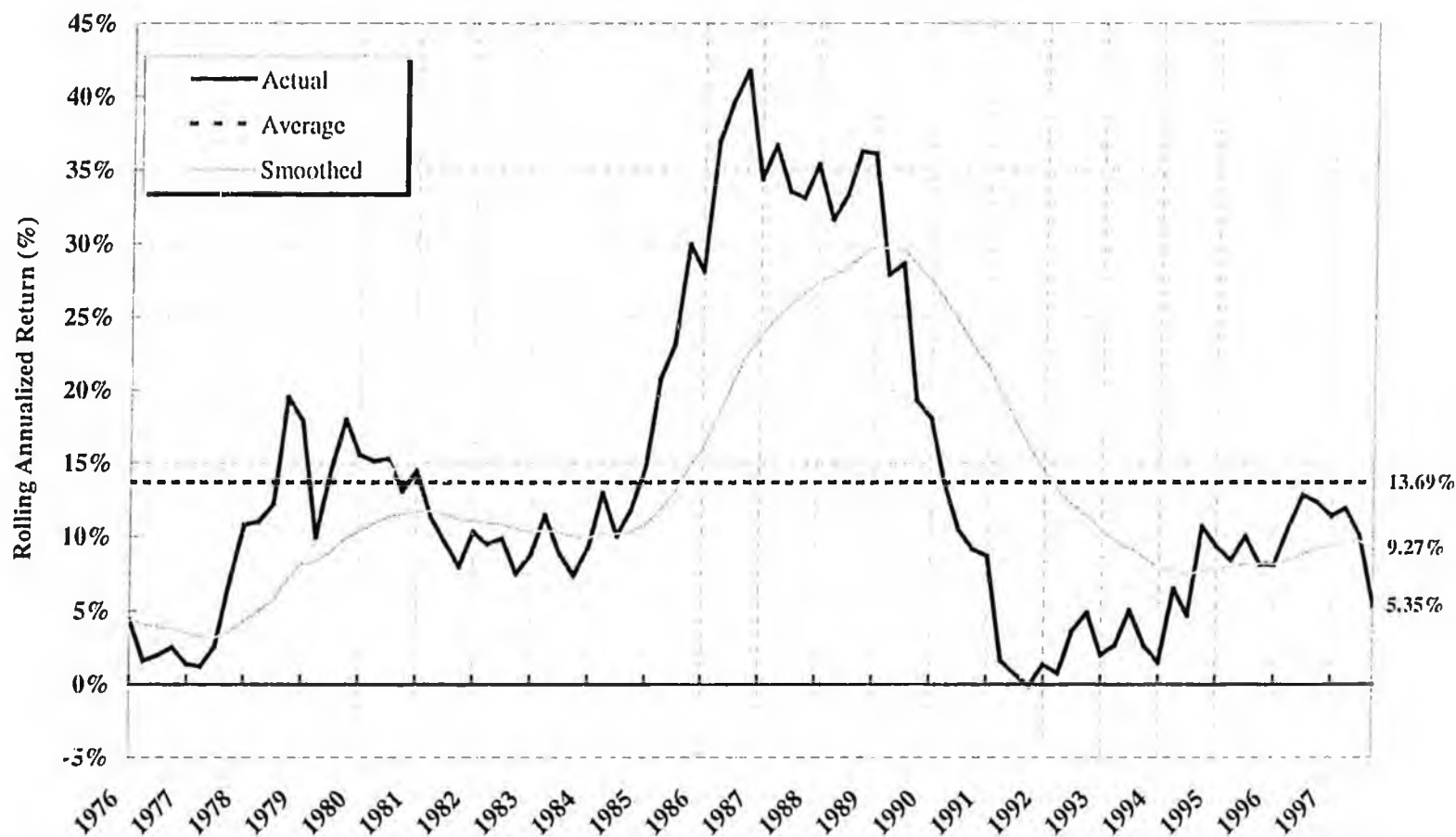
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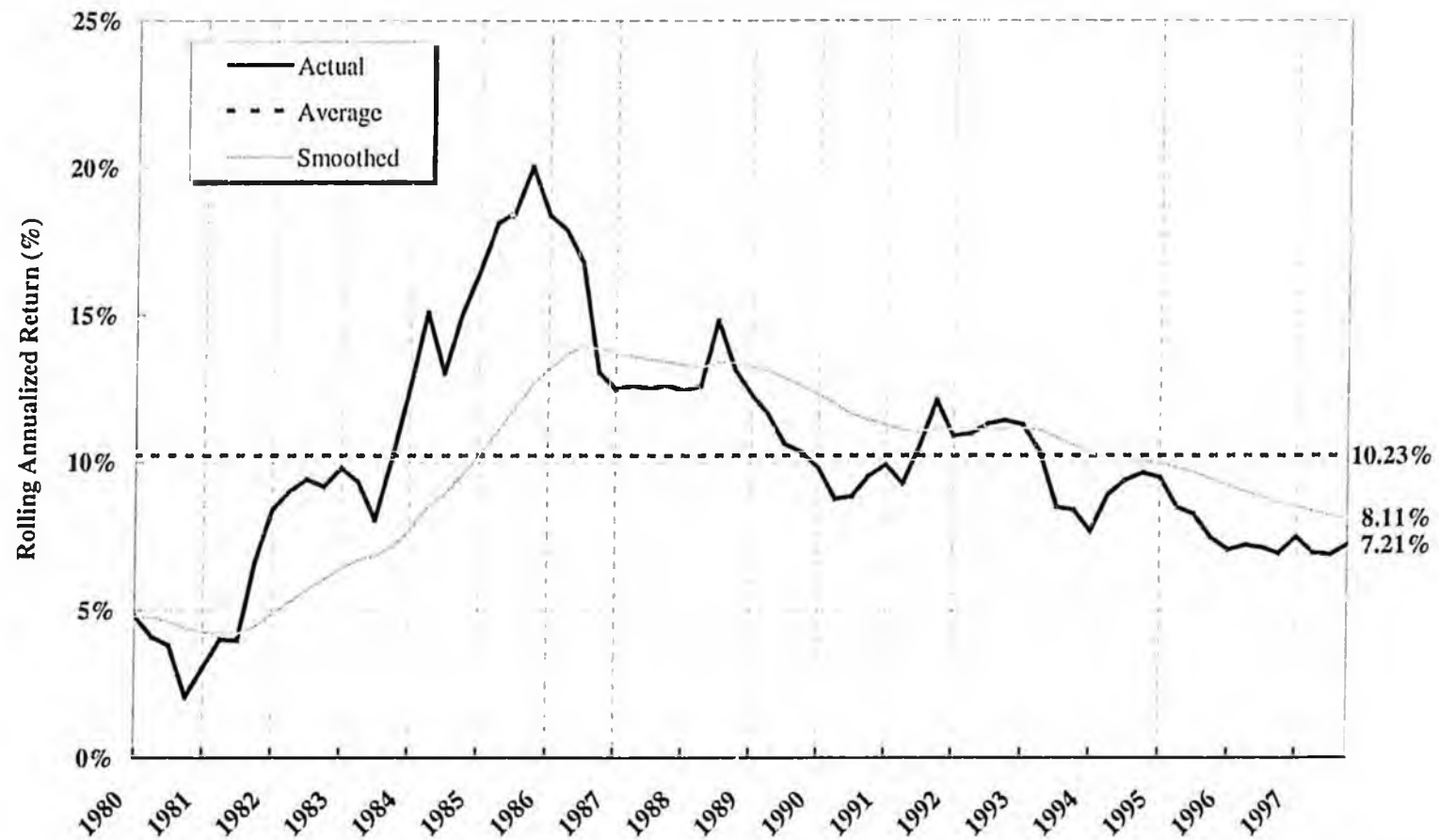
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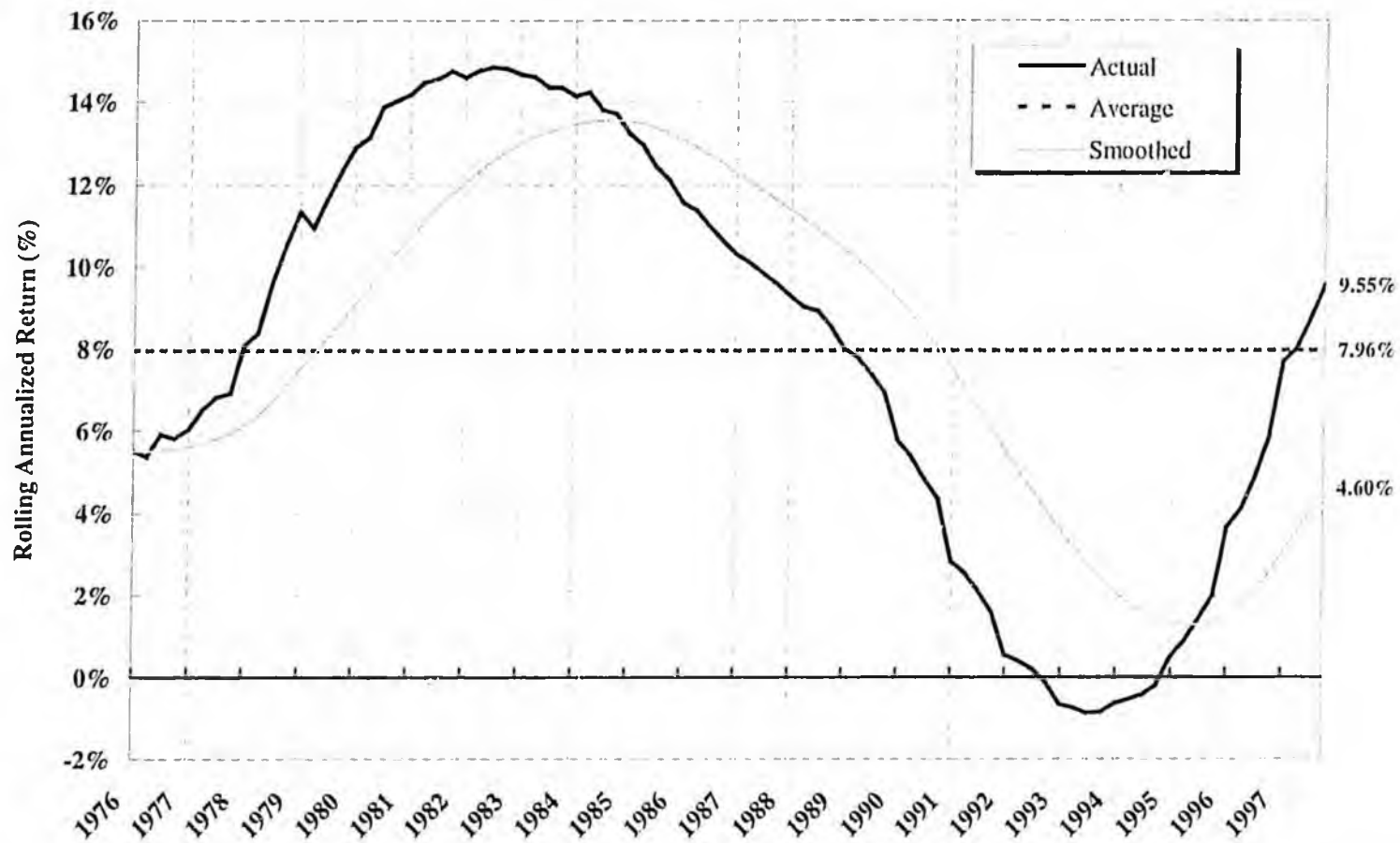
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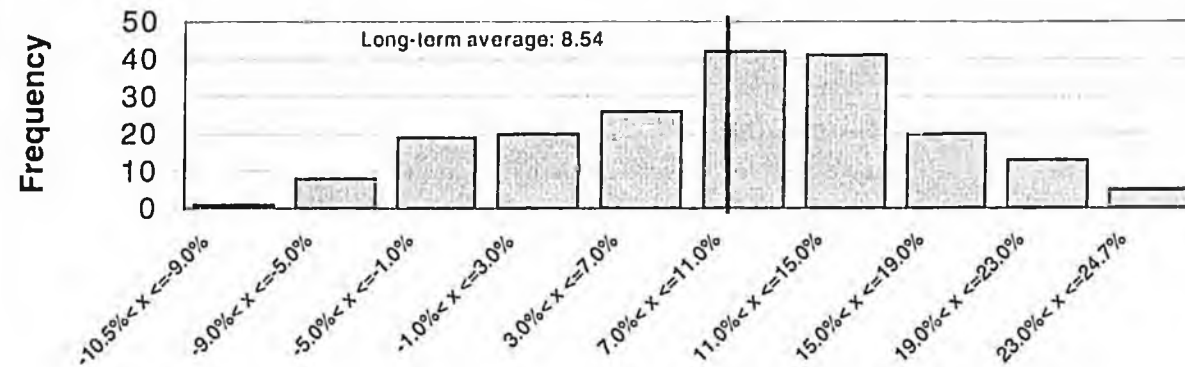
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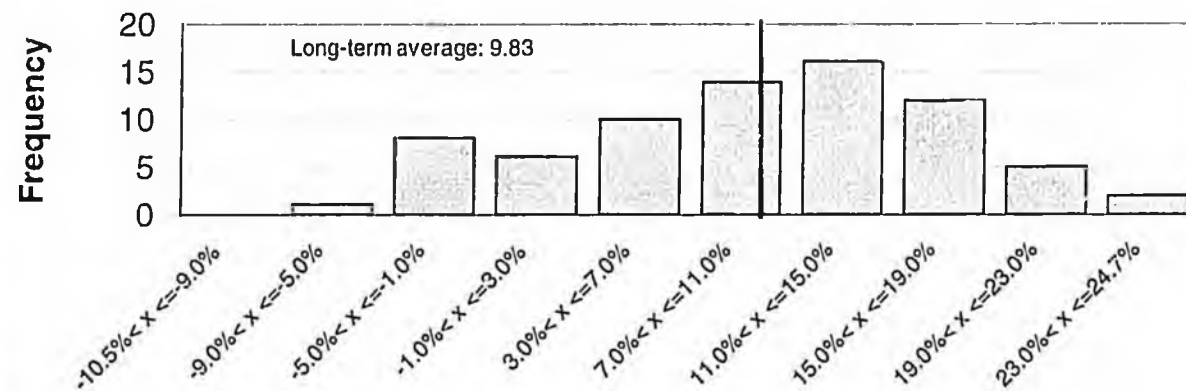
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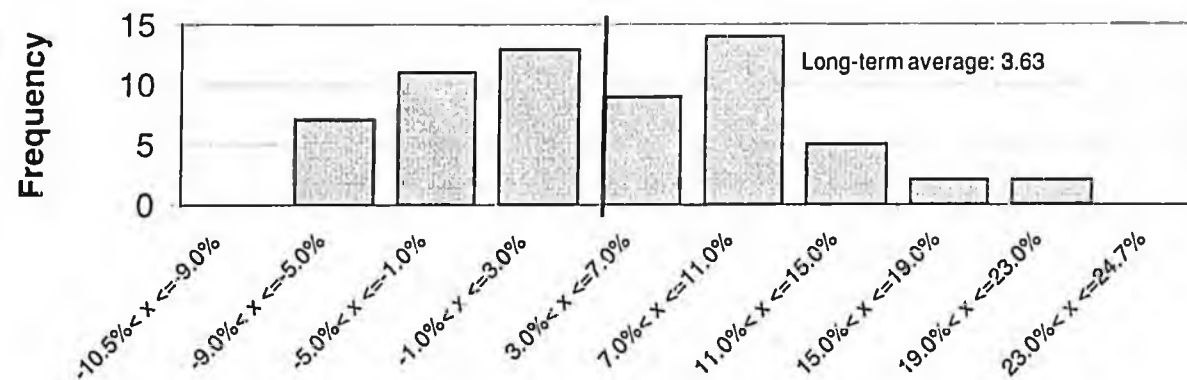


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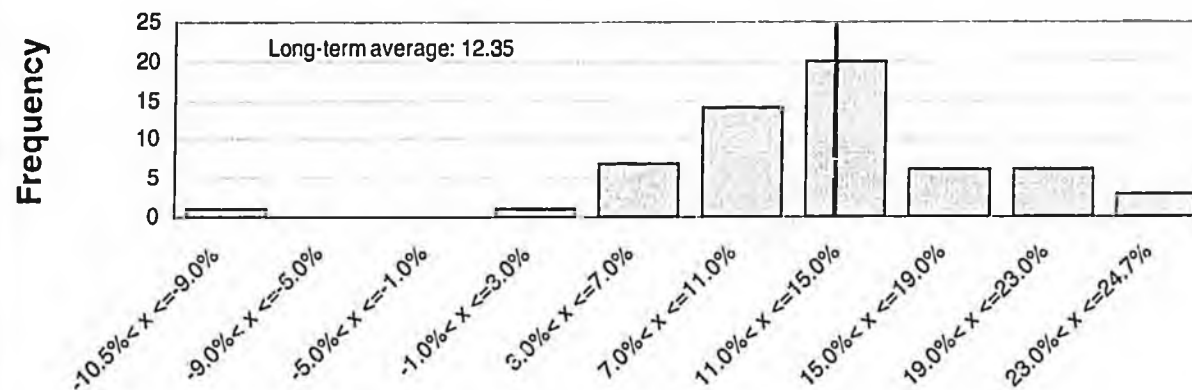


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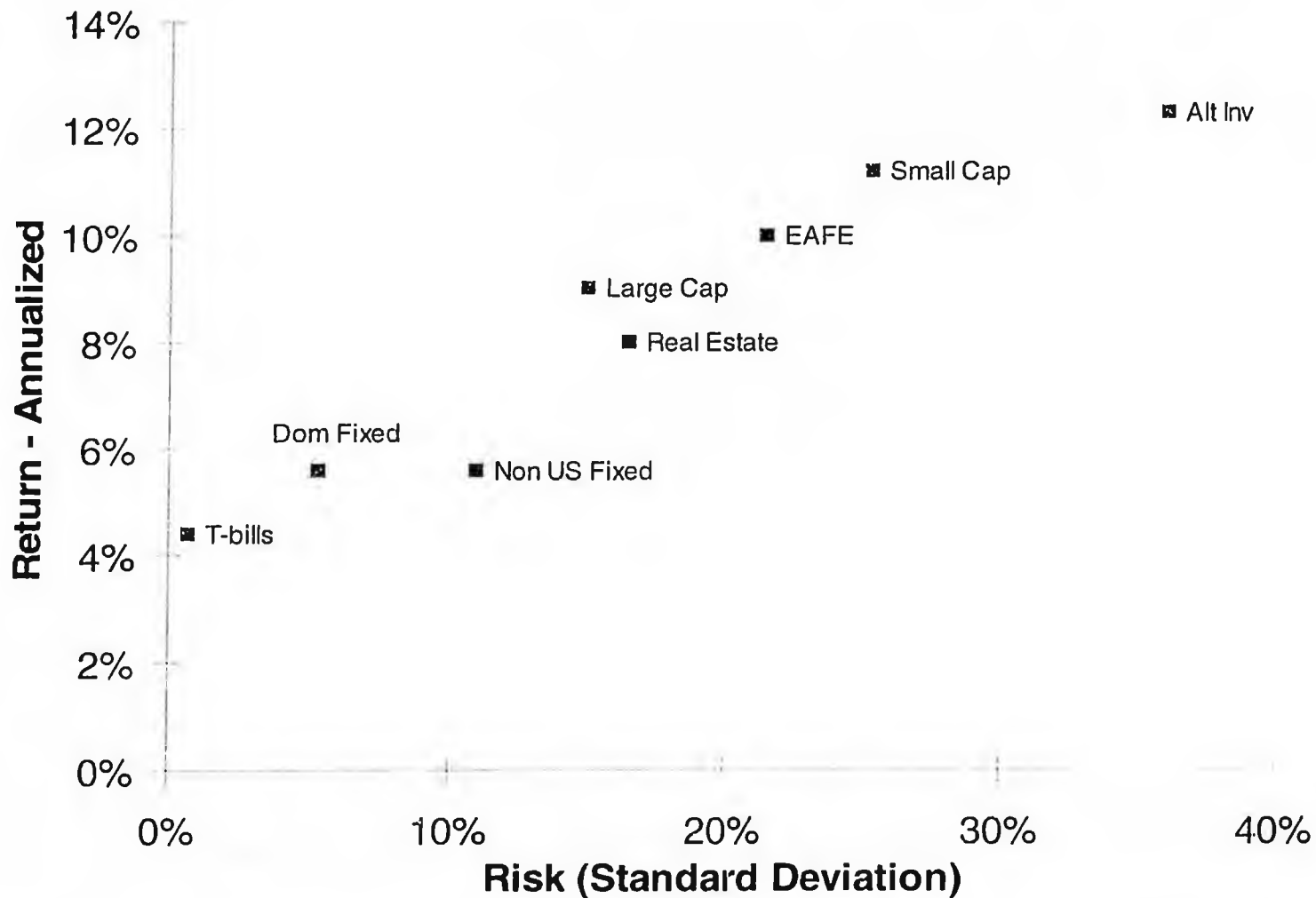


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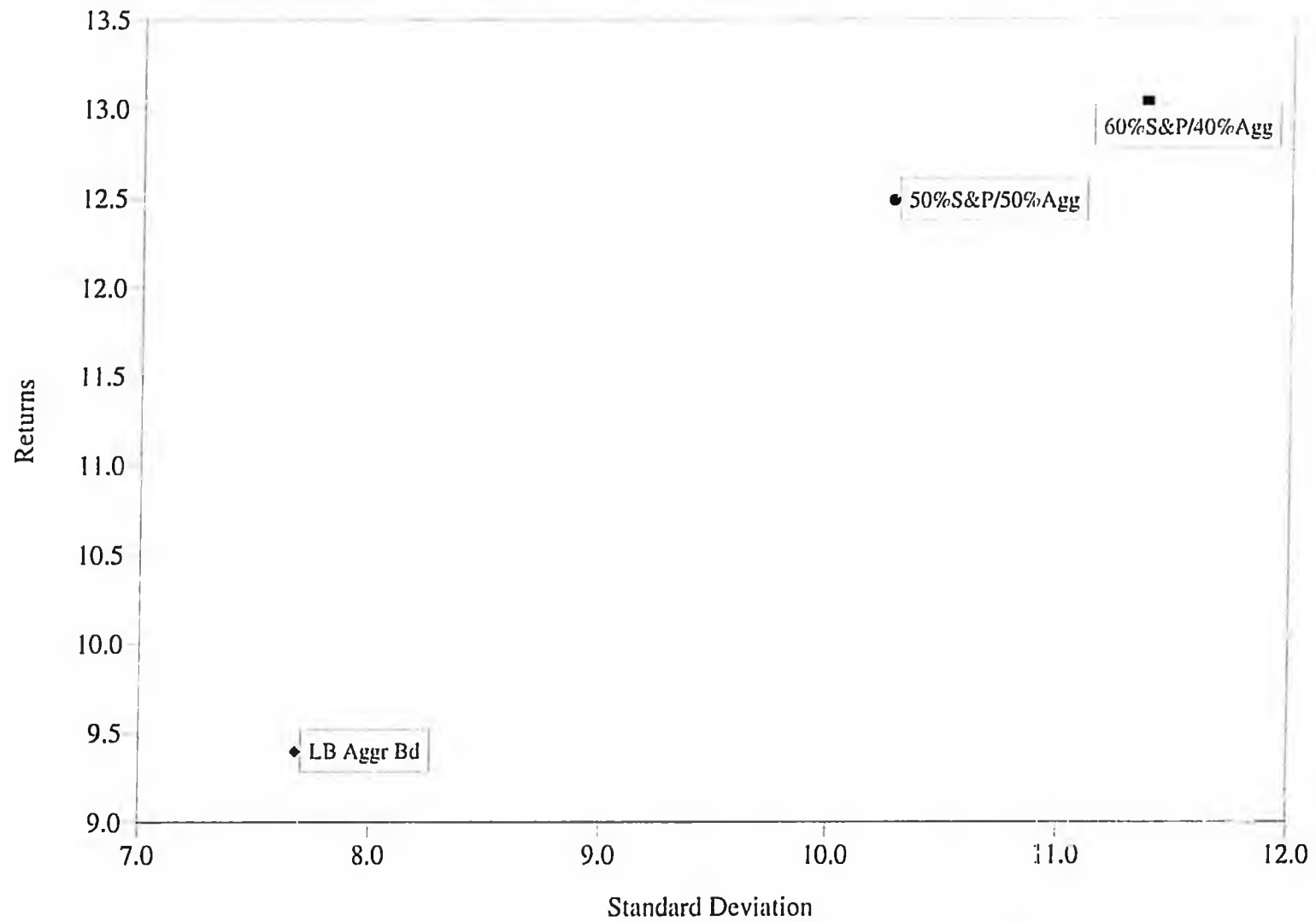
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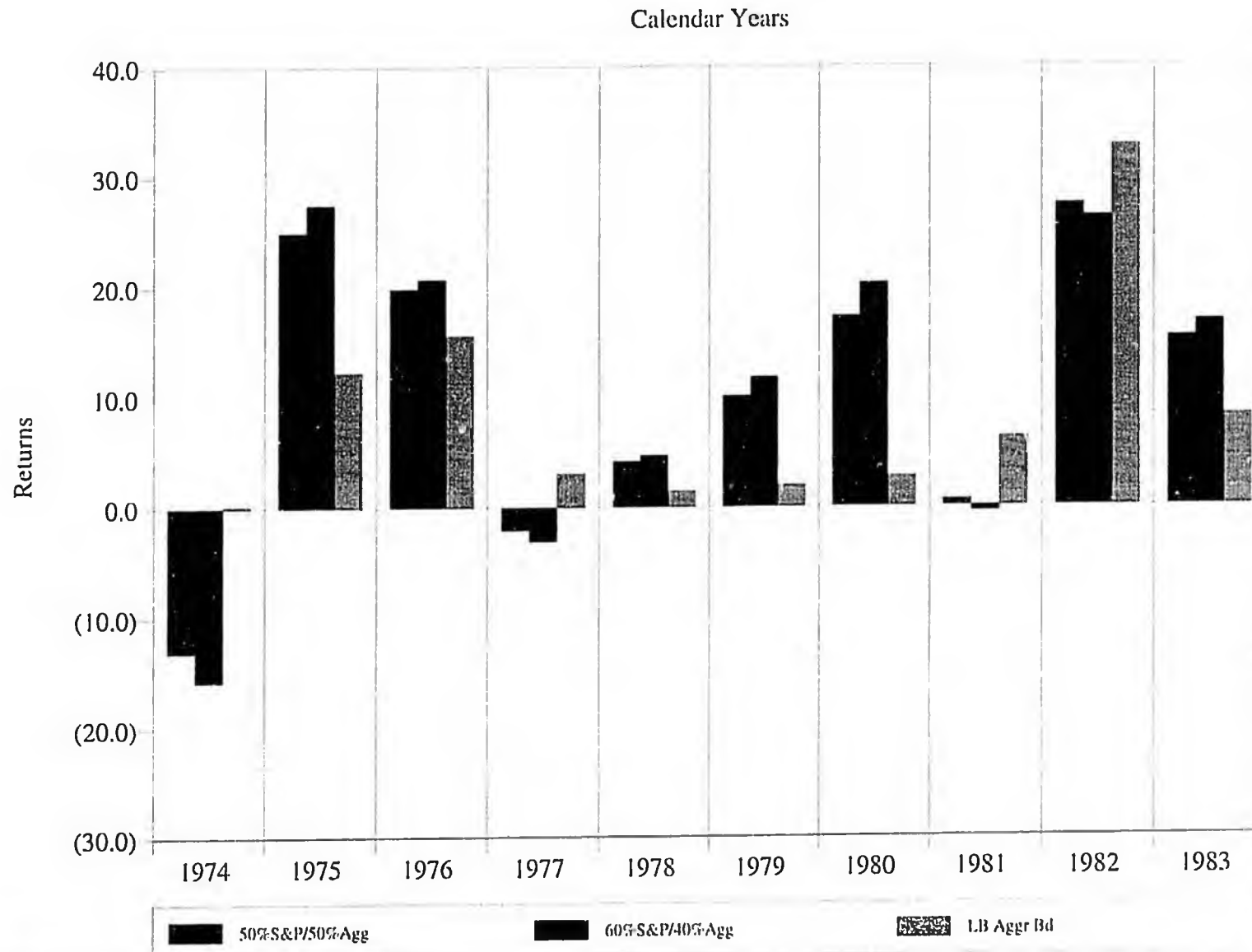


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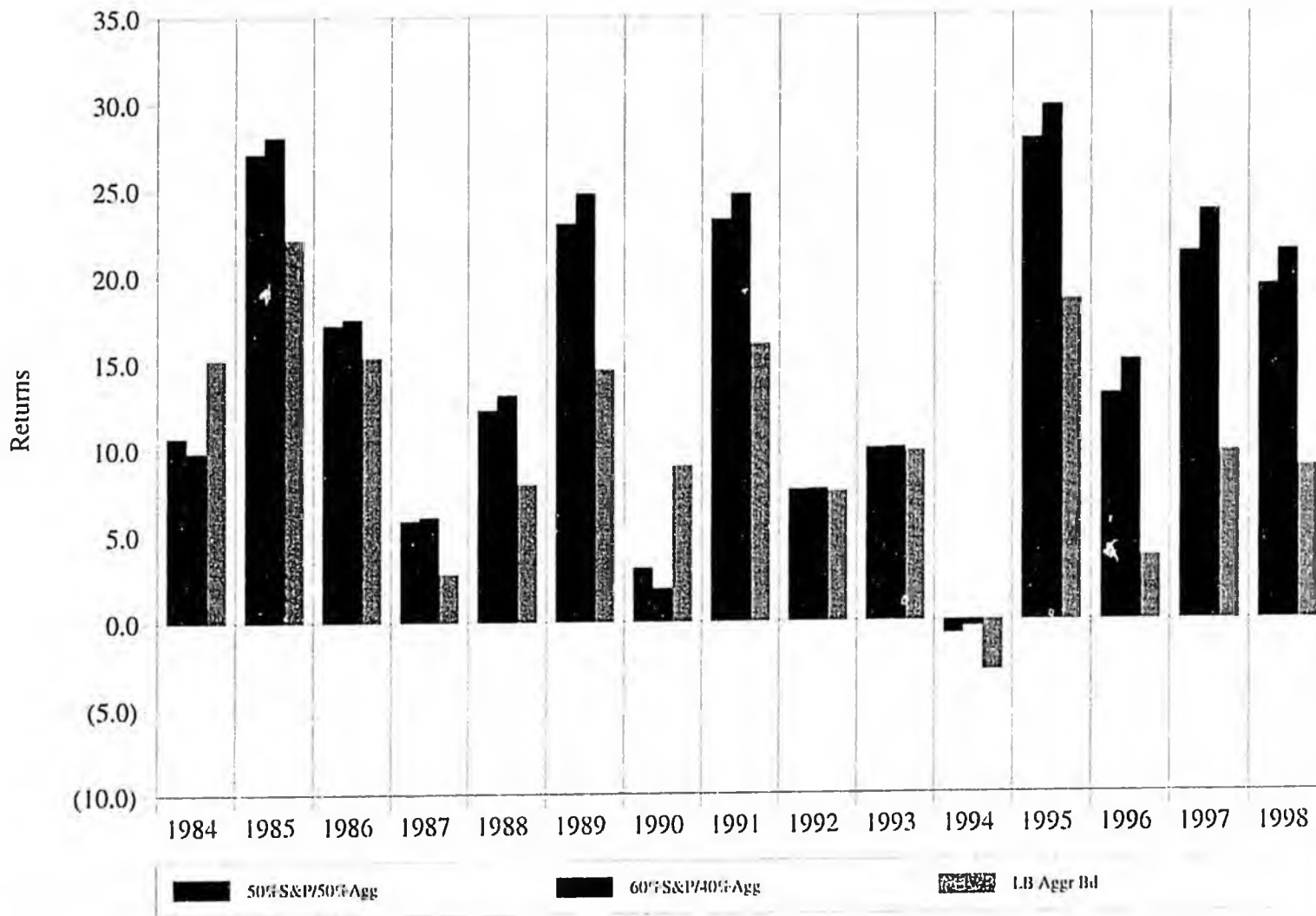


# Calendar Year Returns for 3 Policy Mixes



# Calendar Year Returns

Calendar Years

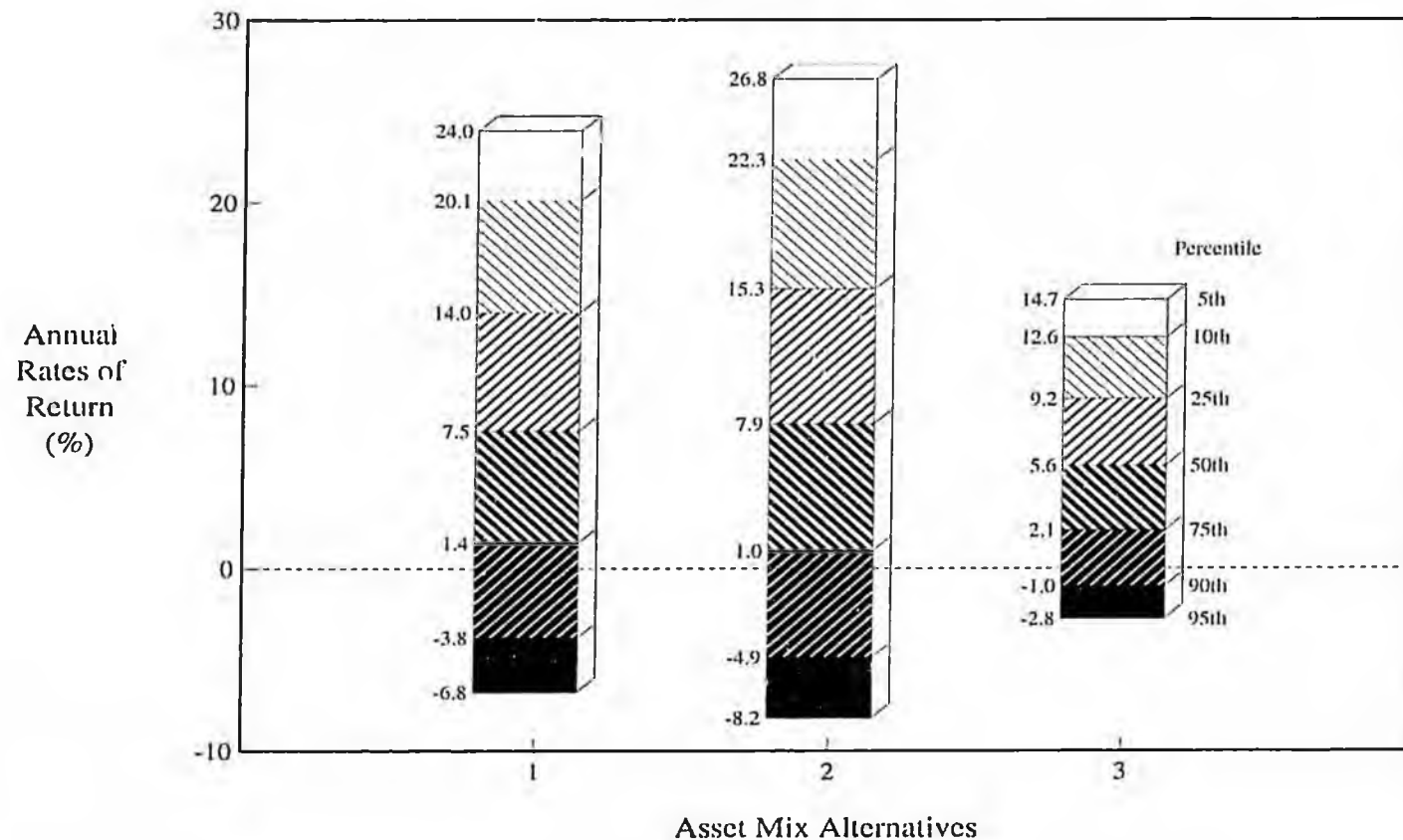


# Projected Return for 3 Policy Mixes

Portfolio Component	<u>Asset Mix Alternatives</u>		
	1	2	3
Broad Dom Equity	50%	60%	0%
LB Agg	50%	40%	100%
Totals	100%	100%	100%
Median	7.5%	7.9%	5.6%
Std Dev	9.4%	10.7%	5.3%

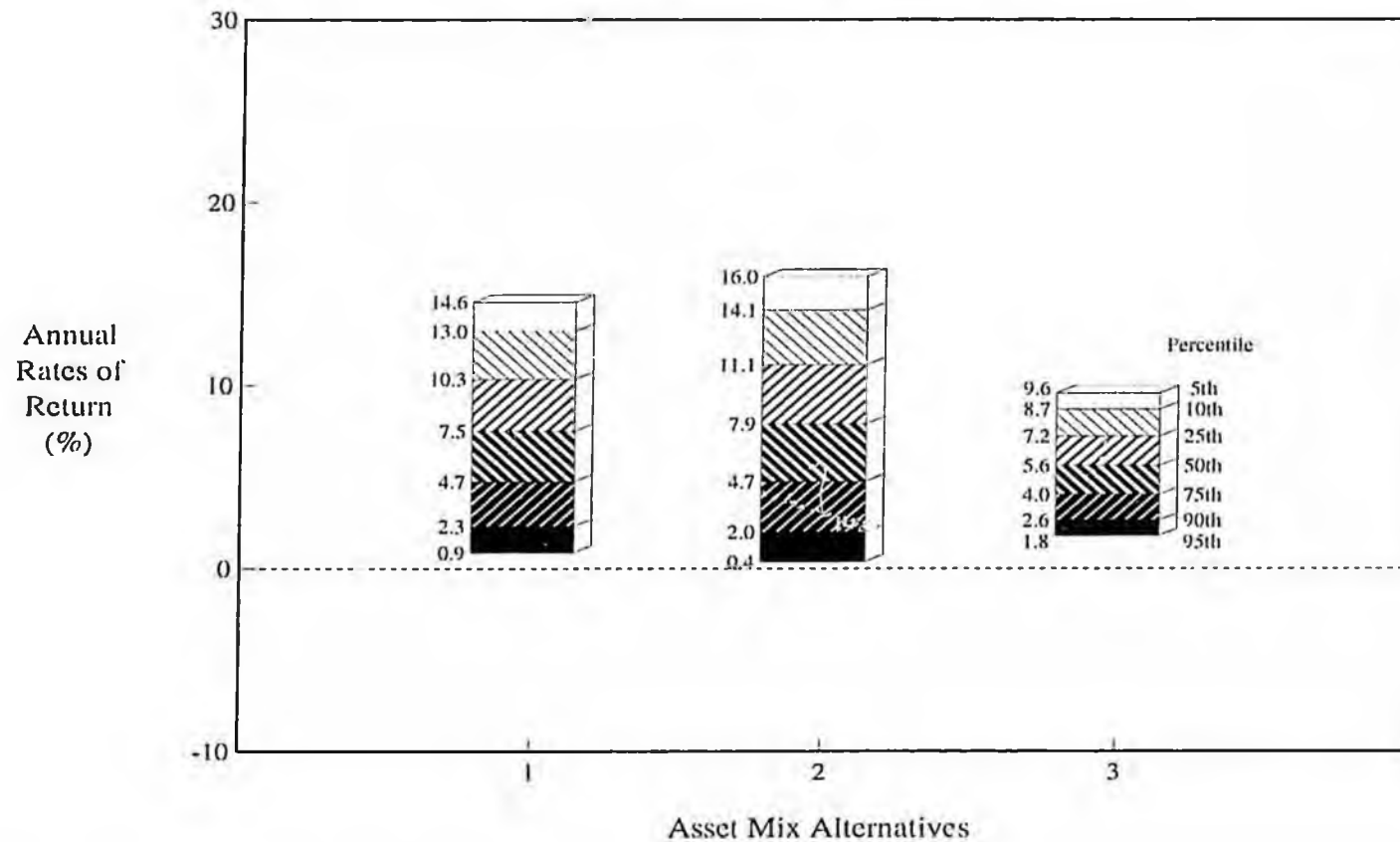
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Range of Projected Rates of Return  
(Projection period: one year)



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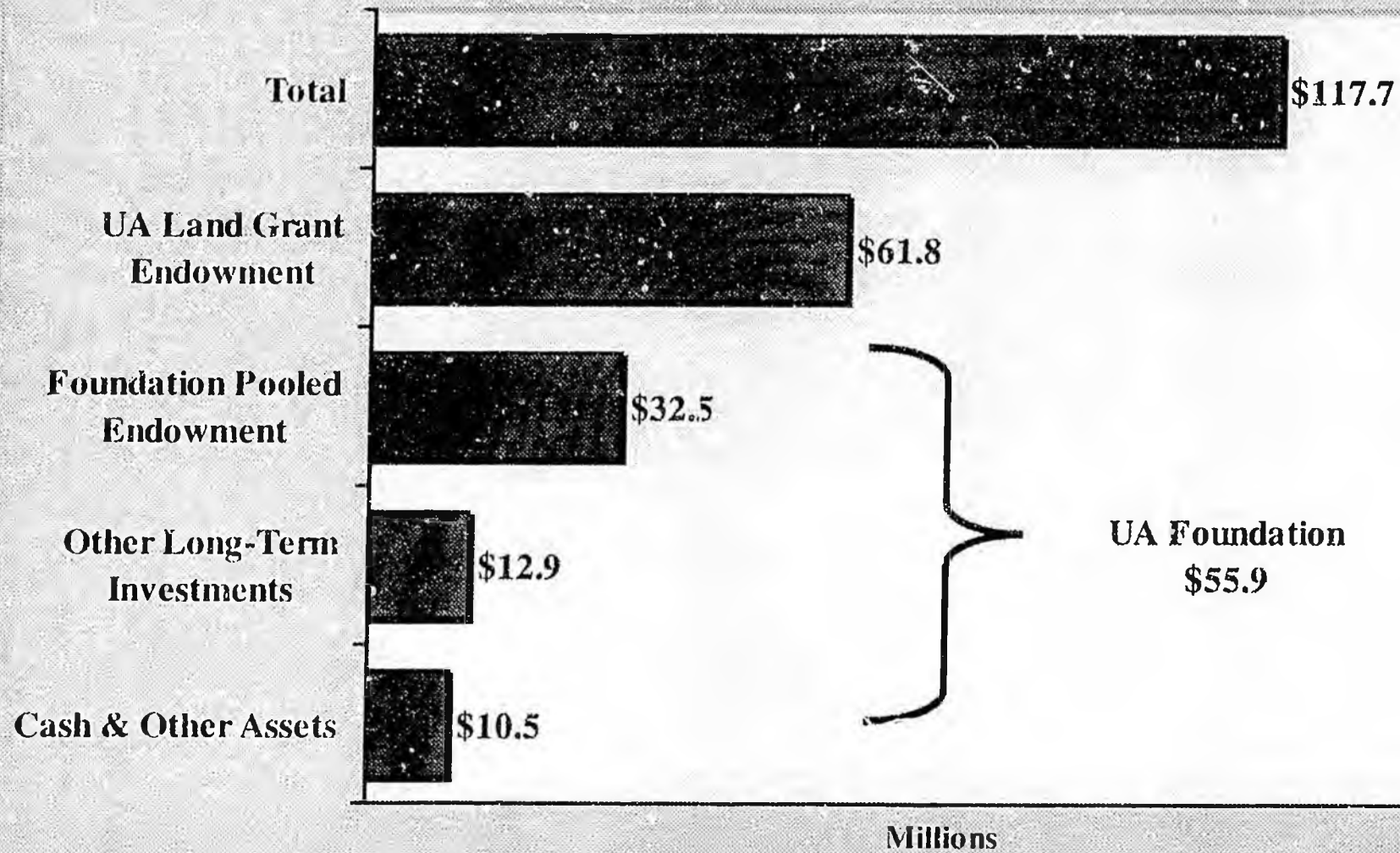


**University of Alaska  
Foundation**

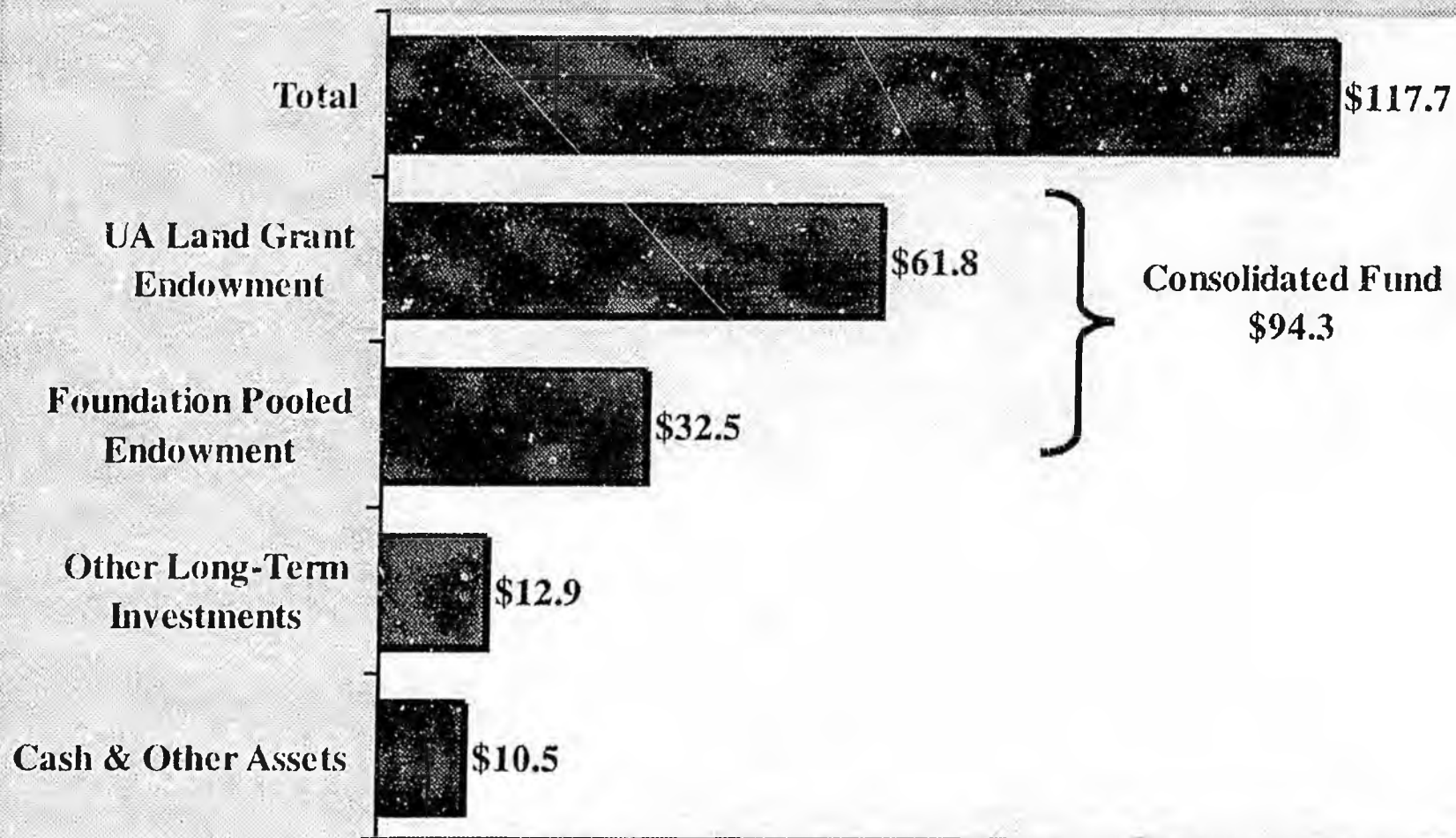
**Endowment Management  
Development**

**Jim Lynch, Treasurer**

# University of Alaska Foundation Assets Under Management, December 31, 1998

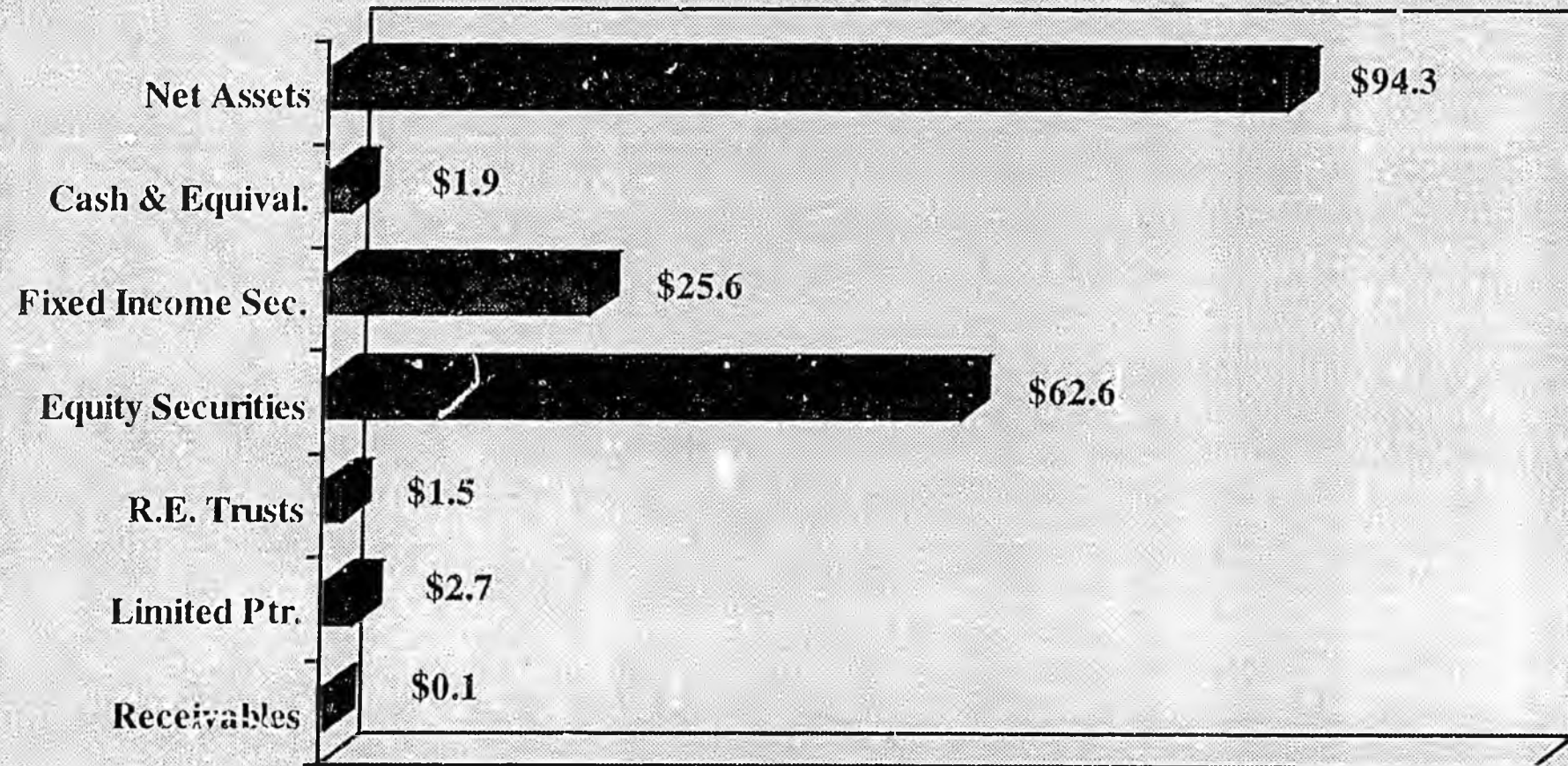


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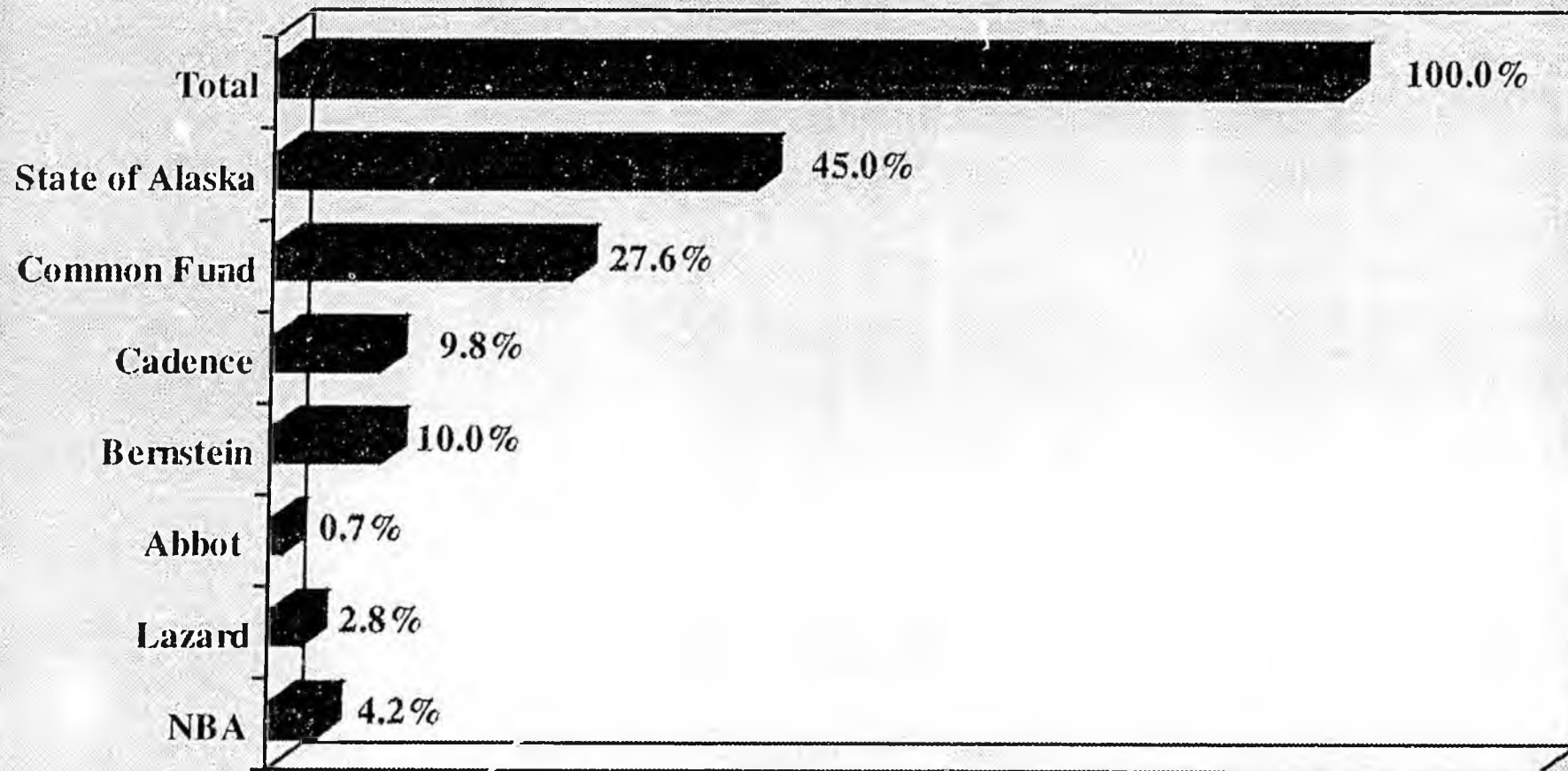
Millions

## Consolidated Fund Assets December 31, 1998



Millions

**Consolidated Fund  
Assets Distribution by Manager, December 31, 1998**



# University of Alaska Foundation

## The Consolidated Fund



# University of Alaska Land Grant Trust Fund

- 1978
  - ▶ \$2.5 million
  - ▶ All cash and fixed income investments
  - ▶ Spending current income only

# University of Alaska Land Grant Trust Fund

- 1989
  - ▶ \$13.9 million
  - ▶ Equities authorized, minimal exposure
  - ▶ Spending current income only, after inflation proofing at CPI

# University of Alaska Land Grant Trust Fund

- 1997

- ▶ \$43.2 million

- ▶ Spending current income only after inflation proofing at 33% current income

- ▶ Total return authorized

- ▶ Consolidated with the UA Foundation's Pooled Endowment Funds

# University of Alaska Foundation Pooled Endowment Fund

- 1984
  - ▶ \$1.2 million
  - ▶ All cash and fixed income investments
  - ▶ Spending current income only.

# University of Alaska Foundation Pooled Endowment Fund

- 1988
  - ▶ \$8.2 million
  - ▶ Balanced fund portfolio, fixed income bias
  - ▶ Unitized pool, total return
  - ▶ Spending 5.5% of market value

# University of Alaska Foundation Pooled Endowment Fund

● 1995

▶ \$23.3 million

▶ Spending 5.0% of 3 yr moving average of market value

# University of Alaska Foundation Pooled Endowment Fund

- 1997
  - ▶ \$29.7 million
  - ▶ Consolidated with UA Land Grant Trust Fund
  - ▶ Spending 5.0% of 5 yr. moving average of market value

# Endowment Management

## Conflicting Objectives

- Preserving principal
- Maximizing distributions
- Minimizing payout fluctuations

# Endowment Management

## Threshold Issues - Reducing Conflicts

- Intergenerational Equity
- Total Return