MINNESOTA STATE BOARD OF INVESTMENT MEETING
June 6, 1990
&
INVESTMENT ADVISORY COUNCIL MEETING
June 5, 1990

AGENDA
STATE BOARD OF INVESTMENT
MEETING
Wednesday, June 6, 1990
8:30 A.M. - Room 125
State Capitol
Saint Paul

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	C. Approval of Board Member Travel Allocation Policy	
	D. Approval of Continuing Fiduciary Education Plan	
	E. Approval of FY 92-93 Biennial Budget Request	
4.	Report from the Task Force on Manager Retention (J. Mares)	E
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	B. Recommendations for Action by the SBI	
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	1. Report on Feasibility of Performance Based Fees for Active Bond Managers	
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	C. Alternative Investment Committee	H
	1. Report on Fund Manager Annual Reviews	
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	4. Approval of Real Estate Commitments (LaSalle, Copley)	
	5. Approval of Venture Capital Commitments (Brinson Partners, IAI Venture Partners, Zell/Chilmark)	

EXECUTIVE DIRECTOR
HOWARD J BICKER

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT
Room 105, MEA Building
55 Sherburne Avenue
St Paul, MN 55155
Tel (612) 296-3328
FAX. (612) 296-9572

MINUTES

STATE BOARD OF INVESTMENT

March 15, 1990

The State Board of Investment (SBI) met on Thursday, March 15, 1990 in the Governor's Reception Room at 8:00 A.M. Governor Rudy Perpich, Chair, Secretary of State Joan Anderson Growe, State Treasurer Michael A. McGrath, and Attorney General Hubert H. Humphrey III were present. State Auditor Arne H. Carlson was absent.

The minutes of the January 10, 1990 meeting were approved.

EXECUTIVE DIRECTOR'S INVESTMENT REPORT

Howard Bicker, Executive Director, referred the Board members to the quarterly report for the calendar year ending 1989. He stated that the Basic Retirement Funds exceeded the real rate of return objective by 8.3 percentage points, underperformed the composite index return by 0.1 percentage points annually over the last five years, and outperformed the median fund return by 0.9 percentage points annually over the past five years. Mr. Bicker reported that for the quarter ending December 31, 1989 the Basic Funds increased in value by 1.7 percent and had a minor change in asset allocation. He stated that $150 million was withdrawn from the equity market and placed in the bond market in order to rebalance the Basic Funds to its long term asset mix guidelines. Mr. Bicker reported that the Basic Funds underperformed the median balanced fund for the quarter, but outperformed the median balanced fund for the latest year, three year, and five year periods. He stated that the stock segment underperformed, primarily due to the style bias or misfit of the active equity managers. He stated that staff and the IAC will be addressing the issue in more detail.

Mr. Bicker then reported that the Post Retirement Investment Fund grew in value by 2.3 percent for the quarter and had no significant changes in the asset mix. He referred Board members to the chart in the meeting materials indicating the benefit increases provided by the Post Fund.

Mr. Bicker then referred Board members to the portfolio statistics and stated that as of December 31, 1989 the Board managed assets totaling $15.5 billion.

EXECUTIVE DIRECTOR'S ADMINISTRATIVE REPORT

Mr. Bicker referred Board members to the budget and travel reports in the meeting materials. He then reported that the SBI's client conference, held on February 27, 1990, was well attended and received favorable responses. Finally, he referred members to the legislative report and stated that to date there had been no significant bills relating to the State Board considered during the 1990 Legislative Session.

REPORT FROM THE TASK FORCE ON MANAGER RETENTION

Ms. Yeomans reported that the Task Force on Manager Retention met twice during the quarter to discuss the Board's Manager Continuation Policy. She stated that the Task Force is not prepared to make specific recommendations at this time, but anticipates presenting its final report and recommendations at the June 1990 Board meeting.

INVESTMENT ADVISORY COUNCIL COMMITTEE REPORTS
EQUITY MANAGER COMMITTEE

Ms. Yeomans reported that the Equity Manager Committee discussed the misfit versus the market in the current active equity manager program within the Basic Funds. She stated that the Committee is studying the issue and that more information is being gathered. She stated that the Committee expects to discuss the issue further and make a recommendation to the Board at its June 1990 meeting.

Ms. Yeomans then stated that the active equity managers outperformed their aggregate benchmark by 5.7 percentage points over the past 12 months, and that five of the six managers, excluding the manager that was terminated, outperformed their individual benchmarks for the year. She stated that there were several items requiring Board action. She stated that contracts with the four managers (Concord, Franklin, Rosenberg, and Sasco) required renewal. She reported that three of the four have outperformed their benchmarks, and that staff and the Committee have confidence in the four managers' abilities and investment approaches. She stated that the Committee recommends the Board renew all four contracts. Mr. McGrath moved approval of the Committee recommendation. Ms. Growe seconded. The motion was adopted.

Ms. Yeomans then stated that the second action item concerned the report from the Small Capitalization Manager Search Committee. She referred Board members to the report in the meeting materials and stated that after scrutinizing 23 firms, the Committee interviewed four and found two outstanding choices. She stated that after considerable discussion the Committee chose GeoCapital Management. Ms. Yeomans then stated that the Committee recommends that the Board authorize staff to enter into a contract with GeoCapital Management and fund the firm with an initial portfolio of $60 million in assets from the index fund. Ms. Growe moved approval of the Committee recommendation. Mr. Humphrey seconded. The motion was adopted.

FIXED INCOME MANAGER COMMITTEE

Ms. Yeomans reported that the dedicated bond portfolio within the Post Retirement Investment Fund was rebalanced with a minimal amount of turnover. She stated that the portfolio will completely cover projected liabilities and will fund a three percent annual benefit increase. Ms. Yeomans then reported that staff and the Committee reviewed the performance of the enhanced index managers and were satisfied with their results.

Ms. Yeomans next reported that the Committee reviewed active manager performance. She stated that Miller Anderson's underperformance largely contributed to the managers' aggregate underperformance compared to the benchmark in the past year. She stated that Miller Anderson's underperformance is due, in part, to pricing problems with specific securities within the portfolio, a problem that is being corrected. She also stated that Morgan Stanley's performance has been weak relative to its benchmark. She stated that staff will be conducting an in-depth performance review of Morgan Stanley and will report its findings at the next meeting.

Ms. Yeomans then stated that staff concludes that the ownership change at Lehman Ark has not altered the firm's investment approach and that, therefore, the Committee recommends the Board remove Lehman Ark from probation for qualitative reasons. Mr. Humphrey moved approval of the Committee recommendation. Ms. Growe seconded. The motion was adopted.

Ms. Yeomans then stated that BEA was hired in 1987 to enhance cash returns in the Post Fund. She stated that the firm has met expectations and has provided returns above its benchmark. She stated the Committee recommends that the Board extend the BEA contract for one year. Mr. McGrath moved approval of the Committee recommendation. Ms. Growe seconded. The motion was adopted.

Finally, Ms. Yeomans stated that the Committee reviewed a staff report on the use of private placements in the SBI's internally managed fixed income portfolios. She stated that the Committee recommends the Board adopt the staff report and that the guidelines presented in the report govern private placement purchases in the internally managed fixed income portfolios. Mr. McGrath moved approval. Ms. Growe seconded. The motion was adopted.

ALTERNATIVE INVESTMENT COMMITTEE

Ms. Yeomans reported that the Committee met with several of the SBI's venture capital managers and one resource manager. She stated that the Committee found no surprises. She then reported that the sale of the Apache II had been negotiated successfully. She stated that while there was a loss on the investment, the SBI and other investors received a final sale price above Apache's original offer.

Ms. Yeomans then stated that the Committee had one item requiring action by the Board. She stated that staff and the Committee believe an investment with Pathfinder Ventures is appropriate. She stated that staff and the Committee are concerned that key members of the partnership remain active throughout the investment phase of the partnership. She stated that, as a result, the Committee concludes that the SBI's commitment of up to $5 million be contingent upon the continued participation by the key partners. Mr. McGrath moved approval of the Committee recommendation. Mr. Humphrey seconded. The motion was approved.

REPORT FROM THE SOUTH AFRICA TASK FORCE

Mr. Bicker referred to the report from the South Africa Task Force distributed to Board members (See Exhibit A). He stated that the report shows the Board's progress in implementing its resolution concerning investments in South Africa. He stated that the date for full implementation is March 1, 1991. He stated that the Task Force will meet again in January 1991 to review progress and will report to the Board at that time.

The meeting adjourned at 8:15 A.M.

Respectfully submitted,

Howard J. Bicker

Howard J. Bicker
Executive Director

Attachment

EXHIBIT A

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT

Room 105, MEA Building
55 Sherburne Avenue
St Paul, MN 55155
Tel (612) 296-3328
FAX (612) 296-9572

March 7, 1990

TO: Members of the State Board of Investment

FROM: Task Force on South Africa

RE: Review of Implementation of the SBI Resolution on Companies that do Business in South Africa

The South Africa Task Force met on March 6, 1990 to review implementation of the SBI's resolution. The members of the Task Force are:

Peter Sausen, Chair Assistant Commissioner of Finance	Governor's Representative
Elton Erdahl Teachers Retirement Association	Retirement Fund Representative
Richard Helgeson Deputy State Auditor	State Auditor's Representative
Jake Manahan Deputy State Treasurer	State Treasurer's Representative
Jack Tunheim Chief Deputy Attorney General	Attorney General's Representative
Rick Scott AFSCME	Public Employee Representative
Elaine Voss Deputy Secretary of State	Secretary of State's Representative

CURRENT BOARD POLICY

At its March 1, 1989 meeting the Board revised ite original resolution dated October 5, 1985. The amended and restated resolution requires that:

- o The SBI will continue the divestment through attrition program first implemented in 1986. The resolution requires the Board to divest its holdings in any company doing business in South Africa (as defined by the Investor Responsibility Research Center, Washington, D.C.).
- o The SBI will continue to focus the divestment program on the SBI's actively managed stock portfolios.
- o The SBI will seek to divest all affected holdings by March 1, 1991. In the case in which a company is added to the restricted list, the holding should be divested within two years.

DIVESTMENT THROUGH ATTRITION

Under the revised resolution the Board's active managers are directed to discontinue purchases of the stock of any restricted company unless the manager determines the failure to buy a particular stock would be a violation of its fiduciary responsibility. In these instances, a letter certifying the reason for the purchase must be sent to the Board's staff. As existing holdings are sold during the normal course of business, the number of shares of stock held in restricted companies will decline.

COMPANIES AFFECTED BY THE RESOLUTION

Staff relies on the Investor Responsibility Research Center (IRRC) for information regarding the status of companies doing business in South Africa. The IRRC defines direct investment in South Africa as a U.S. firm owning 10 percent or more of an active South African subsidiary or affiliate. Companies are added to and subtracted from the list over time:

- o Companies that terminate their operations in South Africa are removed from the restricted list
- o Companies that purchase or merge with a firm that has operations in South Africa are added to the restricted list

The number of companies doing business in South Africa has declined dramatically since 1985 when the SBI adopted its original resolution. According to IRRC more than half of all U.S. companies doing business in South Africa have ended their direct investments in that country over the past four and a half years. IRRC reports that 40 companies sold their South African assets in 1985; 50 did so in 1986; 57 in 1987; 25 in 1988; and 18 withdrew in 1989.

Public and Private Companies
with Direct Investment in South Africa

March 1986	267
December 1987	163
December 1989	124

As of February 1990, IRRC identified 87 publicly traded companies with direct investments in South Africa.

STATUS OF U.S. SANCTIONS AGAINST SOUTH AFRICA

To date, actions taken by the South African government appear to fall short of what is required by law to reduce U.S. economic sanctions against South Africa. According to the Anti-Apartheid Act of 1986, sanctions may be lifted by President Bush if the South African government takes certain actions toward the elimination of apartheid. These conditions include:

- o releasing Nelson Mandela and other political prisoners
- o legalizing opposition political groups such as the African National Congress (ANC) and allowing free expression
- o ending the state of emergency
- o repealing the Group Areas Act and the Population Registration Act
- o publicly committing to "good faith negotiations with truly representative members of the black majority without preconditions"

Observers believe that these conditions have not been fulfilled. The Bush Administration maintains that the first two conditions have been met and that President De Klerk has made efforts to comply with all the terms necessary to end apartheid.

As of the date of the Task Force meeting, the Bush Administration had made no decisions concerning the lifting of sanctions. Sanctions from the 1986 Anti-Apartheid Act include the banning of:

- o imports of the krugerrand
- o imports of South Africa coal, textiles, uranium, agricultural products, iron and steel
- o exports of oil, arms, and computers to South African military, police or agencies enforcing apartheid
- o exports of goods for use in nuclear facilities
- o new loans and investments by U.S. firms in South Africa, except trade-related financing loans

- air transportation landing rights between South Africa and the U.S.

PROGRESS TOWARD DIVESTMENT

The number of shares of companies on the restricted list held in SBI actively managed stock portfolios declined substantially from the end of February 1989 to the end of February 1990:

End of Month	Companies	Shares
February 1989	21	1.9 million
February 1990	8	.6 million
Reduction	13	1.3 million 69%

Reductions result from a manager's decision to sell the stock during the normal course of business or to a company's decision to withdraw its operations from South Africa. Reductions may be offset by holding of shares in a company that is newly added to the restricted list.

TASK FORCE ASSESSMENT

Task Force members agreed that they are pleased with progress made in implementing the SBI's present policy of divestment through attrition, and does not believe further action by the Board is necessary at this time. The Task Force also agreed:

- to reconvene in January 1991 in order to review implementation of the resolution in light of the Board's stated policy to divest all holdings by March 1, 1991, or

- to reconvene at the call of the Task Force Chair at a date earlier than January 1991 in order to review the continued need for a Board policy on South Africa if the South African government makes substantial progress to eliminate apartheid.

AGENDA
INVESTMENT ADVISORY COUNCIL
MEETING
Tuesday, June 5, 1990
2:00 P.M.
MEA Building - Conference Rooms "A" & "B"
Saint Paul

		TAB
1.	Approval of Minutes of March 14, 1990 Meeting	
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	B. Portfolio Statistics (Mar. 31, 1989)	B
	C. Administrative Report	C
3.	Report from the SBI Administrative Committee (P. Hutchinson)	D
	A. Approval of FY 91 Executive Director's Work Plan	
	B. Approval of FY 91 Budget Plan	
	C. Approval of Board Member Travel Allocation Policy	
	D. Approval of Continuing Fiduciary Education Plan	
	E. Approval of FY 92-93 Biennial Budget Request	
4.	Report from the Task Force on Manager Retention (J. Mares)	E
	A. Findings and Conclusions	
	B. Recommendations for Action by the SBI	
5.	Reports from Investment Advisory Council Committees	
	A. Equity Manager Committee (D. Veverka)	F
	1. Review of Manager Performance	
	2. Review of Contract Guidelines	
	3. Renewal of Contracts (Alliance, Forstmann Leff, IAI, IDS, Lieber, Waddell & Reed)	
	B. Fixed Income Manager Committee (G. Norstrem)	G
	1. Report on Feasibility of Performance Based Fees for Active Bond Managers	
	2. Review of Manager Performance	
	3. Review of Contract Guidelines	
	4. Special Review of Morgan Stanley	
	5. Renewal of Contracts (Fidelity, Lincoln, IAI, Lehman, Miller, Western)	
	C. Alternative Investment Committee (K. Gudorf)	H
	1. Report on Fund Manager Annual Reviews	
	2. Report on Real Estate Manager Roundtable	
	3. Renewal of Resource Consultant Contract	
	4. Approval of Real Estate Committments (LaSalle, Copley)	
	5. Approval of Venture Capital Commitments (Brinson Partners, IAI Venture Partners, Zell/Chilmark)	

EXECUTIVE DIRECTOR
HOWARD J. BICKER

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT
Room 105, MEA Building
55 Sherburne Avenue
St Paul, MN 55155
Tel (612) 296-3328
FAX (612) 296-9572

MINUTES

INVESTMENT ADVISORY COUNCIL

March 14, 1990

The Investment Advisory Council met on Wednesday, March 14, 1990, at 2:00 P.M. in the MEA Building, Saint Paul, Minnesota.

MEMBERS PRESENT: Harry Adams; James Eckmann; Elton Erdahl; Paul Groschen; Kenneth Gudorf; James Hacking; Peter Hutchinson; Vernell Jackels; David Jeffery; Malcolm McDonald; Judith Mares; Gary Norstrem; Joseph Rukavina; Deborah Veverka; and Jan Yeomans.

MEMBERS ABSENT: John Bohan and Raymond Vecellio.

SBI STAFF: Howard Bicker; Beth Lehman; James Heidelberg; Doug Gorence; Michael Menssen; Harriet Balian; and Lin Nadeau.

OTHERS ATTENDING: Gary Austin; Howard Buska; Christie Eller; Richard Helgeson; Michael McGrath; John Manahan; O. M. Ousdigian; Tom Richards, Richards and Tierney; Peter Sausen; Edwin Stuart, REAM; Elaine Voss; and Robert Whitaker.

The minutes of the January 8, 1990 meeting were approved.

EXECUTIVE DIRECTOR'S INVESTMENT REPORT

Howard Bicker, Executive Director, reported on fund performance compared to stated objectives for the quarter ending December 31, 1989 and calendar year 1989. He stated that the Basic Retirement Funds exceeded the real rate of return objective over the last 10 years by 8.3 percentage points a year, underperformed the composite index return over the last 5 years by 0.1 percentage points annually, and outperformed the median

median fund return over the past five years by 0.9 percentage points annually. Mr. Bicker reported that the Post Retirement Investment Fund exceeded its objective of producing eight percent annual realized earnings by generating sufficient earnings to provide a 4.0 percent benefit increase to retirees in January 1990. Mr. Bicker then reported on the funded status of the pension funds as of June 30, 1989. He stated that the quarterly report reflected the FY 89 actuarial valuations performed by the state's actuary. He stated that in aggregate the funds were 73 percent funded compared to 72 percent in FY 1988. He stated that the results reflect the benefit changes and actuarial assumption changes approved during the 1989 Legislative Session.

Mr. Bicker reported that the market value of the Basic Funds increased 1.7 percent during the fourth quarter 1989. He stated that as reported at the last quarterly meeting, $150 million of equity assets were reallocated to bonds and cash to rebalance the asset mix to the long term policy. He reported that the Basic Funds underperformed the median balanced fund for the quarter, but outperformed the median balanced fund for the latest year, three year, and five year periods. He stated that the stock segment underperformed its target for the quarter and the year, primarily due to the style bias or the equity managers. He stated that the IAC would be discussing the issue in more detail.

Mr. Bicker reported that the Post Fund increased in value by 2.3 percent during the quarter and had no significant changes in the asset mix. He referred members to the chart in the meeting materials indicating the benefit increases provided by the Post Fund.

Mr. Bicker then stated that as of December 31, 1989, the Board managed assets totaling $15.5 billion.

In response to a question from Mr. Gudorf, Mr. Bicker stated that the dollar impact of the changes in actuarial assumptions covered the cost of the benefit increases granted in the 1989 legislative session.

EXECUTIVE DIRECTOR'S ADMINISTRATIVE REPORT

Mr. Bicker referred Board members to the budget and travel reports in the meeting materials. He reported that the SBI's client conference, held on February 27, 1990 was well attended and received favorable responses. Finally, he referred members to the legislative report and stated that to date there had been no significant bills relating to the SBI during the 1990 Legislative Session. In response to a question from Mr. McDonald, Mr. Bicker stated that the bill providing for a constitutional guarantee of revenues for the environmental trust fund would represent no change for the SBI because funding for the environmental trust fund is already in statute. Mr. Bicker stated that staff would be working with the trust fund staff over the summer to establish a formal investment program for the fund.

REPORT FROM TASK FORCE ON MANAGER RETENTION

Ms. Mares reported that the Task Force on Manager Retention focused on the issue of using benchmarks to evaluate managers and that the group agreed that the use of benchmarks is appropriate. She stated that the Equity Committee or the Task Force would discuss the style bias or misfit within the equity program relative to the risk profile of the entire stock market.

She stated that the Task Force is working on the question of how often managers will be reviewed on qualitative and quantitative reasons. She stated that the Task Force's goal is to have a periodic broad based review. She further stated that the Task Force must discuss how long a manager is to be retained when performance is below the benchmark. She added that the Task Force and Equity Committee agree that the issues of the misfit and the manager retention policy should come before the Board at the same time. In response to a question from Mr. McDonald, Ms. Mares stated that the Committee had not yet determined how to set out a timely review of a manager while avoiding a premature judgment.

Ms. Mares then stated that with respect to the misfit the aggregate equity benchmark is significantly different than the Wilshire 5000, which is the asset class target. She stated that the equity portfolio is overexposed to small capitalization and growth stocks and is underexposed to higher yield stocks. She stated that the active manager group has exceeded their aggregate benchmark, but that the benchmark lags the Wilshire 5000.

She stated that there are three actions available concerning the misfit: 1) leave the misfit in place, which is a decision that small growth stocks will outperform the market in the future, 2) reduce the misfit by adding or subtracting managers, by reallocating dollars among managers, by adding a completeness fund, or by altering the characteristics of the index fund, or 3) leave the bias in place but take action in the future to reduce it. She concluded by stating that the Task Force and Equity Committee would most likely have conclusions for the June 1990 meeting.

INVESTMENT ADVISORY COUNCIL COMMITTEE REPORTS

EQUITY MANAGER COMMITTEE

Mr. Eckmann reported that the Committee reviewed active manager performance and had two items that required action by the IAC and the Board. He referred members to the meeting materials displaying manager performance. He stated that for calendar year 1989, stock managers outperformed their aggregate benchmark but underperformed the market. He observed that Alliance outperformed its benchmark by a wide margin and contributed significantly to the outperformance.

Mr. Eckmann stated that the contracts for the four managers retained in April 1989 (Concord, Franklin, Rosenberg, and Sasco) require renewal. He stated that while it is too early to make a definitive evaluation, staff is confident with each manager's ability and investment approach. He stated the Committee recommends renewal of all four contracts.

Mr. Eckmann stated that at its June 1990 meeting the Board terminated BMI and directed staff to find a new growth manager. He stated that staff investigated many managers and referred to the meeting materials describing the search process. He stated the Small Cap Manager Search Committee selected four firms to interview and identified two strong candidates. He stated that the Committee chose GeoCapital Management.

Mr. McDonald moved approval of the Equity Committee recommendations to renew the manager contracts and to retain GeoCapital Management. Mr. Jeffery seconded. The motion was approved. In response to a question from Mr. McDonald, Mr. Bicker stated that there were three local managers on the initial search list and that IDS Spectrum Growth was one of the four finalists.

Ms. Yeomans stated that the Council needed to discuss the issue of the misfit within the equity manager program and the possibility of creating a completeness fund or titled index fund. She stated that she anticipated the IAC would continue deliberating the issue at its June 1990 meeting.

Tom Richards, Richards & Tierney, then presented information concerning the misfit. Referring to an overhead slide, Mr. Richards stated that over the six year period ending December 1989, the SBI's total equity program underperformed the Wilshire 5000 by 0.55 percentage points a year (See Attachment A). He stated that the index fund performed as expected, posting a slight negative tracking error of 11 basis points a year. He stated that active management performed as well as the index fund, lagging the market by 10 basis points on an annualized basis. He stated that the bulk of the underperformance was attributable to the misfit or style bias of the manager program. He stated that the question before the Committee was whether to take action to eliminate the risk of the misfit in the fund because it causes a large impact on overall performance.

Mr. Eckmann observed that over the time period being discussed the misfit has been negative, but that a misfit can be negative or positive.

Mr. Bicker then presented material concerning small cap stock performance (See Attachment B). He stated that the SBI hired external equity managers after a period in which small cap stocks performed better than the market. He displayed a graph that showed that the SBI's managers focus on smaller growth stocks. He then stated that other segments of the market, except small cap growth stocks, outperformed the market in the period since the SBI hired external managers. He stated that the misfit in the equity program is a significant issue. He stated that staff has the techniques and resources to better understand it and that staff wants to address the issue.

In response to a question from Mr. Gudorf, Mr. Richards stated that economic factors and tax reductions were fundamental changes in the early 1980's that occurred just as the SBI moved to external management. In response to a question from Mr. McDonald, Mr. Richards stated that he believed the fund should be structured to expect rewards for the risks entailed rather than invest in a particular sector whose future performance relative to the market is not predictable. Mr. Bicker then stated that the issue before the SBI is whether to focus on a manager's ability to add value or to focus on the SBI's ability to choose which market sector will perform well. Mr. Gudorf stated that he believed the SBI need not take the risk of choosing which sectors will outperform, but ought to focus on manager ability. Mr. Bicker then stated that staff would like the IAC to bring that message to the Board in June. Ms. Yeomans asked each IAC member, not just the Equity Committee members, to consider the issue in preparation for the June meeting.

FIXED INCOME MANAGER COMMITTEE

Mr. Hacking stated that staff reported that the dedicated bond portfolio had been rebalanced. He stated that the dedicated bond portfolio will completely cover projected liabilities and will fund a benefit increase of three percent annually. He stated that the Committee reviewed the performance of the enhanced index managers and concluded that results were in line with expectations. He stated that the Committee reviewed the performance of the active managers. He stated that the group nearly matched their benchmarks for the quarter and the calendar year. He reported that staff will be conducting an in-depth performance review of Morgan Stanley and will report its findings at the next meeting.

Mr. Hacking then stated that there were three items requiring action. He stated that Lehman Ark was placed on probation in September 1989. He stated that staff has been monitoring the firm and concludes that the ownership change has not altered its investment approach. He stated that the Committee recommends the firm be removed from probation. He stated that the contract with BEA Associates to manage a cash enhancement program in the Post Fund must be renewed. He stated that BEA provided an annual return of 1.4 percentage points above its benchmark and that the Committee recommends the contract be renewed. He stated that staff has prepared a set of private placement investment guidelines and referred IAC members to the description in the meeting materials. He stated the Committee recommends the guidelines be adopted. In response to a question from Mr. McDonald, Mr. Bicker stated that it was staff's opinion that new registration rules will substantially alter the private placement market and that these decision rules on private placements are appropriate. Mr. Hutchinson moved approval of the Committee recommendations. Mr. McDonald seconded. The motion was approved.

ALTERNATIVE INVESTMENT COMMITTEE

Mr. Gudorf stated that the Committee recommends making a $5 million commitment with Pathfinder Ventures, a Minneapolis based venture capital group, in its Pathfinder Fund III. He stated that the Committee recommends the commitment stipulate that the SBI have the option to withdraw any unfunded commitment if any general or special limited partners terminates their relationship with Pathfinder Venture Partners. In response to a question from Ms. Veverka about the group's apparent difficulty in raising money, Mr. Bicker stated that Pathfinder had initially sought to raise a much larger fund than its Fund III. He stated that Pathfinder met investor resistance to a much larger fund because Pathfinder has done "seed deals" and was expected to have difficulty investing a larger fund. He stated Pathfinder has since greatly reduced the size of Fund III to its present $55 million. Mr. Bicker also stated that the continued participation of a major partner, Norm Dann, had not been clear to some investors. Mr. McDonald moved approval of the Committee recommendation. Mr. Erdahl seconded. The motion was approved.

Mr. Gudorf stated that the Committee and staff conducted annual review sessions with several managers. He stated that the Committee was disappointed with the performance of Norwest Venture Partners. Mr. Gudorf also reported that the Apache deal was finally closed. The final terms were approximately 15 percent above Apache's original purchase offer.

The meeting adjourned at 3:05 P.M.

Respectfully submitted,

Howard J. Bicker

Howard J. Bicker
Executive Director

Attachments

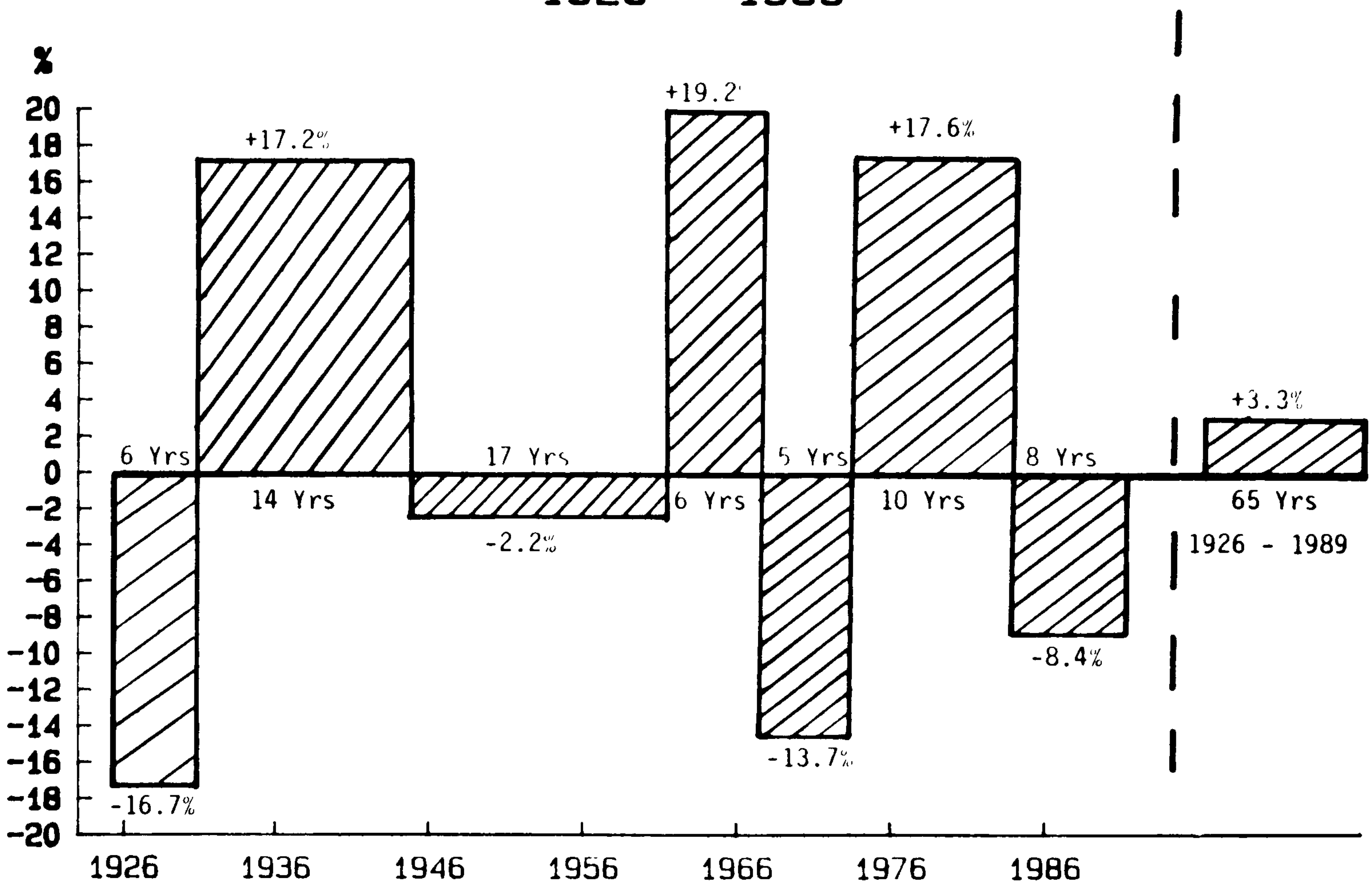
MINNESOTA STATE BOARD OF INVESTMENT

BASIC RETIREMENT FUNDS

	PAST QUARTER	YEAR 1989	PAST 3 YRS	PAST 5 YRS	SINCE 12/30/83
TOTAL DOMESTIC EQUITY	-0.19%	28.42%	15.39%	18.40%	15.64%
WILSHIRE 5000	0.59%	29.17%	15.93%	19.12%	16.27%
DIFFERENCE	-0.78%	-0.59%	-0.46%	-0.60%	-0.55%
SOURCES OF DIFFERENCE					
ACTIVE MANAGEMENT	0.26%	1.42%	0.09%	-0.04%	-0.10%
MISFIT (STYLE BIAS)	-1.04%	-1.98%	-0.55%	-0.56%	-0.45%
MEMO: INDEX FUND VS. W5000	0.07%	-0.51%	-0.13%	-0.17%	-0.11%

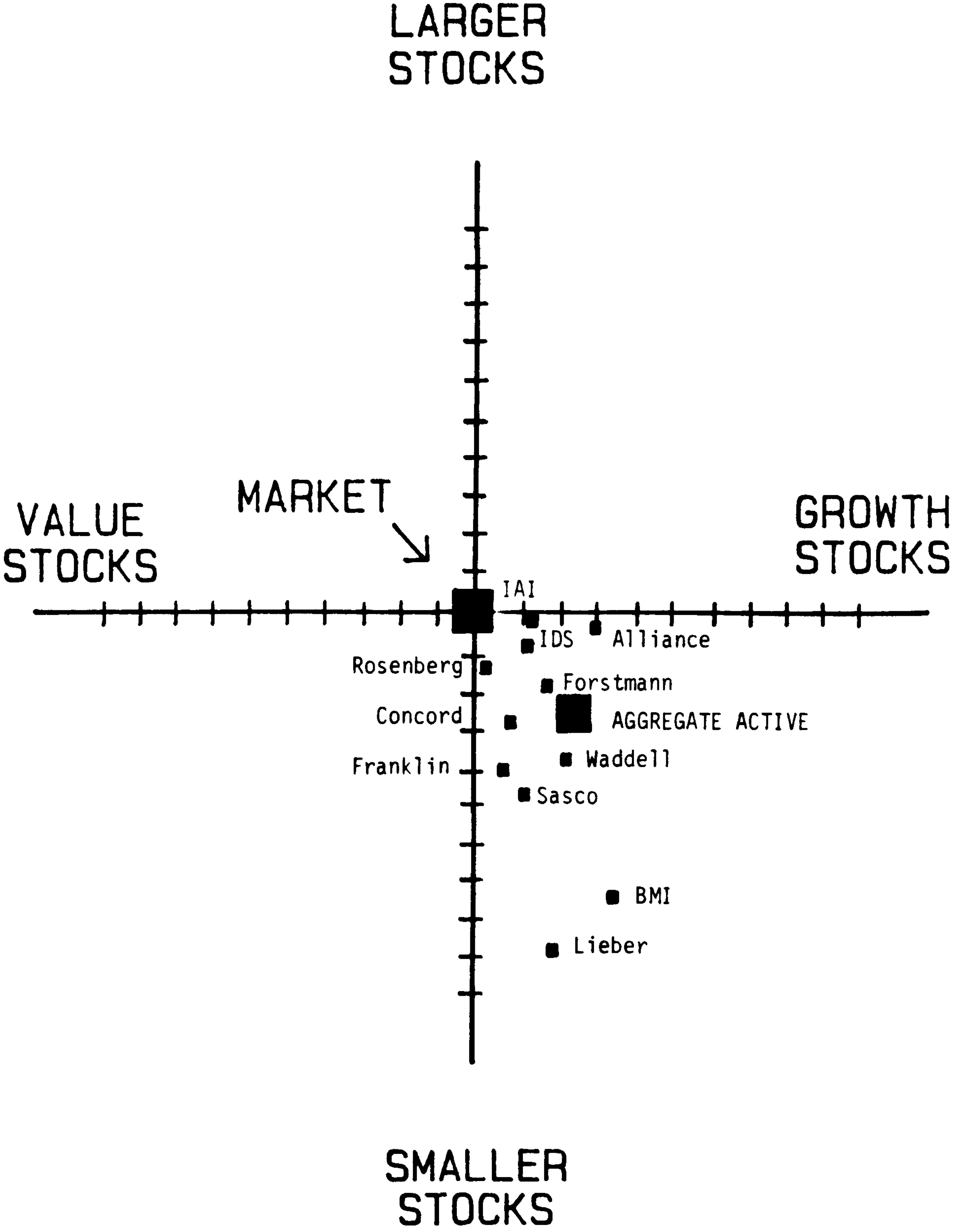
Richards & Tierney, Inc.

SMALL CAPITALIZATION STOCKS
Periods of Under and Over Performance
1926 - 1989

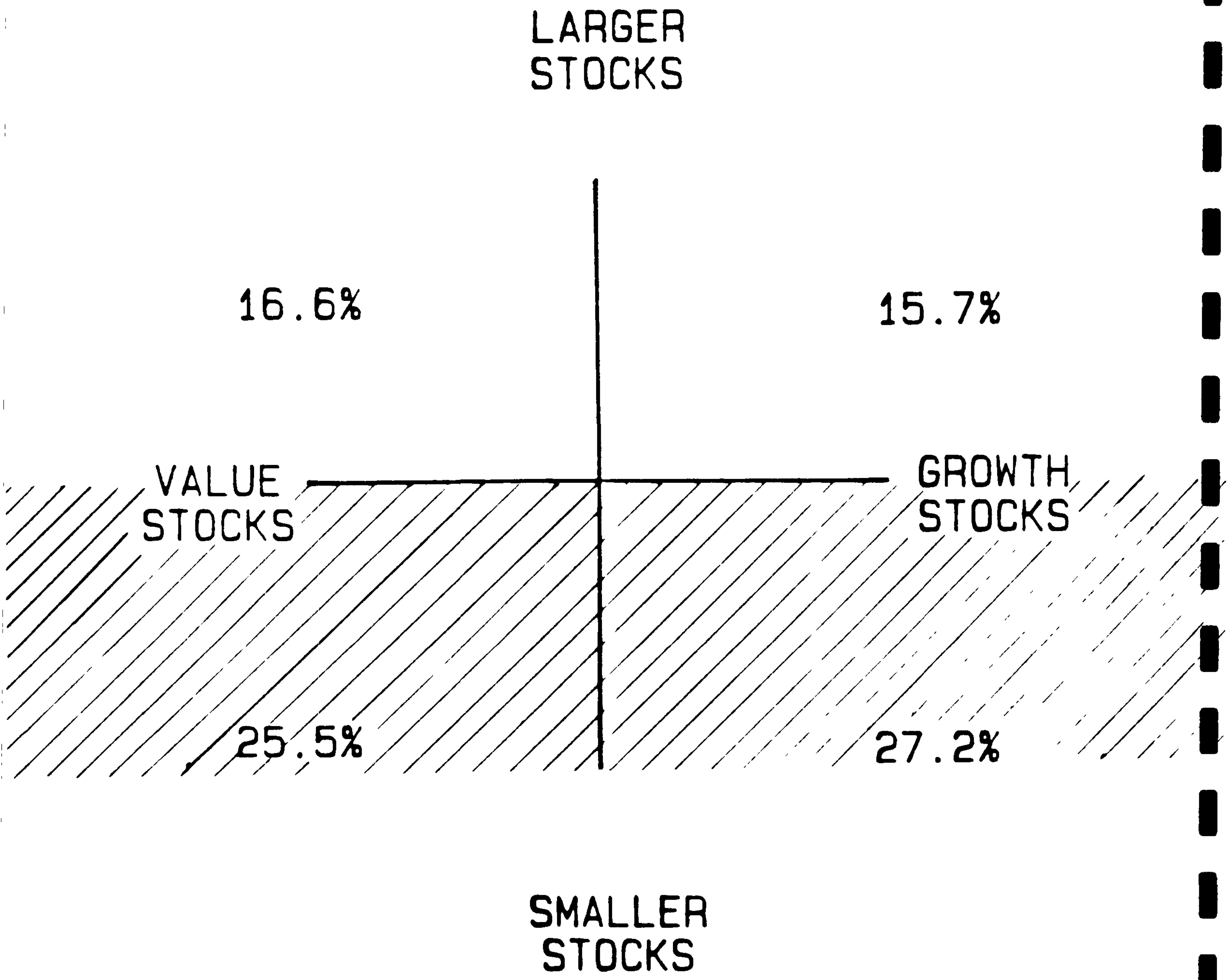


Source: Ibbotson Associates

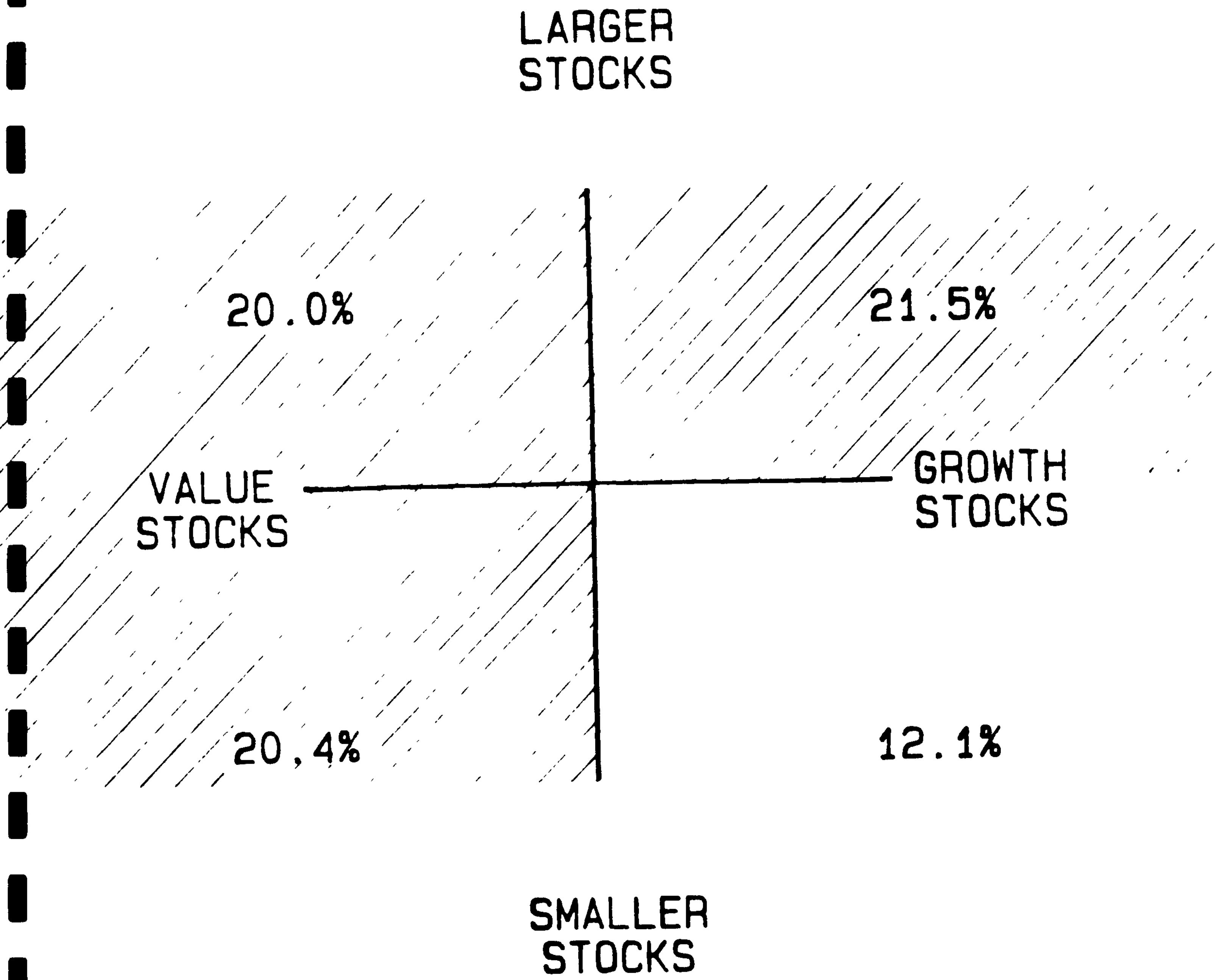
SBI ACTIVE MANAGERS VS. MARKET



STOCK MARKET RETURNS
BEFORE MANAGERS WERE HIRED
1977 - 1983
Wilshire 5000: 17.2%



STOCK MARKET RETURNS
AFTER MANAGERS WERE HIRED
1985 - 1989
Wilshire 5000: 19.1%



Tab A

QUARTERLY REPORT ON OBJECTIVES

BASIC RETIREMENT FUNDS	Status as of March 31, 1990
Market Value	**$6.8 billion**
Total Return (Annualized)	
■ Real (10 years) 3 to 5 percentage points over inflation	14.0% (nominal) 9.1 percentage points over
■ Relative (5 years) for the Total Fund Above composite index return	13.6% (nominal) equaled the composite index
■ Relative (5 years) for Stocks, Bonds and Cash Above median fund return	14.5% (nominal) 0.7 percentage points above
Liquidity	
■ Minimal cash	0.9% of total fund

POST RETIREMENT FUND	Status as of March 31, 1990
Market Value	**$5.1 billion**
Realized Earnings	$384 million in FY 1989
■ Above 8% per year	9% in FY 1989
Liquidity	
■ Minimal cash	5.1% of total fund

FUNDING (Basic + Post Funds)*	Status as of June 30, 1989
Achieve full funding by 2020	
■ Actuarial accrued liability	$12.9 billion
■ Actuarial value of assets	$9.4 billion
■ Percent funded	73%

* TRA, MSRS, PERA General Plans only. Based on FY89 valuation by State's actuary. Includes impact of legislation passed during the 1989 Legislative Session.

The executive summary highlights the asset mix, performance standards and investment results for the Basic Retirement Funds and the Post Retirement Fund.

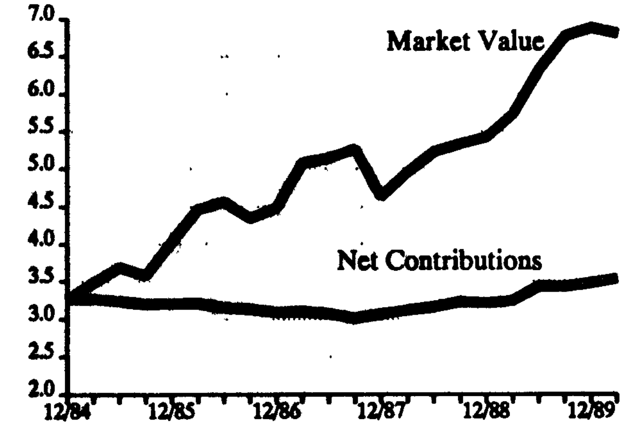
Additional detail on these funds as well as information on other funds managed by the Board can be found in the body of the Quarterly Investment Report.

EXECUTIVE SUMMARY

Basic Retirement Funds

Asset Growth

The market value of the Basic Funds decreased 1.1% during the first quarter of 1990. The decrease was due to fixed income and equity depreciation.



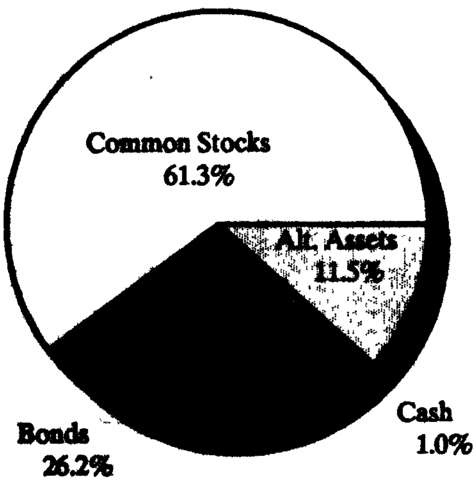
Asset Growth During First Quarter 1990 (Millions)

Beginning Value	$6,875
Net Contributions	55
Investment Return	-132
Ending Value	$6,798

Asset Mix

The asset mix of the Basic Funds is chosen to maximize long term rate of return. This requires a large commitment to common stocks. Other asset classes are used to limit short-run return volatility and to diversify portfolio holdings.

During the quarter there were no significant changes to the asset mix.



Actual Asset Mix
3/31/90

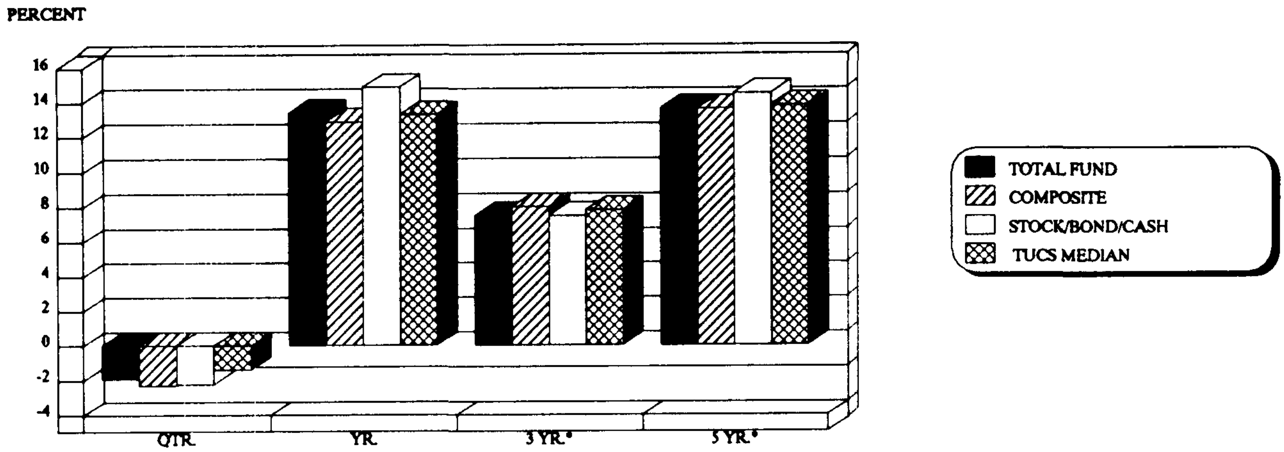
	Policy Asset Mix	Actual Mix 3/31/90	Actual Market Value (Millions)
Stocks	60.0%	61.3%	$4,169
Bonds	24.0	26.2	1,784
Alternative Assets	15.0	11.5	784
Unallocated Cash	1.0	1.0	61
	100.0%	100.0%	$6,798

Basic Funds (Con't.)

Total Fund Performance

Both the total fund and total fund without alternative assets trailed the return on the median fund and the composite index for the quarter but exceeded them for the year.

Given its large commitment to common stocks, the Basic Funds can be expected to outperform other balanced pension portfolios during periods of positive stock performance and underperform during periods of negative stock performance.



Period Ending 3/31/90

	Qtr.	Yr.	*(Annualized) 3 Yr.	5 Yr.
Total Fund	**-1.9%**	**13.4%**	**7.5%**	**13.6%**
Composite Index **	-2.3	12.9	8.0	13.6
Stocks, Bonds and Cash Only	**-2.2**	**14.9**	**7.5**	**14.5**
TUCS Median Balanced Fund***	-1.4	13.3	7.8	13.8

** Composite Index is weighted in a manner that reflects the policy asset mix of the Basic Funds.
*** Trust Universe Comparison Service (TUCS) includes returns of over 800 public and private tax-exempt investors

Stock Segment Performance

The Basic Funds' common stock segment exceeded the performance of its target for the latest quarter but trailed it for the latest year. Details on individual manager stock performance can be found on page 7 of the report.

	Qtr.	Yr.	(Annualized) 3 Yr.	5 Yr.
Stock Segment	-3.0%	15.9%	7.3%	15.6%
Wilshire 5000	-3.5	16.0	7.5	16.0

Bond Segment Performance

The bond segment of the Basic Funds trailed the performance of its target for the latest quarter and year. Details on individual bond manager performance can be found on page 8 of the report.

	Qtr.	Yr.	(Annualized) 3 Yr.	5 Yr.
Bond Segment	-1.0%	11.3%	7.0%	11.4%
Salomon Broad Index	-0.8	12.2	7.5	11.7

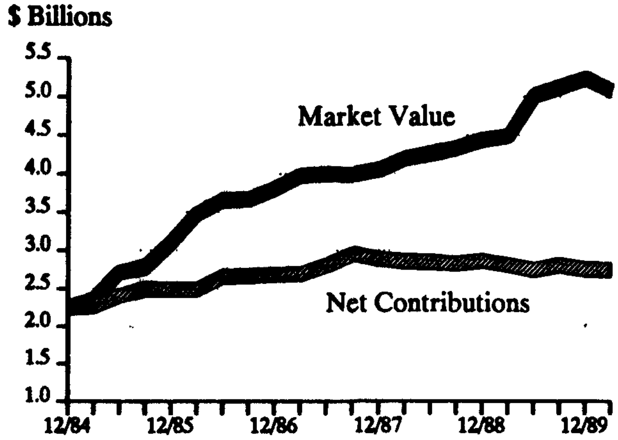
EXECUTIVE SUMMARY

Post Retirement Fund

Asset Growth

The market value of the Post Fund decreased by 3.2% during the first quarter of 1990.

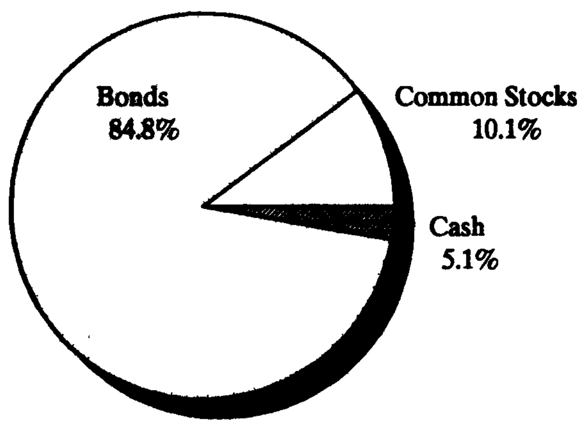
	Asset Growth During First Quarter 1990 (Millions)
Beginning Value	$5,238
Net Contributions	-11
Investment Return	-154
Ending Value	$5,073



Asset Mix

The asset mix of the Post Retirement fund is chosen to create a sizable, steady stream of income sufficient to pay currently promised benefits. This income stream is created by a large commitment to bonds, primarily through a dedicated bond portfolio. Assets not committed to bonds are invested in cash equivalents or common stocks.

Cash holdings rose during the quarter due to the receipt of semi-annual coupon payments from the dedicated bond portfolio.



Actual Asset Mix
3/31/90

	Actual Market Value (Millions)	Asset Mix 3/31/90
Common Stocks	$515	10.1%
Bonds	4,301	84.8
Unallocated Cash	257	5.1
	$5,073	100.0%

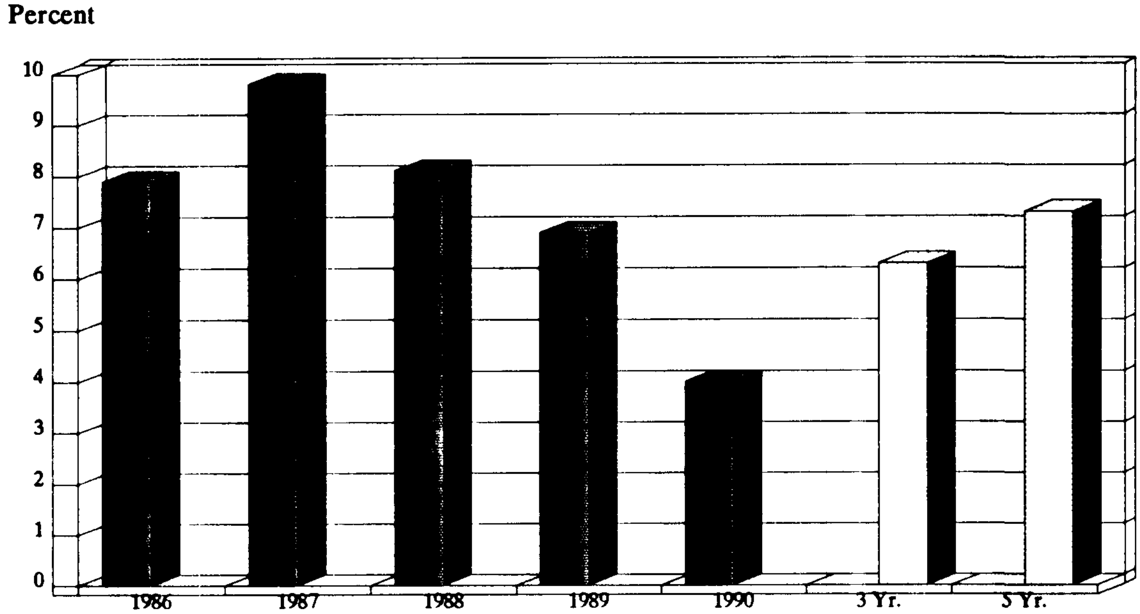
Post Fund (Con't.)

Total Fund Performance

Assets committed to the dedicated bond portfolio ensure that all existing promised benefits will be paid to current retirees. Excess investment earnings on Post Fund assets are used to finance permanent lifetime benefit increases for retirees.

Benefit increases are based upon earnings during a fiscal year and are effective at the start of the following calendar year. Benefit increases generated for the last five years are shown below.

Benefit Increases



	1986	1987	1988	1989	1990	(Annualized) 3 Yrs.	5 Yrs.
Benefit Increases	7.9%	9.8%	8.1%	6.9%	4.0%	6.3%	7.3%

Benefit increases are intended to compensate, to some degree, for the effect of inflation.

As measured by the Consumer Price Index (CPI), inflation increased by 3.7% on an annualized basis over the last five years (calendar 1985-1989).

Stock Segment Performance

The stock segment of the Post Fund equaled its benchmark for the latest quarter but trailed it for the latest year.

Period Ending 3/31/90

	Qtr.	Yr.	(Annualized) 3 Yr.	5 Yr.
Stock Segment	-3.3%	10.5%	6.7%	12.0%
Post Fund Benchmark	-3.3	17.7	N.A.	N.A.

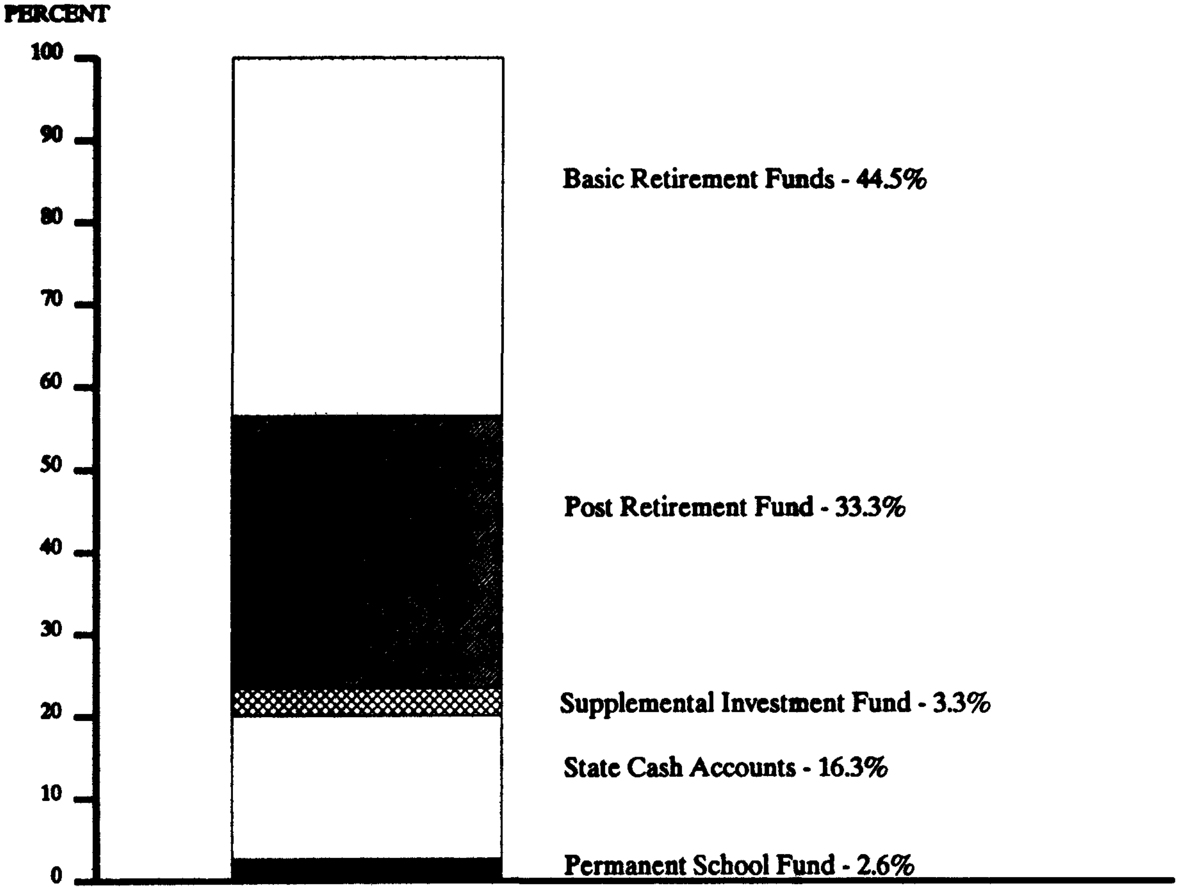
Bond Segment Performance

At the close of the quarter, the dedicated bond portfolio had a current yield of 8.04% and average duration of 7.69 years. The market value of the dedicated bond portfolio was $4.2 billion at the end of the quarter.

The dedicated bond portfolio is designed such that cash inflows from portfolio income and principal payments match required cash outflows to retirees. Thus, total return is not a relevant performance measure for the portfolio. Nevertheless, the bond segment provided a -3.1% return for the quarter and a 12.2% return for the year. This is consistent with the design of the dedicated bond portfolio.

EXECUTIVE SUMMARY

Funds Under Management



	3/31/90 Market Value (Billions)
Basic Retirement Funds	$6.8
Post Retirement Fund	5.1
Supplemental Investment Fund	0.5
State Cash Accounts	2.5
Permanent School Fund	0.4
Total	$15.3

MINNESOTA STATE BOARD

OF INVESTMENT

QUARTERLY INVESTMENT REPORT

First Quarter 1990

(January 1, 1990 - March 31, 1990)

Table of Contents

FINANCIAL MARKETS REVIEW

STOCK MARKET

Overall, stock prices declined during the first quarter. In January, the stock market declined substantially due to slow retail sales and overall poor corporate earnings reports. Also, inflation indices reported a higher than expected inflation rate. During February and March the market recovered some of its January loss because the trade deficit decreased and the leading indicators suggested a lower probability for a recession in 1990.

The Wilshire 5000 declined 3.5% for the quarter. Price performance among the different sectors varied widely during the quarter. Technology was the best performing sector with a return of 6.2%. The worst performing sector was the finance sector with a return of -9.2%. The Wilshire 5000 gained 16.0% during the latest year.

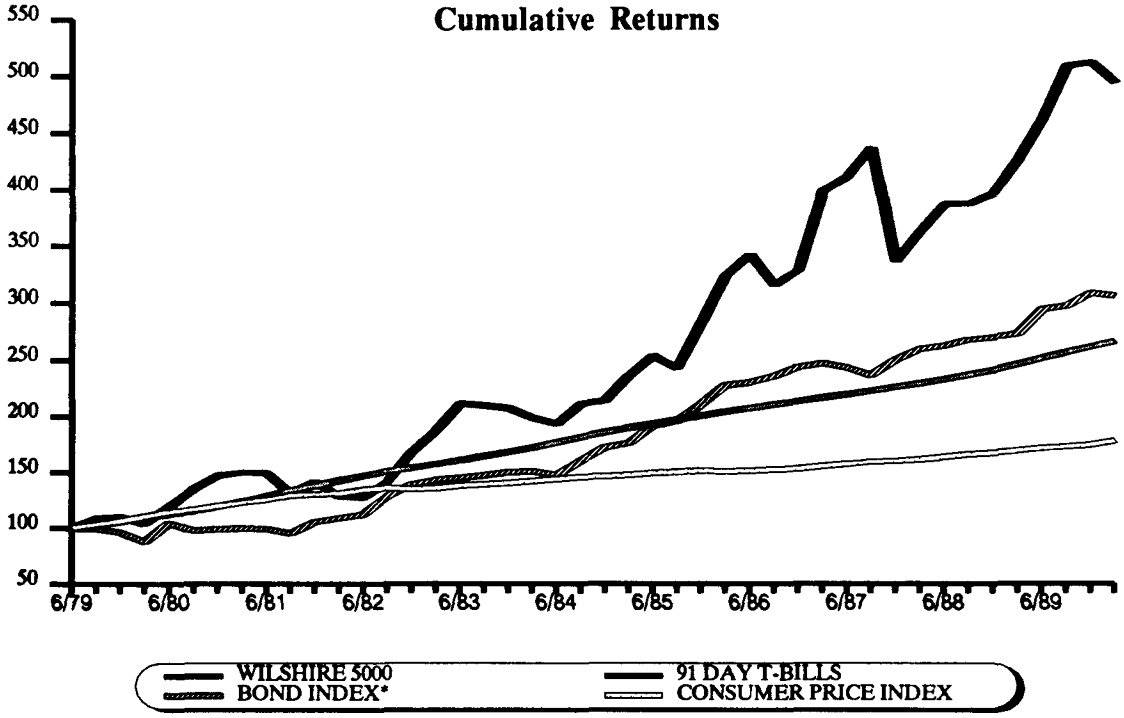
BOND MARKET

Similar to the stock market, the bond market declined in January but recovered some of its losses in February and March. The higher than expected inflation rate during January raised concerns in the bond market that the Federal Reserve would implement a more restrictive monetary policy thereby increasing interest rates. Inflation subsided moderately during February and March, but not enough to instill a high enough level of confidence in the market that inflation was not going to increase over previous expectations.

Overall, the Salomon Brothers Broad Investment Grade (BIG) Index declined 0.8% for the quarter. Mortgage securities were the best performing sector with a gain of 0.1% and Treasury issues provided the lowest return of -1.3%. The Salomon BIG Index gained 12.2% for the latest year.

PERFORMANCE OF CAPITAL MARKETS

Cumulative Returns



* Merrill Lynch Master Index through 12/79; Salomon Broad Investment Grade Bond Index thereafter

FINANCIAL MARKETS REVIEW

REAL ESTATE

Currently, the real estate market faces oversupply and slow demand. These factors are most apparent in second tier office properties, small shopping centers and properties located in the Southwest. The stronger sectors of the real estate market include warehouse and distribution facilities and larger retail centers. In the near term, a significant reduction in real estate lending, resulting from savings and loans and banks reducing real estate lending, will slow the pace of new development and existing project refinancings.

VENTURE CAPITAL

There continues to be a heavy flow of venture capital offerings. However, these funds are taking longer to raise less money than in the past.

A combination of factors has contributed to the decline in funding levels. First, funds initiated within the last five years have provided somewhat disappointing returns to date. Second, strong performance from stocks and bonds has made venture capital returns less competitive. Finally, funding has been influenced by the conditions of the public market, which has not been receptive to new issues.

RESOURCE FUNDS

West Texas Intermediate oil declined to $20.30 per barrel due to increased OPEC production. Increased U.S. demand and an accelerating decline in U.S. crude production has caused oil import dependency to rise. Experts expect further crude price declines if OPEC continues overproduction. However, summer driving may stem price declines and cause prices to increase.

BASIC RETIREMENT FUNDS

Investment Objectives

The Basic Retirement Funds are composed of the retirement assets for currently working participants in the statewide retirement funds.

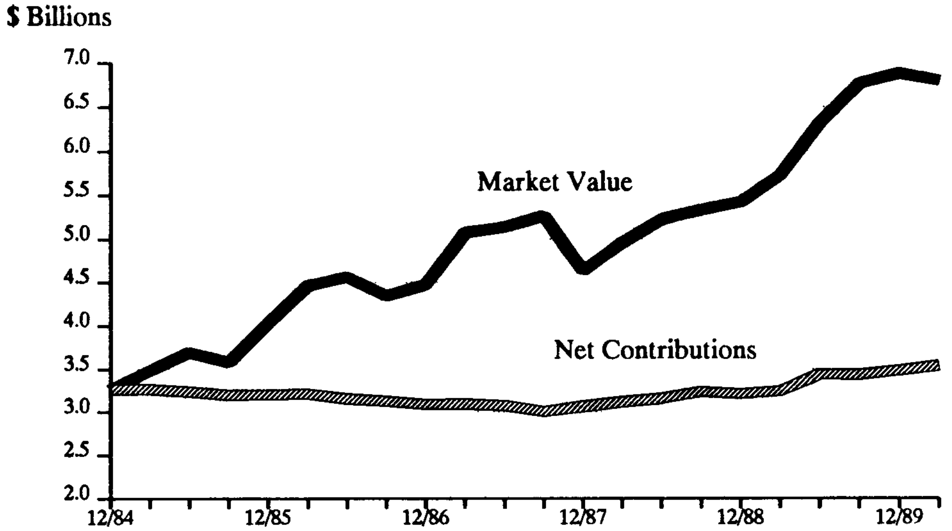
Based upon the Basic Funds' adequate funding levels and participant demographics, its investment time horizon is quite long. This extended time horizon permits the Board to take an aggressive, high expected return investment policy which incorporates a sizable equity component.

The Board has established three return objectives for the Basic Funds:

- The total fund should provide real rates of return that are 3-5 percentage points greater than the rate of inflation over moving 10 year periods.
- Stocks, bonds and cash should outperform the median fund from a universe of public and private funds with a balanced asset mix over moving 5 year periods.
- The total fund should outperform a composite index weighted in a manner that reflects the long term asset allocation of the Basic Funds over moving 5 year periods.

Asset Growth

The market value of the Basic Retirement Funds' assets decreased 1.1% during the first quarter of 1990. The decrease was due to fixed income and equity depreciation. Alternative assets also had a negative return for the quarter.



In Millions

	12/85	12/86	12/87	12/88	12/89	3/90
Beginning Value	$3,265	$4,030	$4,474	$4,628	$5,420	$6,875
Net Contributions	-62	-113	-26	146	269	55
Investment Return	827	557	180	646	1,186	-132
Ending Value	$4,030	$4,474	$4,628	$5,420	$6,875	$6,798

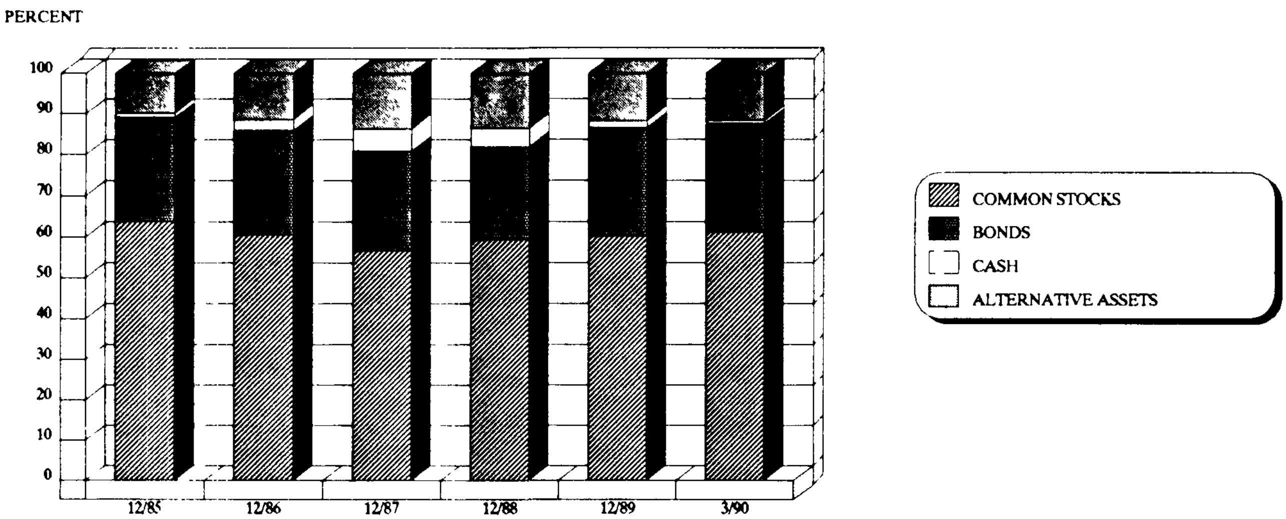
BASIC RETIREMENT FUNDS

Asset Mix

Based on the Basic Funds' investment objectives and the expected long-run performance of the capital markets, the Board has adopted the following long term policy asset allocation for the Basic Funds:

Common Stocks	60.0%
Bonds	24.0
Real Estate	10.0
Venture Capital	2.5
Resource Funds	2.5
Unallocated Cash	1.0

During the quarter there were no significant changes to the asset mix.



	Last Five Years					Latest Qtr.
	12/85	12/86	12/87	12/88	12/89	3/90
Stocks	63.8%	60.6%	56.7%	59.5%	60.2%	61.3%
Bonds	25.3	25.3	24.2	22.4	26.4	26.2
Real Estate	7.2	8.3	9.5	9.0	7.5	7.5
Venture Capital	1.3	1.8	2.8	3.1	2.8	2.9
Resource Funds	1.3	1.4	1.4	1.5	1.4	1.1
Unallocated Cash	1.1	2.6	5.4	4.5	1.7	1.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

BASIC RETIREMENT FUNDS

Total Fund Performance vs. Standards

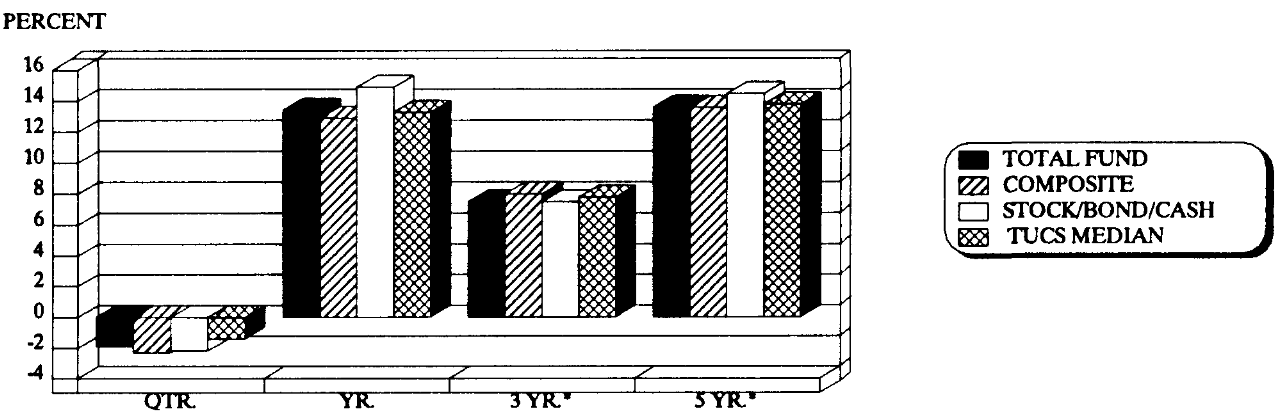
The Basic Funds' long-term rate of return performance is evaluated relative to two specific benchmarks:

- **Composite Index.** The returns provided by the total portfolio are expected to exceed those derived from a composite of market indices, weighted in the same proportion as the Basic Funds' policy asset allocation. As of 7/1/89, the composite index is weighted: 60% Wilshire 5000 Stock Index, 24% Salomon Broad Bond Index, 10% Real Estate Funds, 2.5% Venture Capital Funds, 2.5% Resource Funds, and 1% 91 Day T-Bills.

- **Median Tax-Exempt Fund.** Stock, bond and cash assets are expected to outperform the median return produced by a representative sample of other public and private tax-exempt balanced funds. The sample universe used by the Board is the Wilshire Associates Trust Universe Comparison Service (TUCS).

The long term asset allocation of the Basic Funds is based on the superior performance of common stocks over the history of the capital markets. The asset mix is designed to add value to the Basic Funds' over their long-term investment time horizon. In the short-run, the Basic Funds can be expected to outperform the median balanced portfolio during periods of positive relative stock performance and underperform during periods of negative stock performance.

The Basic Funds total portfolio exceeded its composite index for the latest quarter and for the latest year. Because of the Basic Funds sizable stock allocation and relatively good performance of the stock market, the Basic Funds' exceeded the median balanced fund for the year. Excluding alternative assets, the Basic Funds ranked in the lowest third (70th percentile) of the TUCS universe for the quarter. However, it ranked in the top third (29th percentile) for the latest year and the top half (38th percentile) for the last five years.



			Period Ending 3/31/90	
			*(Annualized)	
	Qtr.	Yr.	3 Yr.	5 Yr.
Total Fund	**-1.9%**	**13.4%**	**7.5%**	**13.6%**
Composite Index	-2.3	122.9	8.0	13.6
Stocks, Bonds and Cash Only	**-2.2**	**14.9**	**7.5**	**14.5**
TUCS Median Balanced Fund	-1.4	13.3	7.8	13.8

BASIC RETIREMENT FUNDS

Segment Performance vs. Standards

Stock Segment

The Basic Funds' common stock segment exceeded its performance target for the latest quarter but trailed it for the latest year.

	Qtr.	Yr.	Annualized 3 Yrs.	Annualized 5 Yrs.
Stock Segment	-3.0%	15.9%	7.3%	15.6%
Wilshire 5000	-3.5	16.0	7.5	16.0

Bond Segment

The bond segment of the Basic Funds trailed the performance of its target for the latest quarter and year.

	Qtr.	Yr.	Annualized 3 Yrs.	Annualized 5 Yrs.
Bond Segment	-1.0%	11.3%	7.0%	11.4%
Salomon Bond Index	-0.8	12.2	7.5	11.7

Real Estate Segment

The real estate segment of the Basic Funds trailed its target for the latest quarter but exceeded its target for the latest year.

The Wilshire Real Estate Index contains returns of 30 commingled funds. The index does not include returns from funds that are less than 3 years old or are not fully invested.

	Qtr.	Yr.	Annualized 3 Yrs.	Annualized 5 Yrs.
Real Estate Segment	1.5%	5.9%	7.2%	7.5%
Real Estate Index	1.6	5.3	6.9	7.6
Inflation	2.1%	5.2%	4.7%	3.9%

Venture Capital and Resource Funds

Comprehensive data on returns provided by the resource and venture capital markets are not available at this time. Actual returns from these assets are shown in the table.

The SBI began its venture capital and resource programs in the mid-1980's. Current returns reflect the relative immaturity of the investments.

	Qtr.	Yr.	Annualized 3 Yrs.	Annualized 5 Yrs.
Venture Capital Segment	0.6%	3.1%	11.6%	7.0%
Resource Fund Segment	-11.8	-11.7	2.9	-1.6

BASIC RETIREMENT FUNDS

Stock Manager Performance vs. Benchmarks

Common stock manager returns are evaluated against the performance of customized indices constructed to represent the managers' specific investment approaches. These custom indices are commonly referred to as "benchmark portfolios." The benchmark portfolios take into account the equity market forces that at times favorably or unfavorably impact certain investment styles. Thus, benchmark portfolios are the appropriate targets against which to judge the managers' performances.

Manager performance relative to benchmarks is evaluated on a quarterly basis by the Equity Manager Committee of the Investment Advisory Council.

As a group, the active and passive common stock managers exceeded the performance of their aggregate benchmark for the latest quarter but trailed it for the latest year.

Individually, five out of the ten managers met or exceeded their benchmark. A comprehensive analysis of the individual managers' performance is included in this quarter's Equity Manager Committee Report.

	Percent of Segment 3/31/90	Market Value 3/31/90 (Thousands)	Quarter Ending 3/31/90 Actual	Quarter Ending 3/31/90 Bmrk	Year Ending 3/31/90 Actual	Year Ending 3/31/90 Bmrk	(Annualized) Since 1/1/84 Actual	(Annualized) Since 1/1/84 Bmrk
Active Managers								
Alliance	9.4%	$390,704	-2.6%	-0.9%	25.7%	14.6%	17.2%	12.2%
Concord	2.5	105,567	-1.2	-3.8	10.7	12.2		
Forstmann	4.5	188,858	-2.7	-1.3	6.7	11.8	13.5	12.1
Franklin	2.6	110,074	-3.2	-3.6	15.5	9.8		
IDS	4.1	172,959	0.3	-2.7	24.2	14.6	16.1	14.7
IAI	2.1	89,403	-2.9	-2.0	16.4	16.0	13.8	15.0
Lieber & Co.	2.5	105,867	-5.3	-3.9	5.1	6.5	11.6	10.5
Rosenberg	2.7	111,634	-2.4	-3.3	17.1	14.8		
Sasco	2.6	107,776	-2.0	-1.2	13.2	11.6		
Waddell & Reed	4.1	171,585	-0.3	-0.3	20.0	11.0	12.4	11.1
Aggregate Active	37.1%	$1,554,427	-2.2%		16.2%		13.4%	
Passive Manager								
Wilshire Associates	62.9%	$2,614,791	-3.5%	-3.5%	15.6%	16.0%	14.8%	14.9%
Aggregate Passive	62.9%	$2,614,791	-3.5%	-	15.6%		14.8%	
Total Stock Segment	**100.0%**	**$4,169,218**	**-3.0%**	**-2.9%**	**15.9%**	**14.7%**	**14.4%**	**14.5%**
Wilshire 5000 Index			-3.5%		16.0%		14.9%	

Notes: Total segment and aggregate active performance numbers include returns of any managers retained during the time periods shown but subsequently terminated by the Board.

Concord, Franklin, Rosenberg and Sasco were retained effective April 3, 1989.

BASIC RETIREMENT FUNDS

Bond Manager Performance vs. Benchmarks

Bond manager returns are evaluated against the performance of customized indices constructed to represent the managers' specific investment approaches. These custom indices are commonly referred to as "benchmark portfolios." The benchmark portfolios take into account the bond market forces that at times favorably or unfavorably impact certain investment styles. Thus, benchmark portfolios are the appropriate targets against which to judge the managers' performances.

Manager performance relative to benchmarks is evaluated on a quarterly basis by the Fixed Income Manager Committee of the Investment Advisory Council.

As a group, the active and passive bond managers trailed the performance of their aggregate benchmark for the latest quarter and year.

The performance of the individual managers for the quarter was poor. One exceeded the benchmark while the others underperformed relative to their benchmark. A comprehensive analysis of the individual managers' performance is included in this quarter's Fixed Income Manager Committee Report.

	Percent of Segment 3/31/90	Market Value 3/31/90 (Thousands)	Quarter Ending 3/31/90 Actual	Bmrk	Year Ending 3/31/90 Actual	Bmrk	(Annualized) Since 7/1/84 Actual	Bmrk
Active Managers								
IAI	6.0%	$107,442	-2.7%	-1.2%	11.9%	12.3%	13.4%	13.5%
Lehman	6.8	120,787	-0.5	-0.4	11.0	11.8	12.5	12.6
Miller Anderson	9.8	174,256	-0.7	-0.8	7.6	12.2	13.0	13.5
Morgan Stanley	6.4	114,609	-1.7	-0.1	10.1	12.2	12.4	13.2
Western Asset	15.0	268,195	-1.4	-0.4	12.5	12.3	14.6	13.3
Aggregate Active	44.0	$785,289	-1.3%		10.5%		13.2%	
Semi-Passive Managers								
Fidelity Management	28.0%	$499,625	-0.6%	-0.8%	12.1%	12.2%		
Lincoln Capital	28.0	499,458	-0.7	-0.8	11.9	12.2		
Aggregate Passive	56.0	$999,083	-0.7%		12.0%			
Total Bond Segment	**100.0%**	**$1,784,372**	**-1.0%**	**-0.7%**	**11.3**	**12.1%**	**12.7%**	**12.7%**
Salomon Broad Index			-0.8%		12.2%		13.5%	

Notes: Total segment and aggregate active performance numbers include returns of any managers retained during the time periods shown but subsequently terminated by the Board.

The semi-passive managers were retained effective July 1, 1988.

POST RETIREMENT FUND

Investment Objectives

The Post Retirement Investment Fund contains the pension assets of retired public employees covered by statewide retirement plans.

Upon the employees' retirement, sums of money sufficient to finance fixed monthly annuities are transferred from accumulation pools in the Basic Funds to the Post Fund. In order to support promised benefits, the Post Fund must "earn" at least 5% on its invested assets each year. If the Post Fund exceeds this earnings rate, excess earnings are used to finance permanent benefit increases for eligible retirees.

Unrealized capital gains (or losses) are excluded from the statutory definition of earnings. For this reason the Post Fund is not designed to maximize long-term total rates of return.

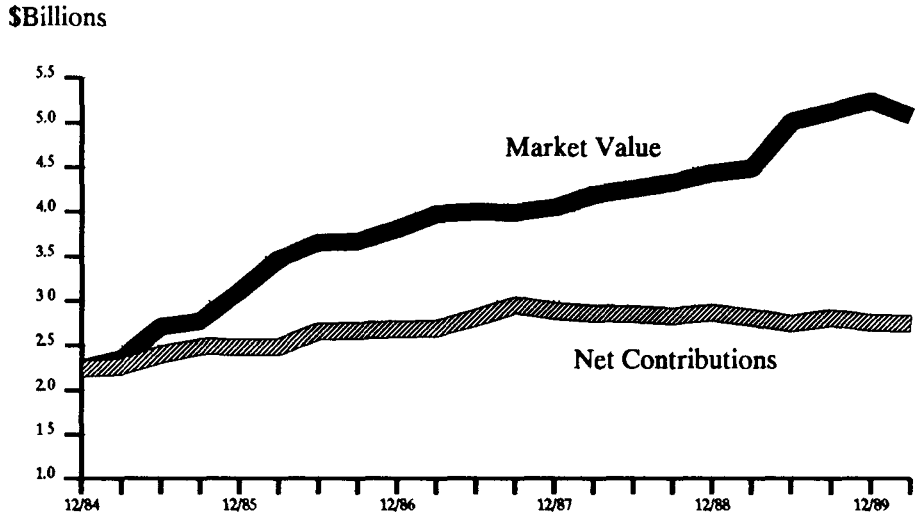
The Board has established two earnings objectives for the Post Fund:

- generate 5% realized earnings to maintain current benefits.
- generate at least 3% additional realized earnings to provide benefit increases.

The Post Fund is not oriented toward maximizing long-term total rate of return. Rather, the SBI attempts to generate a high, consistent stream of earnings for the Post Fund that will maintain current benefits, as well as produce benefit increases over time.

Asset Growth

The market value of the Post Fund decreased by 3.2% during the first quarter of 1990. Asset growth decreased due to negative investment returns for both the bond and equity portfolios.



In Millions

	12/85	12/86	12/87	12/88	12/89	3/90
Beginning Value	$2,246	$3,107	$3,808	$4,047	$4,434	$5,238
Net Contributions		239	199	207	25	-11
Investment Return	622	502	32	414	779	-154
Ending Value	$3,107	$3,808	$4,047	$4,434	$5,238	$5,073

POST RETIREMENT FUND

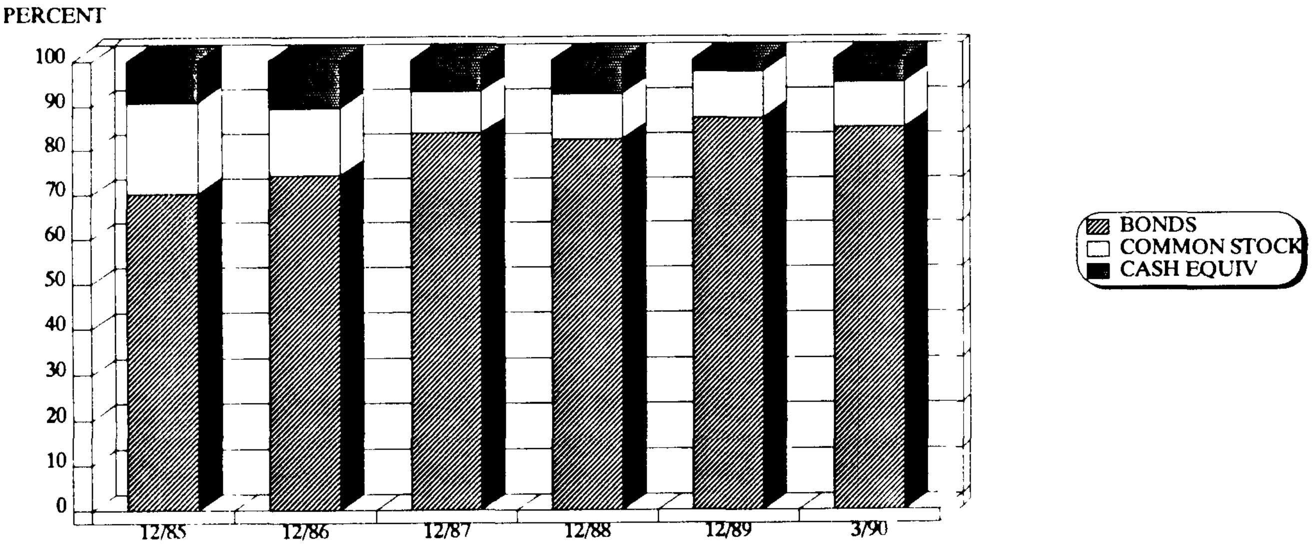
Asset Mix

The Board has designed the asset mix of the Post Fund to generate the sizable stable earnings stream necessary to finance monthly payments to retirees.

The SBI invests the majority of the Post Fund's assets in a dedicated bond portfolio. A dedicated bond portfolio is a collection of various maturity, high-quality bonds which generate cash flows from income and principal payments that match a specific stream of liabilities.

Assets not committed to the dedicated bond portfolio generally are invested in common stocks and cash equivalents.

Cash holdings increased during the quarter due to the receipt of semi-annual coupon payments from the dedicated bond portfolio. Cash not needed to meet short-term benefit payments was reinvested in April 1990.



	Last Five Years					Latest Qtr.
	12/85	12/86	12/87	12/88	12/89	3/90
Bonds	70.2%	74.2%	83.7%	82.3%	87.1%	84.8%
Stocks	20.5	15.1	9.3	10.1	10.2	10.1
Unallocated Cash	9.3	10.7	7.0	7.6	2.7	5.1
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

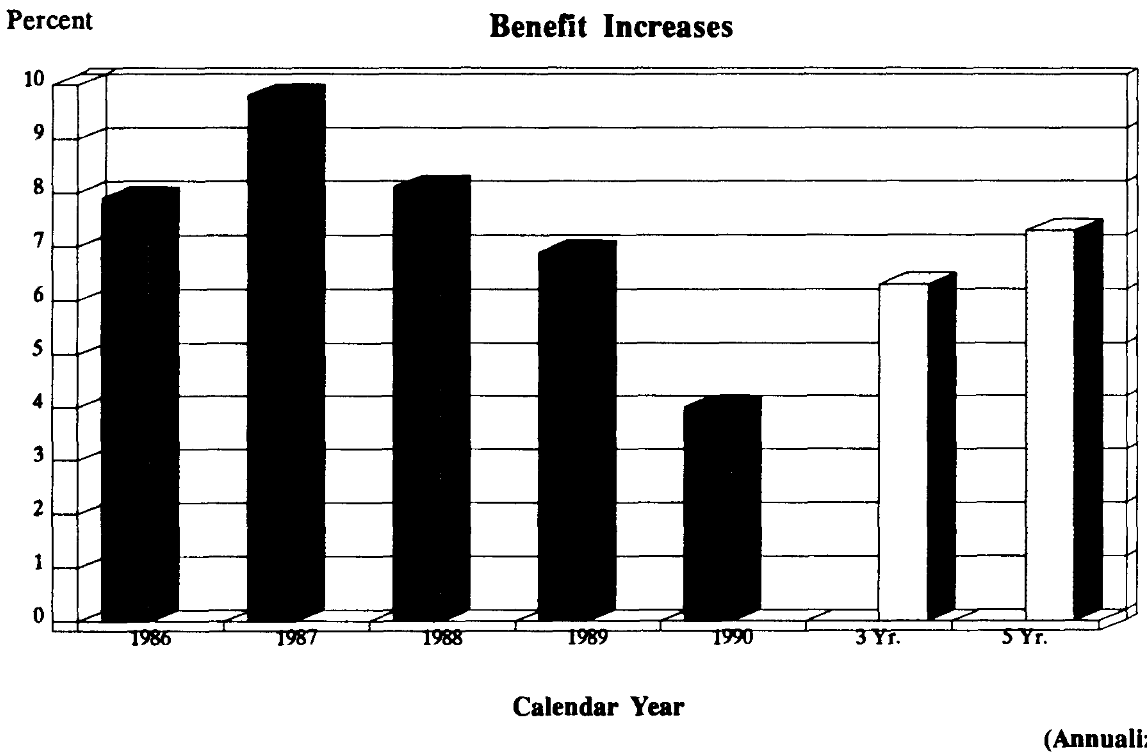
POST RETIREMENT FUND

Total Fund Performance

The ability of the Post Fund to maintain current benefit levels and provide future benefit increases depends upon its earnings. State statutes define earnings for the Post Fund as interest and dividend income as well as realized equity and fixed income capital gains (or losses). Unrealized capital gains (or losses) have no direct impact on the benefits paid out to retirees. Unrealized capital gains (or losses) are excluded from defined earnings in order to make benefit payments largely insensitive to near-term fluctuations in the capital markets.

Assets committed to the dedicated bond portfolio ensure that all existing promised benefits will be paid to current retirees. Excess investment earnings on the Post Fund assets are used to finance permanent lifetime benefit increases for retirees.

Benefit increases are based upon earnings during a fiscal year and are effective at the start of the following calendar year. Benefit increases generated over the last five years are shown below.



						(Annualized)	
	1986	1987	1988	1989	1990	3 Yrs.	5 Yrs.
Benefit Increases	7.9%	9.8%	8.1%	6.9%	4.0%	6.3%	7.3%

Benefit increases are intended to compensate, to some degree, for the effect of inflation.

As measured by the Consumer Price Index (CPI), inflation increased by 3.7% on an annualized basis over the last five years (calendar 1985-1989).

POST RETIREMENT FUND

Segment Performance

Stock Segment Performance

The stock segment of the Post Fund equaled its benchmark for the latest quarter but trailed it for the latest year.

	Period Ending 3/31/90			
			(Annualized)	
	Qtr.	Yr.	3 Yrs.	5 Yrs.
Stock Segment	-3.3%	10.5%	6.7%	12.0%
Post Fund Benchmark	-3.3	17.7	N.A.	N.A.

Bond Segment Performance

The composition of the Post Retirement Investment Fund's dedicated bond portfolio remained essentially unchanged during the first quarter.

The Post Fund's bond portfolio provided a -3.1% total rate of return for the quarter and a 12.2% return for the year. This performance is consistent with the bond portfolio's design. The Post Fund's dedicated bond portfolio is structured so that portfolio income and maturities match the Fund's liability stream. As a result, the duration of the dedicated bond portfolio exceeds that of the bond market. Consequently, on a total return basis, the portfolio can be expected to underperform the bond market in down periods and outperform the market in up periods.

Dedicated Bond Portfolio Statistics
3/31/90

Value at Market	$ 4,208,691,762
Value at Cost	4,005,329,668
Average Coupon	5.60%
Current Yield	8.04
Yield to Maturity	9.17
Current Yield at Cost	8.46
Time to Maturity	15.48 Years
Average Duration	7.69 Years
Average Quality Rating	AAA
Number of Issues	431

SUPPLEMENTAL INVESTMENT FUND

The Minnesota Supplemental Investment Fund is a multi-purpose investment program that offers a range of investment options to state and local public employees. The different participating groups use the Fund for a variety of purposes:

- It functions as the investment manager for all assets of the Unclassified Employees Retirement Plan and the Public Employees Defined Contribution Plan.
- It acts as the investment manager for all assets of the supplemental retirement programs for state university and community college teachers and for Hennepin County Employees.
- It is one investment vehicle offered to public employees as part of the state's Deferred Compensation Plan.
- It serves as an external money manager for a portion of some local police and firefighter retirement plans.

A wide diversity of investment goals exists among the Fund's participants. In order to meet those needs, the Fund has been structured much like a "family of mutual funds." Participants may allocate their investments among one or more accounts that are appropriate for their needs, within the statutory requirements and rules established by the participating organizations. Participation in the Fund is accomplished through the purchase or sale of shares in each account.

The investment returns shown in this report are calculated using a time-weighted rate of return formula. These returns may differ slightly from calculations based on share values, due to the movement of cash flows in and out of the accounts.

On March 31, 1990 the market value of the entire fund was $461 million.

Investment Options

Income Share Account - an actively managed, balanced portfolio utilizing both common stocks and bonds.

Growth Share Account - an actively managed, all common stock portfolio.

Common Stock Index Account - a passively managed, all common stock portfolio designed to track the performance of the entire stock market.

Bond Market Account - an actively managed, all bond portfolio.

Money Market Account - a portfolio utilizing short term, liquid debt securities.

Guaranteed Return Account - an option utilizing guaranteed investment contracts (GIC's), which offer a fixed rate of return for a specified period of time.

SUPPLEMENTAL INVESTMENT FUND

Income Share Account

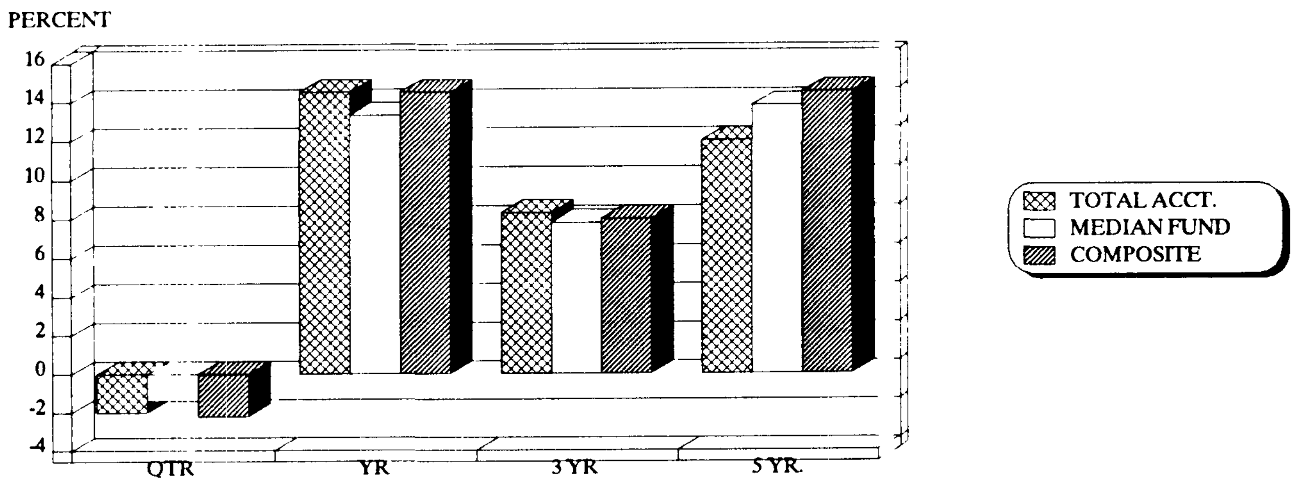
Investment Objective
The primary investment objective of the Income Share Account is similar to that of the Basic Retirement Funds. The Account seeks to maximize long-term real rates of return, while limiting short-run portfolio return volatility.

Asset Mix
The Income Share Account is invested in a balanced portfolio of common stocks and fixed income securities. Common stocks provide the potential for significant capital appreciation, while bonds act as a deflation hedge and provide portfolio diversification.

	Target	Actual
Stocks	60.0%	57.5%
Bonds	35.0	32.3
Unallocated Cash	5.0	10.2
	100.0%	100.0%

Investment Management
The Account combines internal and external management. Internal investment staff manage the entire fixed income segment. Currently, the entire stock segment is managed by Wilshire Associates as part of a passively managed index fund designed to track the Wilshire 5000. Prior to April, 1988, a significant portion of the stock segment was actively managed.

Market Value
On March 31, 1990 the market value of the Income Share Account was $238 million.



Period Ending 3/31/90

	Qtr.	Yr.	Annualized 3 Yr.	Annualized 5 Yr.
Total Account	-2.0%	14.5%	8.3%	12.0%
Median Fund*	-1.4	13.3	7.8	13.8
Composite**	-2.2	14.5	8.0	14.5
Equity Segment	-3.5	15.6	7.3	12.4
Wilshire 5000	-3.5	16.0	7.5	16.0
Bond Segment	-0.6	11.8	8.5	11.3
Salomon Bond Index	-0.8	12.2	7.5	11.7

* TUCS Median Balanced Portfolio

** 60/35/5 Wilshire 5000/Salomon Broad Bond Index/T-Bills Composite

SUPPLEMENTAL INVESTMENT FUND

Growth Share Account

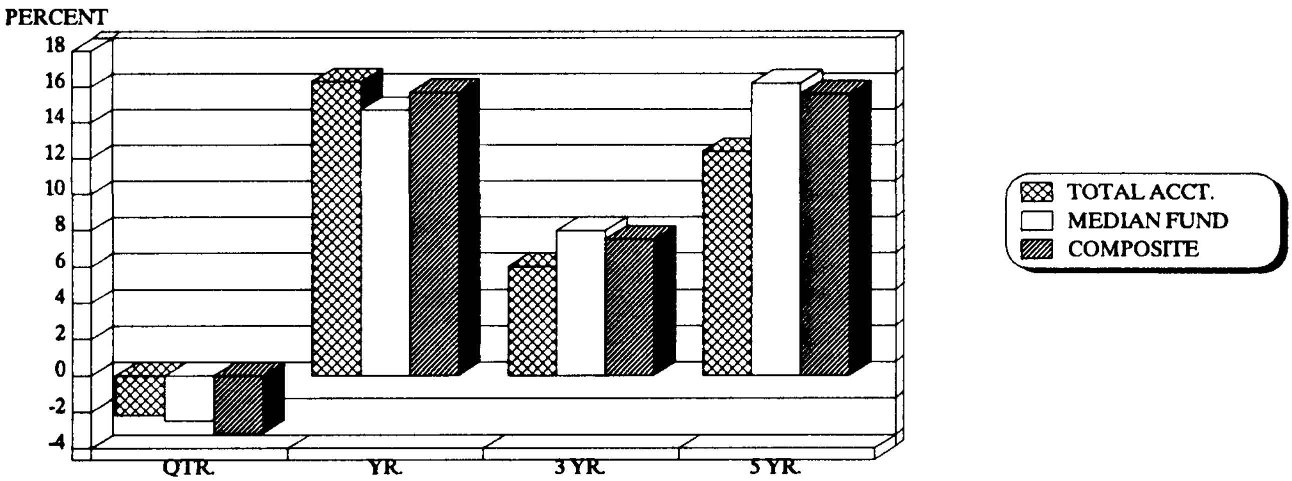
Investment Objective
The Growth Share Account's investment objective is to generate above-average returns from capital appreciation on common stocks.

Asset Mix
The Growth Share Account is invested almost entirely in common stocks. Generally, the small cash equivalents component represents the normal cash reserves held by the Account as a result of net contributions not yet allocated to stocks.

	Target	Actual
Stocks	95.0%	99.6%
Unallocated Cash	5.0	0.4
	100.0%	100.0%

Investment Management
Currently, the entire Account is managed by the same group of active external stock managers utilized by the Basic Retirement Funds. (See page 7 for performance results for these managers.) Prior to April, 1988, other active managers controlled a substantial portion of the account.

Market Value
On March 31, 1990 the market value of the Growth Share Account was $71 million.



Period Ending 3/31/90

	Qtr.	Yr.	Annualized 3 Yr.	Annualized 5 Yr.
Total Account	-2.2%	16.3%	6.0%	12.4%
Median Fund*	-2.5	14.7	8.0	16.2
Composite**	-3.2	15.7	7.5	15.6
Equity Segment	-2.2	16.0	6.1	12.7
Wilshire 5000	-3.5	16.0	7.5	16.0

* TUCS Median Managed Equity Portfolio

** 95/5 Wilshire 5000/T-Bills Composite

SUPPLEMENTAL INVESTMENT FUND

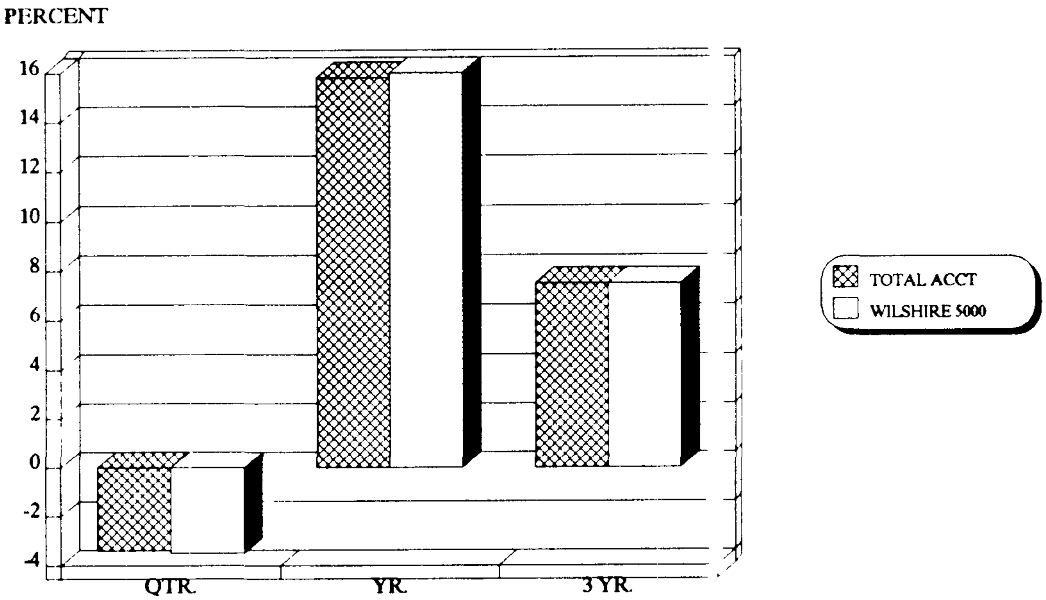
Common Stock Index Account

Investment Objective and Asset Mix
The investment objective of the Common Stock Index Account is to generate returns that match those of the common stock market. The Account is designed to track the performance of the Wilshire 5000, a broad-based equity market indicator.

The Account is invested 100% in common stocks.

Investment Management
The entire Account is managed by Wilshire Associates as part of a passively managed index fund.

Market Value
On March 31, 1990 the market value of the Common Stock Index Account was $8 million.



Period Ending 3/31/90

	Qtr.	Yr.	3 Yrs. Annualized	Since Inception Annualized*
Total Account	-3.4%	15.8%	7.5%	12.5%
Wilshire 5000	-3.5	16.0	7.5	12.4

* The Common Stock Index Account was added to the Supplemental Fund in July 1986.

SUPPLEMENTAL INVESTMENT FUND

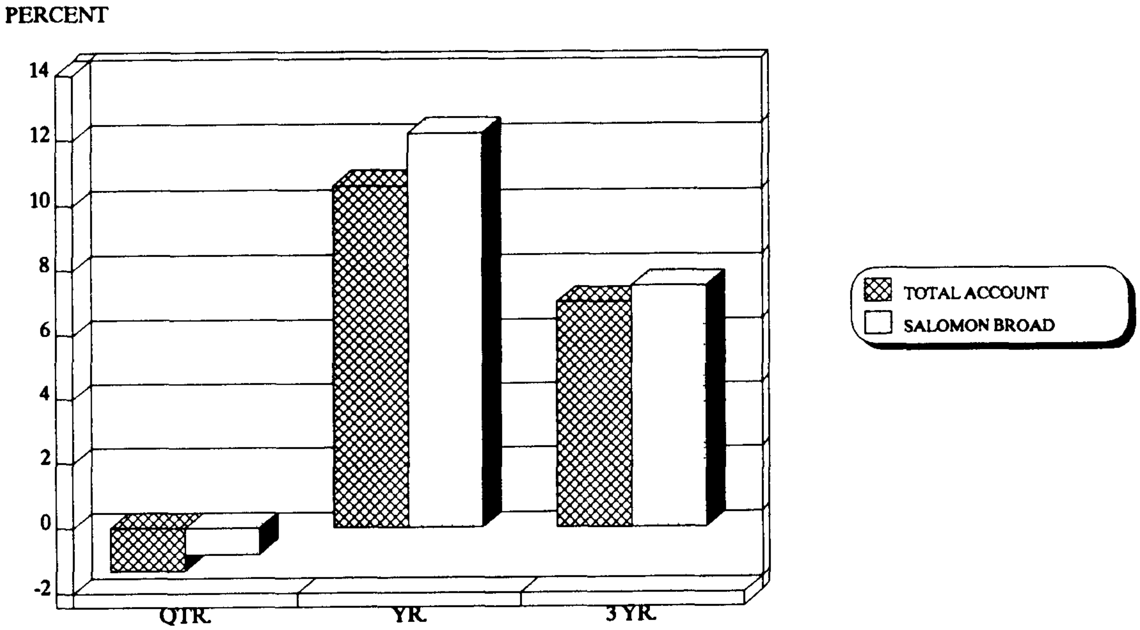
Bond Market Account

Investment Objective
The investment objective of the Bond Market Account is to earn a high rate of return by investing in fixed income securities.

Asset Mix
The Bond Market Account invests primarily in high-quality, government and corporate bonds that have intermediate to long-term maturities, usually 3 to 20 years.

Investment Management
The entire Account is managed by the same group of active external bond managers utilized by the Basic Retirement Funds. (See page 8 for performance results for these managers.)

Market Value
On March 31, 1990 the market value of the Bond Market Account was $6 million.



Period Ending 3/31/90

	Qtr.	Yr.	3 Yrs. Annualized	Since Inception Annualized*
Total Account	-1.3%	10.6%	7.0%	8.3%
Salomon Broad	-0.8	12.2	7.5	7.8

* The Bond Market Account was added to the Supplemental Fund in July 1986.

SUPPLEMENTAL INVESTMENT FUND

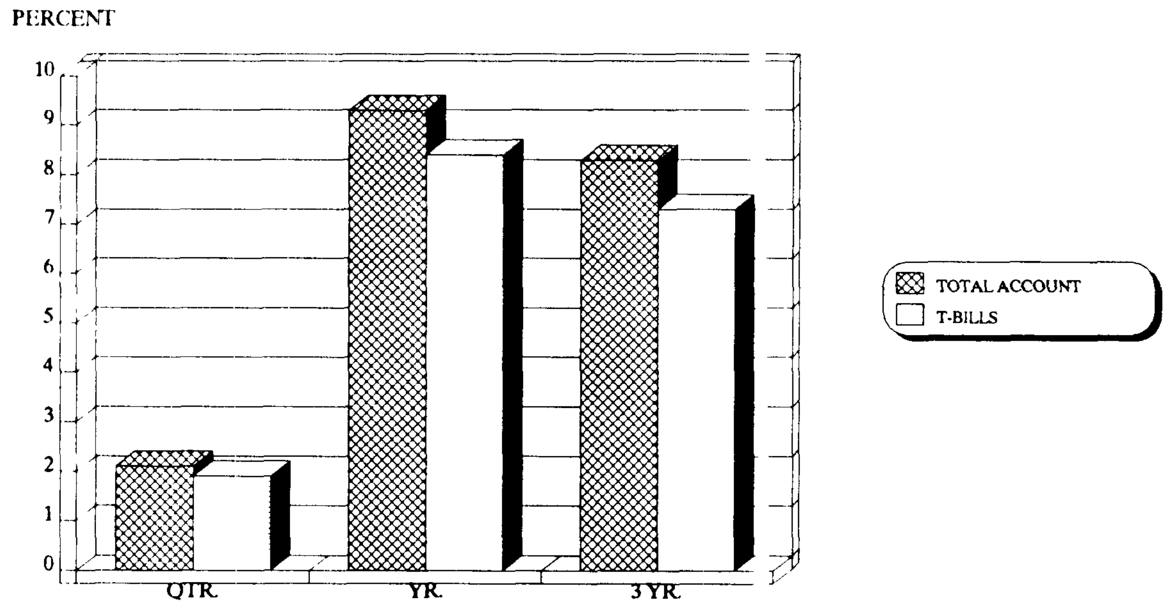
Money Market Account

Investment Objective
The investment objective of the Money Market Account is to purchase short-term, liquid fixed income investments that pay interest at rates competitive with those available in the money markets.

Assset Mix
The Money Market Account is invested entirely in high quality short-term investments such as U.S. Treasury Bills, bank certificates of deposit, repurchase agreements, and high grade commercial paper. The average maturity of these investments is 30 to 60 days.

Investment Management
The Money Market Account is managed solely by State Street Bank and Trust Company. State Street manages a major portion of the Board's cash reserves.

Market Value
On March 31, 1990 the market value of the Money Market Account was $79 million.



Period Ending 3/31/90

	Qtr.	Yr.	3 Yrs. Annualized	Since Inception Annualized*
Total Account	2.1%	9.3%	8.3%	7.9%
91 Day T-Bills	1.9	8.4	7.3	7.0

* The Money Market Account was added to the Supplemental Fund in July 1986.

SUPPLEMENTAL INVESTMENT FUND

Guaranteed Return Account

Investment Objectives
The investment objectives of the Guaranteed Return Account are to protect investors from any loss of their original investment and to provide a fixed rate of return over a three year period.

Asset Mix
The Guaranteed Return Account is invested in guaranteed investment contracts (GIC's) offered by major U.S. insurance companies and banks.

Investment Management
Annually, the Board accepts bids from banks and insurance companies that meet the financial quality criteria defined by State statute. Generally, the insurance company or bank offering the highest three year GIC interest rate is awarded the contract. That interest rate is then offered to participants who make contributions to the Guaranteed Return Account over the following twelve months.

Market Value
On March 31, 1990 the market value of the Guaranteed Return Account was $58 million.

Contract Period	Annual Effective Interest Rate	Manager
Nov. 1, 1987 - Oct. 31, 1990	8.45%	Principal Mutual Life
Nov. 1, 1988 - Oct. 31, 1991	9.01%	Mutual of America
Nov. 1, 1989 - Oct. 31, 1992	8.40%	John Hancock

PERMANENT SCHOOL FUND

Investment Objectives
The SBI invests the Permanent School Fund to produce a high, consistent level of income that will assist in offsetting state expenditures on school aids.

The Permanent School fund's investment objectives are influenced by the restrictive legal provisions under which its investments must be managed. These provisions require that the Permanent School Fund's principal remain inviolate. Further, any net realized equity and fixed income capital gains must be added to principal. Moreover, if the Permanent School Fund realizes net capital losses, these losses must be offset against interest and dividend income before such income can be distributed. Finally, all interest and dividend income must be distributed in the year in which it is earned.

These legal provisions limit the investment time horizon over which the Permanent School Fund is managed. Long-run growth in its assets is difficult to achieve without seriously reducing current spendable income and exposing the spendable income stream to unacceptable volatility. The SBI, therefore, invests the Permanent School Fund's assets to produce the maximum amount of current income, within the constraint of maintaining adequate portfolio quality.

Asset Mix
The asset mix of the Permanent School Fund was essentially unchanged during the first quarter. The Permanent School fund continues to hold only fixed income securities. Under current legal limitations, common stocks are not appropriate vehicles for the Fund.

	Target	Actual
Bonds	95.0%	97.6%
Unallocated Cash	5.0	2.4
Total	100.0%	100.0%

Investment Management
The entire fund is managed by the SBI investment staff.

Asset Growth
The market value of the Permanent School Fund's assets decreased 5.9% during the first quarter. The decrease in assets was due to withdrawals of $14.5 million and a decline in bond prices.

Asset Growth During First Quarter 1990 (Millions)

Beginning Value	$384.5
Net Contributions	-14.5
Investment Return	-8.3
Ending Value	$361.7

Bond Segment Performance
The composition of the Permanent School Fund's bond portfolio was essentially unchanged during the quarter. The bond portfolio is structured with a laddered distribution of maturities to minimize the Fund's exposure to re-investment rate risk. At the quarter's-end, the portfolio had a current yield of 9.16%, an average life of 7.04 years, and a AAA quality rating. The portfolio remains concentrated in Treasury and Agency issues and has a significant mortgage component as well.

Bond Portfolio Statistics 3/31/90

Value at Market	$345,024,897
Value at Cost	341,957,259
Average Coupon	9.02%
Current Yield	9.16
Yield to Maturity	9.17
Current Yield at Cost	9.25
Time to Maturity	14.85 Years
Average Duration	7.04 Years
Average Quality Rating	AAA
Number of Issues	132

STATE CASH ACCOUNTS

Description
State Cash Accounts represent the cash balances in more than 200 separate ccounts that flow through the Minnesota State Treasury. These accounts range in size from $5,000 to over $400 million.

Most accounts are invested by SBI staff through two short-term pooled funds:

- **Trust Fund Pool** contains the cash balances of retirement-related accounts managed internally and cash balances in the Permanent School Fund.

- **Treasurer's Cash Pool** contains the cash balances of special or dedicated accounts necessary for the operation of certain State agencies and the balance of the Invested Treasurer's Cash.

In addition, each State of Minnesota bond sale requires two additional pools; one for bond proceeds and one for the debt reserve transfer.

Because of special legal restrictions, a small number of cash accounts cannot be commingled. These accounts are invested separately.

Investment Objectives

- **Safety of Principal.** To preserve capital.

- **Competitive Rate of Return.** To provide a high level of current income.

- **Liquidity.** To meet cash needs without the forced sale of securities at a loss.

Asset Mix
The SBI maximizes current income while preserving capital by investing all cash accounts in high quality, liquid short term investments. These include U.S. Treasury and Agency issues, repurchase agreements, bankers acceptances, commercial paper, and certificates of deposit.

Investment Management
All state cash accounts are managed by the SBI investment staff. As noted above, most of the assets of the cash accounts are invested through two large commingled investment pools.

Performance
Both the Trust Fund Pool and the Treasurer's Cash Pool outperformed their target for the latest quarter and year.

	Period Ending 3/31/90 Market Value (Millions)	Qtr.	Yr.
Treasurer's Cash Pool	$2,191	2.1%	9.2%
Trust Fund Cash Pool	314	2.1	9.0
91-Day T-Bills		1.9	8.4

Tab B

PORTFOLIO STATISTICS

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT
COMPOSITION OF STATE INVESTMENT PORTFOLIOS BY TYPE OF INVESTMENT
MARKET VALUE MARCH 31, 1990
(in 000's)

	CASH AND SHORT TERM SECURITIES	BONDS INTERNAL	BONDS EXTERNAL	STOCKS INTERNAL	STOCKS EXTERNAL	ALTERNATIVE ASSETS	TOTAL
BASIC RETIREMENT FUNDS:							
TEACHERS RETIREMENT FUND	$ 14,890	$ -0-	$ 819,971	$ -0-	$1,929,042	$362,908	$ 3,126,811
	0.48%		26.22%		61.69%	11.61%	100%
PUBLIC EMPLOYEES RETIRE. FUND	18,766	-0-	401,425	-0-	941,743	177,242	1,539,176
	1.22%		26.08%		61.18%	11.52%	100%
STATE EMPLOYEES RETIRE. FUND	16,691	-0-	351,505	-0-	824,631	155,200	1,348,027
	1.24%		26.08%		61.17%	11.51%	100%
PUBLIC EMP. POLICE & FIRE FUND	6,945	-0-	148,556	-0-	348,513	65,593	569,607
	1.22%		26.08%		61.18%	11.52%	100%
HIGHWAY PATROL RETIRE. FUND	1,812	-0-	26,168	-0-	61,391	11,554	100,925
	1.80%		25.93%		60.83%	11.44%	100%
JUDGES RETIREMENT FUND	87	-0-	1,652	-0-	3,160	730	5,629
	1.55%		29.35%		56.14%	12.96%	100%
PUBLIC EMP. P.F. CONSOLIDATED	946	-0-	18,016	-0-	20,681	4,570	44,213
	2.14%		40.75%		46.77%	10.34%	100%
CORRECTIONAL EMPLOYEES RETIREMENT	518	-0-	17,076	-0-	40,060	7,539	65,193
	.80%		26.19%		61.45%	11.56%	100%
POST RETIREMENT FUND	257,185	4,301,309	-0-	514,567	-0-	-0-	5,073,061
	5.07%	84.79%		10.14%			100%
MINNESOTA SUPPLEMENTAL FUNDS:							
INCOME SHARE ACCOUNT	24,417	76,700	-0-	-0-	136,612	-0-	237,729
	10.27%	32.26%			57.47%		100%
GROWTH SHARE ACCOUNT	281	-0-	-0-	-0-	70,576	-0-	70,857
	.40%				99.60%		100%
MONEY MARKET ACCOUNT	79,499	-0-	-0-	-0-	-0-	-0-	79,499
	100%						100%
COMMON STOCK INDEX ACCOUNT	-0-	-0-	-0-	-0-	8,272	-0-	8,272
					100%		100%
BOND MARKET ACCOUNT	-0-	-0-	6,035	-0-	-0-	-0-	6,035
			100%				100%
GUARANTEED RETURN ACCOUNT	-0-	-0-	58,346	-0-	-0-	-0-	58,346
			100%				100%

	CASH AND SHORT TERM SECURITIES	BONDS INTERNAL	BONDS EXTERNAL	STOCKS INTERNAL	STOCKS EXTERNAL	ALTERNATIVE ASSETS	TOTAL
TOTAL RETIREMENT FUNDS	$ 422,037	$4,378,009	$1,848,750	$514,567	$ 4,384,681	$785,336	$12,333,380
	3.42%	35.50%	14.99%	4.17%	35.55%	6.37%	100%
PERMANENT SCHOOL FUND	8,545	353,127	-0-	-0-	-0-	-0-	361,672
	2.36%	97.64%					100%
TREASURERS CASH	2,191,172	-0-	-0-	-0-	-0-	-0-	2,191,172
	100%						100%
HOUSING FINANCE AGENCY	179,758	-0-	-0-	-0-	-0-	-0-	179,758
	100%						100%
MINNESOTA DEBT SERVICE FUND	25,117	-0-	-0-	-0-	-0-	-0-	25,117
	100%						100%
MISCELLANEOUS ACCOUNTS	207,669	-0-	-0-	-0-	-0-	-0-	207,669
	100%						100%
GRAND TOTAL	$3,034,298	$4,731,136	$1,848,750	$514,567	$4,384,681	$785,336	$15,298,768
	19.83%	30.93%	12.09	3.36%	28.66%	5.13%	100%

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT
NET CASH FLOW AVAILABLE FOR INVESTMENT

For period of
January 1, 1990 - March 31, 1990

Teachers Retirement Fund	$ -0-
Public Employees Retirement Fund	10,000,000.00
State Employees Retirement Fund	8,557,000.00
Public Employees Police & Fire	7,000,000.00
Highway Patrol Retirement Fund	954,000.00
Judges Retirement Fund	(1,256,000.00)
Public Emp. P & F Consolidated	29,548,561.67
Correctional Employees Retirement Fund	121,000.00
Post Retirement Fund	(10,743,609.73)
Supplemental Retirement Fund - Income	2,051,680.92
Supplemental Retirement Fund - Growth	(2,243,391.28)
Supplemental Retirement Fund - Money Market	(987,202.58)
Supplemental Retirement Fund - Index	1,841,140.38
Supplemental Retirement Fund - Bond Mkt.	791,782.89
Supplemental Retirement Fund - Guaranteed	(67,064.83)
Total Retirement Funds Net Cash Flow	$ 45,567,897.44
Permanent School Fund	(14,460,355.58)
Total Net Cash Flow	$ 31,107,541.86

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT

TRANSACTION AND ASSET SUMMARY
RETIREMENT FUNDS

	Net Transactions				Asset Summary (at market)			
	Bonds (000,000)	Stocks (000,000)	Total	Cash Flow	Short-term % of Fund	Bonds % of Fund	Equity % of Fund	Total (000,000) (at market)
September 1986	14	(67)	(53)	(48)	4.9	47.0	48.1	8490
October	4	(117)	(113)	10	6.2	46.5	47.3	8724
November	(17)	(3)	(20)	40	6.8	46.0	47.2	8864
December	(51)	44	(7)	12	7.0	46.0	47.0	8772
January 1987	34	21	42	15	6.2	44.4	49.4	9283
February	120	(9)	111	50	5.4	44.4	50.2	9576
March	76	(15)	61	18	4.9	44.5	50.6	9614
April	100	(7)	93	4	4.1	45.0	50.9	9383
May	3	(136)	(133)	33	5.9	44.6	49.5	9403
June	(42)	(22)	(64)	141	7.8	42.6	49.6	9706
July	283	(119)	164	52	6.4	44.9	48.7	10028
August	181	(14)	167	40	5.2	44.7	50.1	10020
September	50	10	60	59	5.3	44.5	50.2	9850
October	(12)	(37)	(49)	20	6.5	50.1	43.4	9077
November	9	(10)	(1)	69	7.4	51.1	41.5	8890
December	(3)	34	31	0	6.8	50.1	43.1	9180
January 1988	(5)	118	113	57	5.9	50.0	44.1	9572
February	102	1	103	47	5.2	49.8	45.0	9841
March	25	(10)	15	6	5.2	49.8	45.0	9686
April	(9)	16	7	11	5.2	49.1	45.7	9667
May	(2)	(2)	(4)	41	5.7	48.3	46.0	9633
June	(3)	18	15	75	6.1	47.5	46.4	10045
July	91	(5)	86	56	5.8	48.1	46.1	10003
August	(3)	14	11	55	6.3	48.2	45.5	9920
September	(7)	(3)	(10)	19	6.4	48.0	45.6	10208
October	(7)	0	(7)	(27)	6.2	48.2	45.6	10329
November	129	1	130	88	5.8	48.6	45.6	10217
December	(1)	2	1	83	6.5	47.8	45.7	10414

	Net Transactions				Asset Summary (at market)			
	Bonds (000,000)	Stocks (000,000)	Total	Cash Flow	Short-term % of Fund	Bonds % of Fund	Equity % of Fund	Total (000,000) (at market)
January 1989	88	(10)	78	3	5.6	47.7	46.7	10760
February	60	18	78	38	5.3	47.9	46.8	10633
March	150	5	155	12	3.9	48.8	47.3	10783
April	(16)	188	172	16	2.3	48.1	49.6	11113
May	(2)	4	2	43	2.6	47.6	49.8	11461
June	119	10	129	119	2.5	49.2	48.3	11768
July	121	(100)	21	44	2.6	49.0	48.4	12287
August	275	(205)	70	51	2.4	49.8	47.8	12311
September	47	11	58	32	2.2	50.2	47.6	12344
October	113	(154)	(41)	8	2.6	52.5	44.9	12342
November	45	0	45	78	2.8	52.1	45.1	12494
December	14	6	20	24	2.8	51.8	45.4	12581
January 1990	(37)	6	(31)	85	3.9	52.0	44.1	12126
February	(12)	115	103	48	3.4	51.1	45.5	12232
March	(3)	7	4	8	3.4	50.5	46.1	12334

Tab C

EXECUTIVE DIRECTOR
HOWARD J BICKER

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT
Room 105, MEA Building
55 Sherburne Avenue
St Paul, MN 55155
Tel (612) 296-3328
FAX (612) 296-9572

May 25, 1990

TO: Members, State Board of Investment
Members, Investment Advisory Council

FROM: Howard Bicker

SUBJECT: Executive Director's Administrative Report

1) Budget Report

A budget-to-actual report for the SBI's FY 1990 administrative budget is included as Attachment A. It covers expenditures through April 30, 1990.

2) Travel Report

A summary of SBI travel expenditures for February 16-May 15, 1990 is included as Attachment B.

3) Legislative Report

a) SBI Administrative Budget

HF 2419, the Omnibus State Departments Appropriations Bill, provides that the SBI's general fund administrative budget will be reduced by $34,000, a cut of approximately 2%. The reduction is effective for the remainder of this biennium ending June 30, 1991.

HF 2419 also contains language to bill back the entire SBI administrative budget to the many funds and accounts invested by the SBI. Currently, about 80 percent of the SBI's administrative budget is billed back to the retirement systems. The amendment changes the billing procedure to include all assets managed by the SBI.

b) <u>Transfer to the SBI of the Workers Compensation Assigned Risk Plan Assets</u> (SF 2412)

SF 2412 transfers investment management of the assets of the workers compensation assigned risk plan from the Department of Commerce to the SBI. The transfer will be effective May 1, 1991.

c) <u>Environmental Trust Fund</u>

HF 2651, the Omnibus Bonding Bill, calls for a constitutional guarantee for funding the Environmental Trust Fund. If approved in the November 1990 election, the constitutional amendment would dedicate 40 percent of net lottery proceeds to the trust fund for the next 10 years.

HF 2419 and HF 2817 amend sections of existing law specifying how many dollars may be expended from the environmental trust fund during the fund's early years. The amendments allow expenditure of a portion of the fund's principal beginning in fiscal year 1990 to correspond with the start-up of funding from lottery proceeds.

These provisions affect the total amount of assets that will be invested in the trust fund by the SBI but do not impact the Board's investment authority with respect to the Environmental Trust Fund.

d) <u>Pension Legislation</u>

HF 2103, the Omnibus Pension Bill, contains several sections of interest to the SBI:

- Article 3 specifies that the Supplemental Investment Fund, which is invested by the SBI, will be the third investment option for participants of the College Supplemental Retirement Plan and the new Individual Retirement Account Plan (IRAP) for newly hired faculty of the state university and community college systems. Article 3 also calls for transferring the administration of the College Supplemental Plan and the IRAP from Teachers Retirement Association to the two higher education systems. These provisions are effective July 1, 1991.

- Article 8 expands the membership of the Ambulance Service Plan to include county attorneys and locally elected officials and renames the plan the Public Employees Defined Contribution Plan. Participants in the plan invest retirement moneys in the Supplemental Investment Fund. New participants will be added beginning July 1, 1990.

- o Article 9 specifies that interest on late transfers to the Post Fund will be paid at a rate equal to the 8.5 percent actuarial assumption of the Basic Funds. The change simplifies the calculation of interest charges and addresses concerns expressed by the legislative auditor.

- o Article 10 amends the law governing the statewide deferred compensation plan so that SBI approval of rules relating to investment options in the plan does not include rules related to marketing. The director of the Minnesota State Retirement System (MSRS) who administers the plan will promulgate marketing rules.

4) Program Evaluation by the Legislative Auditor

The Legislative Audit Commission has asked Program Evaluation Division of the Office of the Legislative Auditor (OLA) to conduct a study of the SBI. A short background paper prepared by the OLA is included as Attachment C.

While the scope of the evaluation has not been determined several potential topics are being discussed:

- o Utilization and performance of external managers

- o Benefit increase mechanism of the Post Retirement Fund

- o Review of state assets not managed by the SBI at the present time

I will keep Board members and their deputies informed about the progress of the study.

ATTACHMENT A

STATE BOARD OF INVESTMENT
FISCAL YEAR 1990 ADMINISTRATIVE BUDGET REPORT
GENERAL FUND APPROPRIATION
FISCAL YEAR TO-DATE THROUGH APRIL 30,1990

ITEM	FISCAL YEAR 1990 BUDGET	FISCAL YEAR 1990 EXPENDITURES
PERSONAL SERVICES		
CLASSIFIED EMPLOYEES	$ 263,080	$ 180,222
UNCLASSIFIED EMPLOYEES	1,094,000	851,752
PART-TIME EMPLOYEES	0	605
SEVERENCE PAY	0	16,729
MISCELLANEOUS PAYROLL	0	333
SUBTOTAL	**$ 1,357,080**	**$ 1,049,641**
EXPENSES & CONTRACTUAL SERVICES		
RENTS & LEASES	92,000	78,116
REPAIRS/ALTERATIONS/MAINTENANCE	8,000	6,672
PRINTING & BINDING	16,500	13,891
PROFESSIONAL/TECHNICAL SERVICES	10,000	5,005
DATA PROCESSING & SYSTEM SERVIC	162,000	121,500
PURCHASED SERVICES	20,000	23,845
SUBTOTAL	**$ 308,500**	**$ 249,029**
MISCELLANEOUS OPERATING EXPENSES		
COMMUNICATIONS	18,000	17,826
TRAVEL, IN-STATE	1,000	2,040
TRAVEL, OUT-STATE	34,000	24,867
FEES & OTHER FIXED CHARGES	7,000	3,969
SUBTOTAL	**$ 60,000**	**$ 48,702**
SUPPLIES/MATERIALS/PARTS	**15,000**	**16,873**
CAPITAL EQUIPMENT	**17,000**	**5,475**
TOTAL GENERAL FUND	**$ 1,757,580**	**$ 1,369,720**

ATTACHMENT B

STATE BOARD OF INVESTMENT

Travel Summary by Date
February 13, 1990 - May 15, 1990

Purpose	Name(s)	Destination and Date	Total Cost
Manager Monitoring **Venture Capital Manager** KKR - RJR Review	J. Griebenow	New York 2/13-14	$ 803.24
Board Member Travel National Association of State Treasurers	M. McGrath J. Manahan	Washington DC 2/28-3/4	$1,475.57
Miscellaneous Senate Finance Hearings, Council of Institional Investors	H. Bicker	Washington DC 3/20-21	$ 943.03
Manager Monitoring Fidelity, Robinson Humphrey, Vestek	H. Bicker	Atlanta 3/25-27	$ 180.64
New Manager Searches **Real Estate, Venture Capital** LaSalle, Zell interviews	J. Griebenow	Chicago 3/27/90	$ 574.00
Manager Monitoring **Equity Managers** Concord, Rosenberg **New Manager Search** **Short Selling Research** Negative Beta, Feshbach Bros. Southgate Partners, Wood Creek L.P.	D. Gorence M. Menssen	San Francisco 4/4-6	$2,629.94
New Manager Search **Real Estate** Copley interview	J. Griebenow	Boston 4/5-6	$ 790.86
Staff Conference "Pension in the Ninties" sponsored by Bear Stearns	H. Bicker	San Francisco 4/17-20	$1,556.65
Staff Conference IDS Annual Client Conference	H. Bicker	Washington DC 5/15-18	$1,277.28

ATTACHMENT C

OFFICE OF THE LEGISLATIVE AUDITOR

STATE BOARD OF INVESTMENT

Background Paper

May 3, 1990

BACKGROUND

The Minnesota State Board of Investment (SBI) is established by the state constitution to provide for the administration and investment of all state funds and pension funds. The board is composed of the five constitutional officers and is assisted by a staff of 25 and an Investment Advisory Council.

SBI is responsible for investing almost $15 billion in state and pension fund assets. Table 1 shows the breakdown of the funds under management. Approximately 60 percent of assets, consisting primarily of the post retirement investment fund, are managed directly by SBI staff. SBI staff also manage the supplemental investment fund which includes the state's deferred compensation plan, unclassified employees retirement funds, and the funds of other local police and firefighter plans. In addition, SBI manages the state's various cash accounts, including the Invested Treasurer's Cash Fund. The remainder of funds are invested for the state by external money managers. SBI currently contracts with 11 active equity managers, one passive equity manager, five active bond managers, and two semi-passive bond managers. SBI staff and an investment consultant evaluate the external managers performance through a series of benchmark portfolios and indexes.

Table 1: State Board of Investment Assets

		Market Value June 30, 1989
Basic Retirement Funds		$6 3 billion
Teachers Retirement Fund	$2,887 million	
Public Employees Retirement Fund	1,484 million	
State Employees Retirement Fund	1,261 million	
Public Employees Police & Fire Fund	526 million	
Highway Patrol Retirement Fund	95 million	
Correctional Employees Fund	61 million	
Police and Fire Consolidation Fund	11 million	
Judges Retirement Fund	3 million	
Post Retirement Investment Fund		$5.0 billion
Supplemental Investment Fund		$0.4 billion
Income Share Account	$222 million	
Growth Share Account	73 million	
Common Stock Index Account	5 million	
Bond Market Account	3 million	
Money Market Account	74 million	
Guaranteed Return Account	49 million	
State Cash Accounts		$2.8 billion
Permanent School Trust Fund		$0.4 billion
Total Assets		$14.9 billion

The investment goals vary for each of the funds that SBI manages. The board, assisted by SBI staff and the Investment Advisory Council periodically reviews the investment policy for each of the major funds to ensure it is in line with the funds' goals SBI reports annually to the legislature on the performance of the external fund managers.

In the late 1970's and early 1980's many legislators, retirees, and others expressed concern about the poor rate of return SBI was earning on the funds it invested. The Office of the Legislative Auditor, the State Auditor, Peat Marwick Main and Co., and legislative committees studied SBI's investment performance and governance. As a result, in the early 1980's there were numerous statutory changes in SBI's authorized investments and in its approach to fund management. The board switched all of the Basic Retirement Funds and most of the Supplemental Investment Funds to outside fund managers.

POSSIBLE EVALUATION ISSUES

1. How has SBI's investment performance been since the changes of the early 1980's? How

does it compare to similar funds managed by others? Has the strategy of hiring external money managers for a portion of state funds yielded the desired results?

2. How do the investment policies on SBI managed funds compare to other similar funds? In particular, how does the investment policy for the Post Retirement Fund compare to similar funds in other states. Would a different investment policy yield greater returns and benefit increases for retirees?

3. Are there other state controlled funds that should be managed by SBI?

DISCUSSION

As the result of a recent study of the investment management of the $237 million workers' compensation assigned risk plan portfolio questions have been raised about the performance of SBI managed portfolios. Although the SBI staff report periodically to the board on investment performance, there have been no recent studies by outside parties.

Another policy issue potentially before the 1991 Legislature is the appropriateness of the current benefit adjustment formula for the Post Retirement Fund. The fund's management is currently dictated by the formula. The current formula results in higher benefit increases when inflation is low and lower benefit increases when inflation is higher. As a result, there is concern about benefit adequacy if inflation is higher than recent levels. Some maintain that a different investment policy for the fund would earn greater returns for retirees and protect benefit increases during inflationary periods.

Although measuring investment returns is technically difficult, the evaluation issues are straightforward ones. We believe that an evaluation of SBI is feasible and that it may be timely. We anticipate that it would be a medium sized study.

Tab D

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT
Room 105, MEA Building
55 Sherburne Avenue
St Paul, MN 55155
Tel (612) 296-3328
FAX (612) 296-9572

May 25, 1990

TO: Members, State Board of Investment
Members, Investment Advisory Council

FROM: State Treasurer Michael McGrath, Chair

SUBJECT: SBI Administrative Committee Actions

The SBI Administrative Committee will meet on May 29, 1990 to consider:

- o FY 91 Executive Director's Work Plan
- o FY 91 Administrative Budget Plan
- o Board Member Travel Allocation Policy
- o Continuing Fiduciary Education Plan
- o FY 92-93 Preliminary Administrative Budget Request

The Committee will prepare a full report and present its recommendation to the Board at its June 6, 1990 meeting.

Tab E

EXECUTIVE DIRECTOR
HOWARD J BICKER

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT

Room 105, MEA Building
55 Sherburne Avenue
St Paul, MN 55155
Tel (612) 296-3328
FAX (612) 296-9572

May 25, 1990

TO: Members, State Board of Investment
Members, Investment Advisory Council

FROM: Task Force on Manager Retention
Judy Mares, Chair
Jim Eckmann, Dayton-Hudson
Jim Hacking, PERA
Debbie Veverka, Honeywell
Jan Yeomans, 3M

SUBJECT: Final Report of the Task Force

At the Board's request, the IAC formed an ad hoc Task Force to examine a variety of issues relating to active managers. An interim report was presented to the Board at its January 10, 1990 meeting. This document re-caps that report and summarizes all recommendations of the Task Force.

The Task Force examined four major issues:

Issue #1: Should the SBI utilize active managers?

Decision: Yes. The Task Force believes that active management can add value over the long term. However, given the large size of the Basic Funds, the Task Force believes that the assets committed to active management should be constrained. (This issue was discussed in greater depth in the Task Force report presented at the January 10, 1990 SBI meeting. In addition, active/passive strategies were discussed in "Basic Retirement Funds Policy Papers-Part III.")

Issue #2:	<u>Should the SBI use customized benchmarks</u>?
Decision:	<u>Yes</u>. The Task Force believes that a customized benchmark is a better representation of a manager's specialized investment style/approach than a broad market index. Therefore, the Task Force endorses the current policy to use benchmarks as the standard against which individual managers are measured. (The construction and application of benchmarks has been discussed in the following position papers: "Normal Portfolios Concepts and Applications," March 1985; "Basic Retirement Funds Policy Papers-Part III," May 1987; and the "Manager Continuation Policy," March 1988.)
Issue #3:	<u>Should the SBI reduce the existing style bias or "misfit" in the stock segment of the Basic Funds</u>?
Decision:	<u>Yes</u>. The Task Force is comfortable with the use of specialized active managers provided the manager group covers the entire market adequately (i.e., the aggregate benchmarks approximate the broad market). The Task Force observes that the SBI has not provided this coverage with its existing active stock manager program. The active manager group has shown a persistent over-exposure to small, growth oriented stocks during a prolonged period when this segment of the market has underperformed significantly. This is the primary reason why the manager's benchmarks, individually and in aggregate, have underperformed the broad market. The Task Force believes that unintended misfit is counterproductive and should be minimized as efficiently as possible. The Task Force believes the characteristics of the index fund should be modified or "tilted" to compensate for misfit. (More information on this proposal is included in Attachment A.)
Issue #4:	<u>Should the SBI's Manager Continuation Policy be modified</u>?
Decision:	<u>Yes</u>. The Task Force endorses the underlying structure of the qualitative/quantitative evaluation framework in the Manager Continuation Policy. However, the Task Force believes that the focus on cumulative performance may allow recent deterioration to be overlooked. Therefore, the Task Force endorses a change to

the Manager Continuation Policy that would trigger an in-depth analysis at various intervals. (Specific changes to the written policy are shown in Attachment B).

RECOMMENDATIONS:

Based on the findings and conclusions noted above, the Task Force recommends that the SBI take the following actions:

1) The Task Force recommends that the SBI re-affirm its policy that up to 50% of the stock and bond segments in the Basic Funds be managed actively.

   (Note: At its meeting on January 10, 1990, the SBI re-affirmed the use of active and passive management strategies. It did not re-affirm the 50% policy.)

2) The Task Force recommends that the SBI re-affirm its policy that customized benchmarks are used as the standard against which individual active managers are measured.

3) The Task Force recommends that the SBI authorize the executive director, with assistance from SBI legal counsel, to negotiate and execute any necessary contract amendments with Wilshire Associates to construct and maintain a custom tilted index fund which will offset the style bias or misfit in the stock segment of the Basic Retirement Funds.

   Further, the Task Force recommends that the transition from the current index to the tilted index should be phased-in on a quarterly basis over the next two years or until the dollar impact of the historical misfit has been neutralized, whichever comes first.

4) The Task Force recommends that the SBI re-affirm the qualitative/quantitative approach to evaluation in the Manager Continuation Policy. Specifically:

   o The qualitative guidelines remain appropriate and should not be changed.

   o The quantitative guidelines should be modified somewhat. The current "probation line" should be eliminated. In order to highlight recent trends, an in-depth analysis should be conducted if a manager's performance lags its benchmark over the latest five year period. The analysis should result in a recommendation from the IAC to continue or terminate the manager. This action will constitute a vote of "confidence" or "no-confidence" in the manager's ability to add value in the future.

   o Each active manager should receive an in-depth review on both qualitative and quantitative factors once every three years regardless of its performance relative to its benchmark. The analysis should be reviewed by the IAC.

ATTACHMENT A

MISFIT CONTROL USING A CUSTOM TILTED INDEX FUND

WHAT IS MISFIT?

"Misfit" is the difference between the aggregate benchmarks of the active managers and the asset class target, i.e. the Wilshire 5000.

The SBI's active stock manager group has shown a significant misfit versus the market in three major areas:

- o persistent over-exposure to small capitalization stocks
- o persistent over-exposure to growth oriented stocks
- o persistent under-exposure to yield oriented stocks

The active manager group has held the bias toward small, growth oriented stocks during a prolonged period when this segment has underperformed significantly. This is the primary reason why the manager's benchmarks, individually and in aggregate, have underperformed the broad market (see Figures 1,2,3 and 4).

In the future, the aggregate benchmarks of the current active manager group can be expected to vary up to 3.2 percentage points above or below the Wilshire 5000 on an annual basis. This variance can easily overwhelm any value added through active management.

WHAT COURSES OF ACTION ARE AVAILABLE?

The Task Force believes that the Board can take one of three basic courses of action with respect to the existing misfit:

- o It can make an explicit choice to leave the misfit in place indefinitely. This amounts to a decision, or "bet", that small growth stocks will outperform the market in the future.
- o It can take action to reduce the misfit using one or more of the following strategies: reallocating assets among existing managers, adding new managers, establishing a completeness fund, or modifying the characteristics of the current index fund.
- o It can leave the current bias toward small growth stocks in place for the time being and then take action to reduce the misfit at some point in the future.

The Task Force believes that unintended misfit is counter-productive over the long term and may mask the value added by active management. Therefore, the Task Force recommends that the SBI reduce its exposure to misfit risk in a cost efficient manner.

HOW SHOULD THE MISFIT BE CONTROLLED?

The Task Force examined several alternatives to control misfit risk:

- Reallocating Assets Among Existing Managers

  In varying degrees, all of the SBI active managers have a bias toward the small-growth area of the market. As a result, reallocating assets among the existing managers will do little to offset the existing bias (See Figure 2).

- Adding New Active Managers

  The universe of available active managers is oriented toward the small-growth area of the market (see Figure 5). Efforts to offset the existing bias by adding new active managers will be relatively ineffective. In 1989, the SBI attempted to reduce its growth bias by adding four managers with a value orientation (Concord, Franklin, Rosenberg, Sasco). While the new managers did impact the characteristics of stock segment, they did not reduce the overall misfit significantly.

- Adding a Large-Value Index Portfolio

  The SBI could attempt to counter balance the existing misfit by adding a passive portfolio that is indexed to large-value stocks. However, since the existing misfit is not solely a small-growth bias, this strategy would not reduce misfit dramatically. Further, the performance of this portfolio would vary widely on a year-to-year basis relative to the Wilshire 5000. (See Figures 6 and 7.)

- Establishing a Completeness Fund

  A completeness fund is a portfolio specifically designed to compensate for misfit. It "completes" the active manager group by investing in those areas of the market that are not covered by the aggregate benchmarks of the active managers. A completeness fund could be managed passively or actively but is constrained by the amount of assets devoted to it. A $200-250 million completeness fund would reduce misfit somewhat. However, like the Large-Value Index, the performance of a completeness fund of this size would vary widely on a year-to-year basis. (See Figures 6 and 7. For a more complete discussion, see the staff position paper entitled "Completeness Fund," February 1988).

- Tilting the Characteristics of the Index Fund

  The index fund represents approximately 60% of the entire common stock segment of the Basic Funds. Because of its large size, the index fund can be a powerful lever in managing the characteristics of the entire stock segment. With relatively minor changes in its holdings, the index fund could be modified or "tilted" to compensate for the existing misfit in the active manager group (see Figure 8). These changes would reduce the misfit of the Basic Funds stock segment by more than one-half (see Figure 7).

Due to the changes in its composition, the returns of the tilted index will not track the Wilshire 5000 as closely as the current index fund. However, the combination of active manager benchmarks and the titled index fund should vary no more than 60 basis points above or below the Wilshire 5000 on an annualized basis. This is very close to the tracking error expectation for the current index fund (see Figure 9).

The Task Force believes that the SBI should utilize a tilted index fund to control misfit in the stock segment of the Basic Funds. It is clearly the most efficient method among the alternatives available to the SBI at this time.

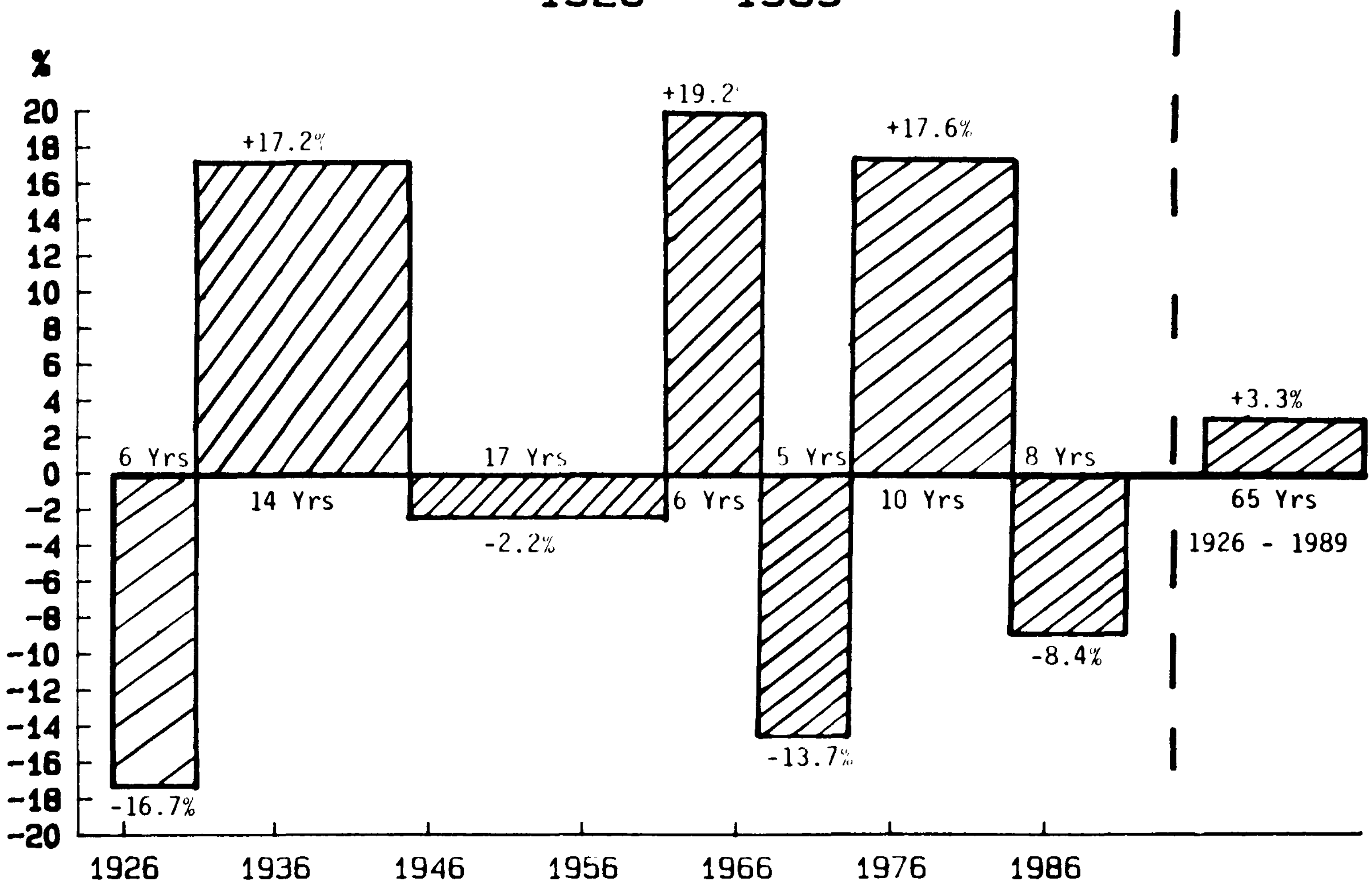
WHEN SHOULD THE TRANSITION OCCUR?

The Task Force acknowledges that misfit has reduced investment returns in the Basic Funds. From January 1984-December 1989, the cumulative dollar impact of misfit in the stock segment was -$65 million. Strong relative performance in the small growth area of the market in the future could reverse this impact. However, the Task Force does not believe it is prudent to delay implementation of misfit control indefinately.

Therefore, the Task Force recommends that the transition to a tilted index fund be phased-in on a quarterly basis over a period not exceeding two years. If the cumulative impact of the misfit is neutralized (reduced to approximately $0) prior to the end of the two year period, the Task Force recommends that any remaining portion of the "tilt" to the index be made immediately.

FIGURE 1

SMALL CAPITALIZATION STOCKS
Periods of Under and Over Performance
1926 - 1989



Source: Ibbotson Associates

FIGURE 2

SBI ACTIVE MANAGERS VS. MARKET

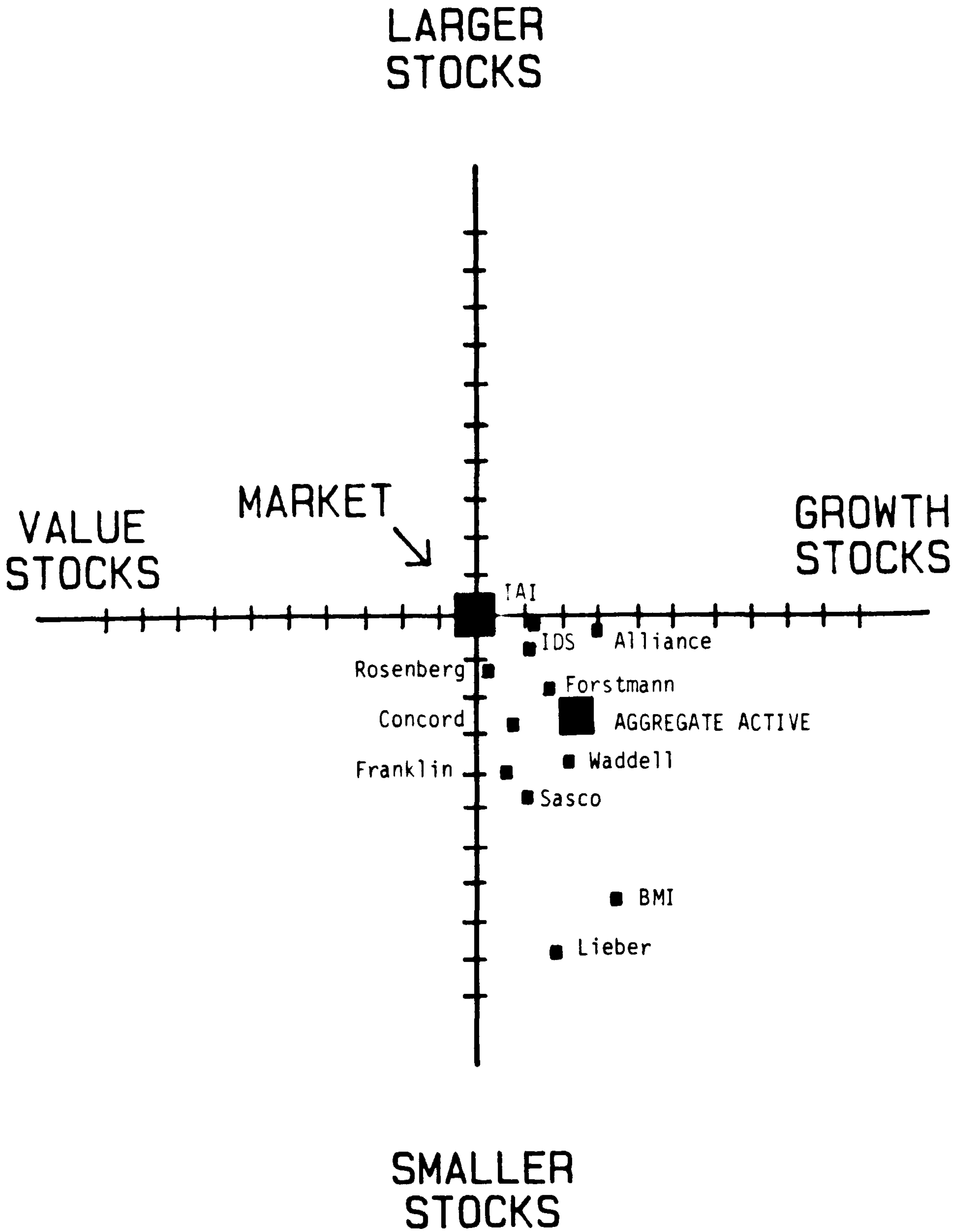


FIGURE 3

STOCK MARKET RETURNS
BEFORE MANAGERS WERE HIRED
1977 - 1983
Wilshire 5000: 17.2%

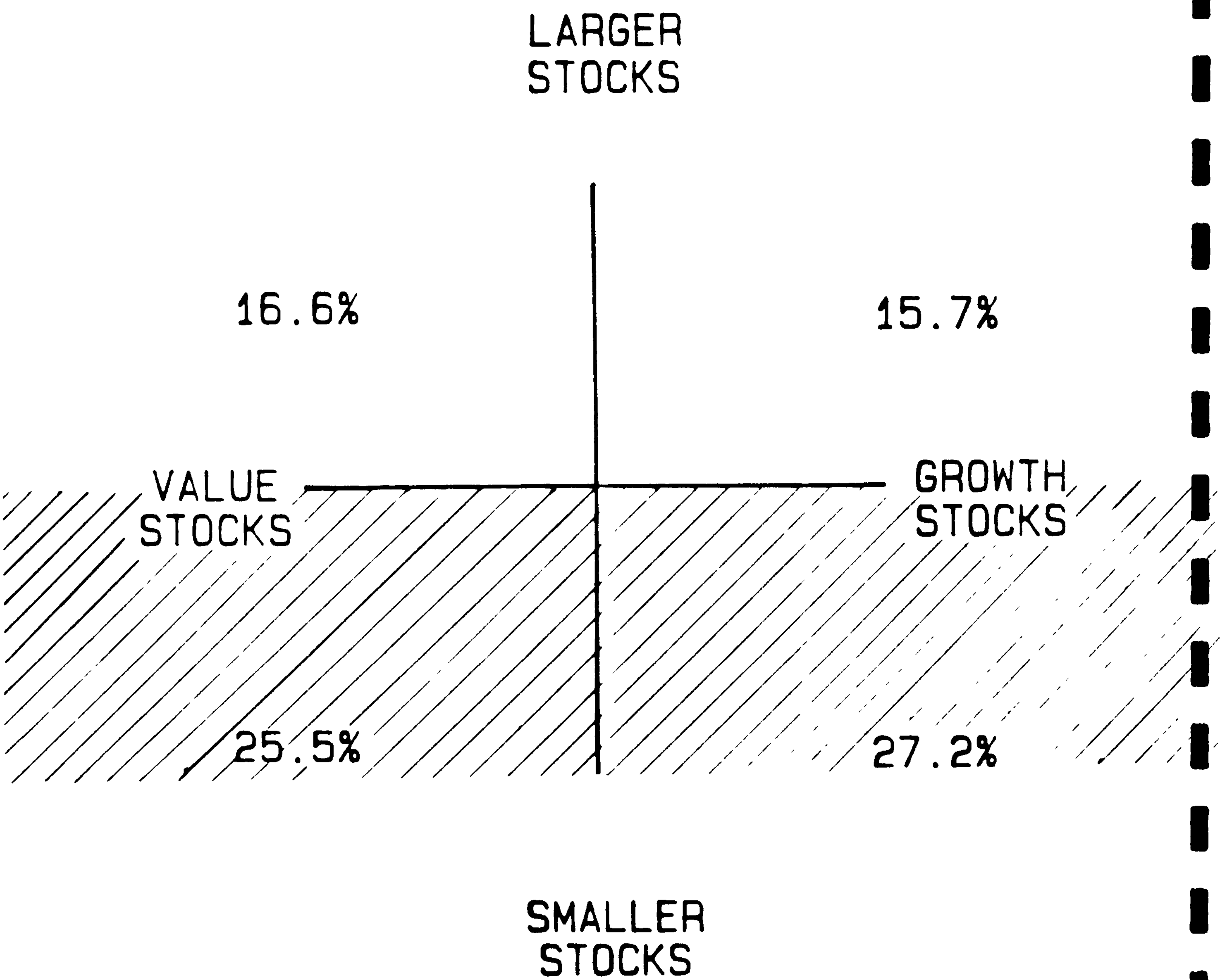


FIGURE 4

STOCK MARKET RETURNS AFTER MANAGERS WERE HIRED 1985 - 1989 Wilshire 5000: 19.1%

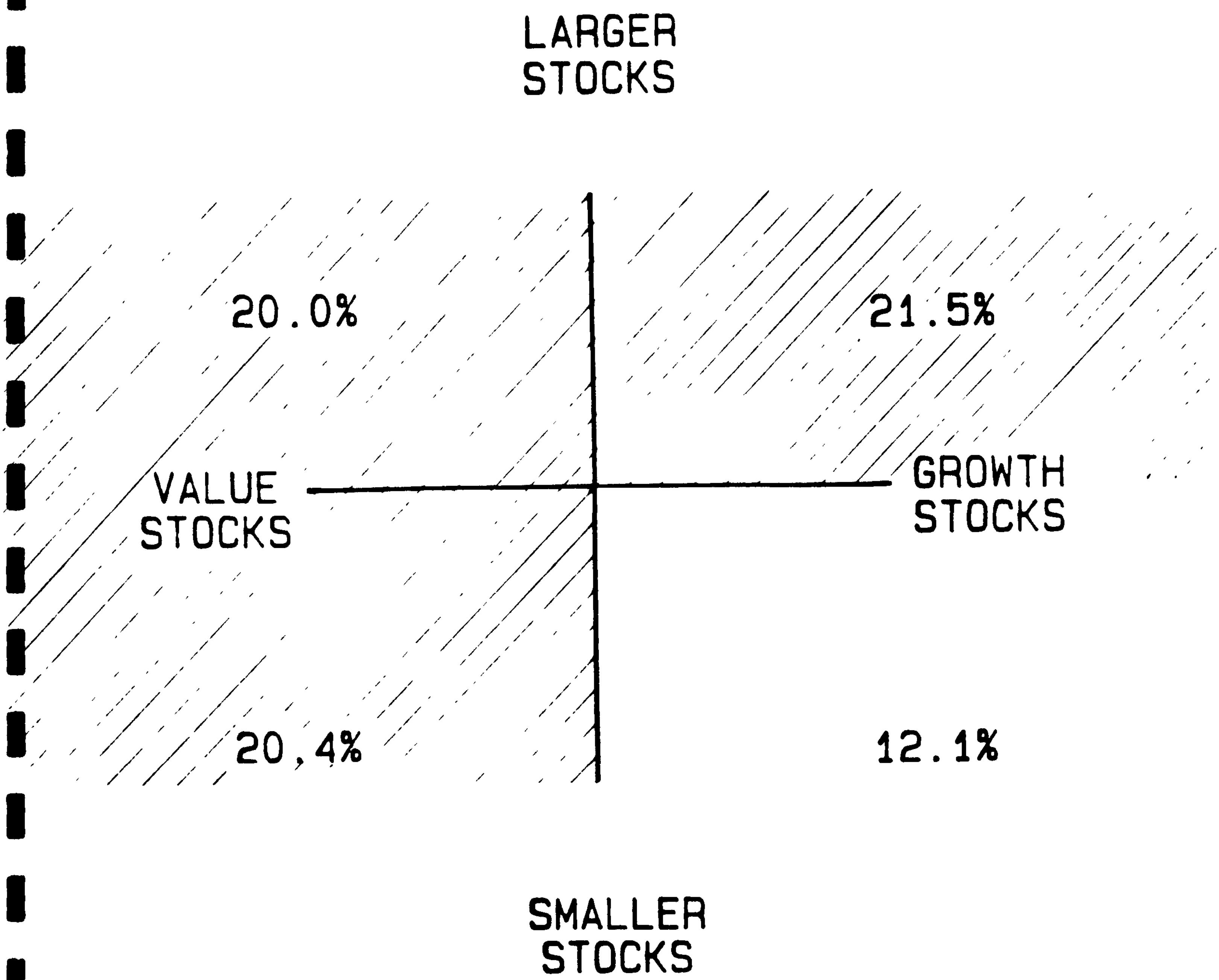


FIGURE 5

ACTIVE MANAGER UNIVERSE VS. MARKET

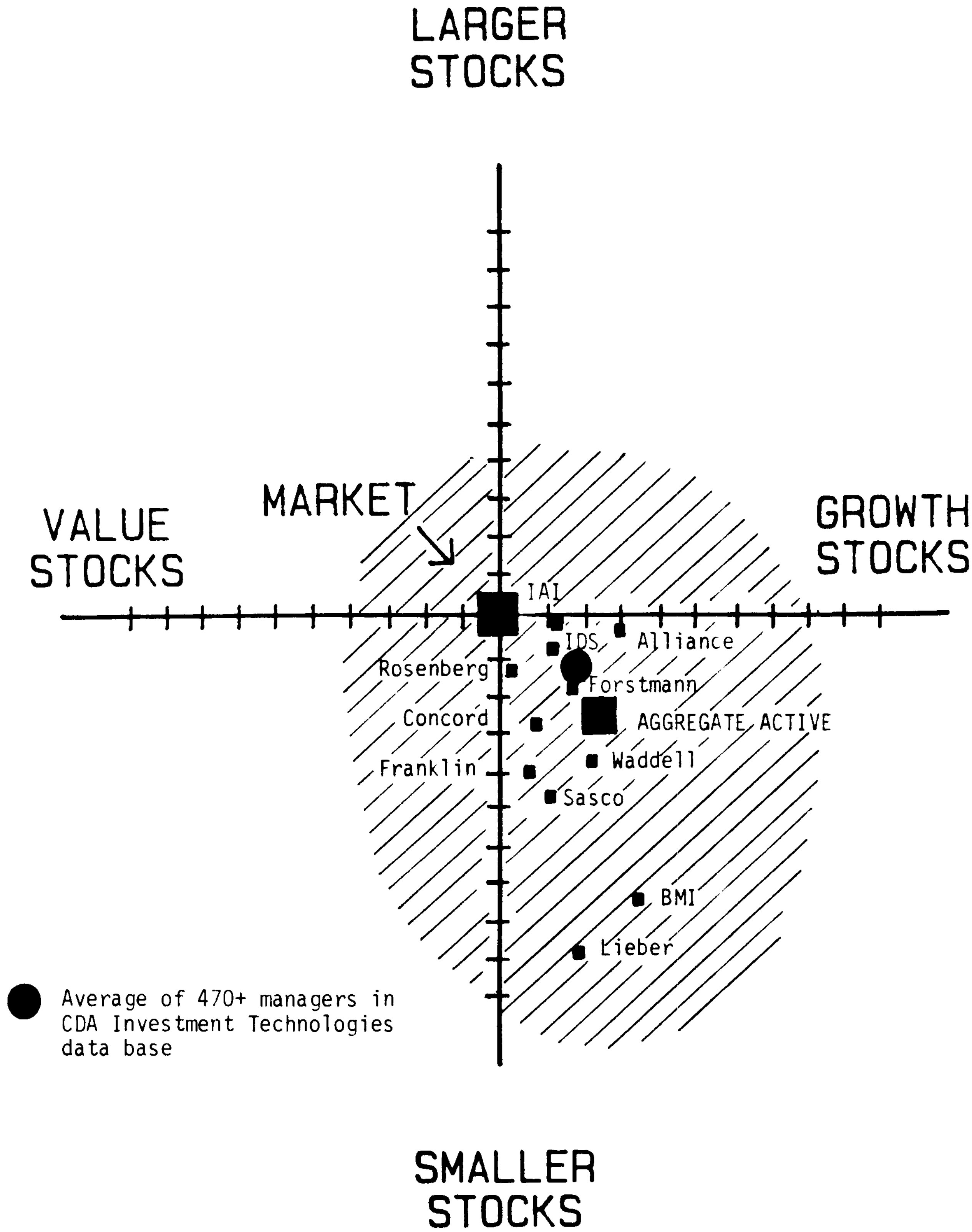


FIGURE 6

Expected Variability of Returns Relative to Wilshire 5000

	Annualized
Current Active Managers Benchmarks	**±3.20%**
Large Value Style Index	**±6.35%**
Active Manager Completeness Fund	**±5.62%**

Data Source: BARRA

FIGURE 7

Relative Efficiency of Misfit Control Strategies

Current Active Managers Combined with	Resulting Misfit	Net Change
Current Index	±1.43	---
Large Value Style Index		
@ $300 million	±1.33	-0.10
@ $500 million	±1.35	-0.08
@ $700 million	±1.45	+0.02
Active Manager Completeness Fund @ $238 million	±1.14	-0.29
Tilted Index	±0.59	-0.84

Note: All figures are annualized percentage points.
Source: BARRA

FIGURE 8

Transition from Current Index to Custom Tilt Index

# ISSUES:	Current	Tilted
	1607	1369

TURNOVER: less than 15%

MARKET CAPITALIZATION STRUCTURE WILL CHANGE

	Current	Tilted
$10 Billion and Above	32.78%	48.16%
Average	$1.8 Billion	$2.0 Billion

MARKET RISK (BETA) WILL CHANGE

	Current	Tilted
Beta < 1	42.6%	51.8%
Average	1.0085	0.9619

SECTOR EXPOSURES WILL CHANGE

	Current	Tilted	Change
Basic Materials	11.26%	8.95%	(2.31)
Energy	9.39	13.73	+4.34
Technology	8.13	4.37	(3.76)
Utilities	16.11	19.86	+3.75

FIGURE 9

Expected Variability of Returns Relative to Wilshire 5000

<u>**Basic Funds Stock Segment With Current Index**</u>

Current Active Managers Benchmarks	**±3.20%**
Current Index Fund	**±0.53%**
Combined	**±1.43%**

<u>**Basic Funds Stock Segment With Tilted Index**</u>

Current Active Manager Benchmarks	**±3.20%**
Tilted Index Fund	**±1.40%**
Combined	**±0.59%**

FIGURE 10

History of Style Bias/Misfit

1982 - 83 **Board Selected Original Active Managers**

- Emphasized past performance vs. the market
- Resulted in unintended bias toward small growth

1985 **Board Reallocated Within Active Group**

- Terminated several managers
- Provided better balance between growth and value
- Still over emphasized small cap

1985 - 86 **Board Approved Use of Benchmarks**

- Provided tool to specify/quantify existing bias

1986 - 87 **Board Adopted Basic Funds Policy Paper**

- Opposed style-timing
- Identified need to offset existing unintended bias
- Introduced completeness fund concept

1987 - 88 **Board Terminated Additional Managers**

- Added to small-growth bias

1988 **Staff Proposed Completeness Fund Plan**

- Proposal was not recommended by IAC
- Staff began research on alternatives

1988 **IAC Re-affirmed Need to Address Style Bias**

- Urged Board to reduce small-growth bias through the addition of new managers or other means

1988 - 89 **Board Considered/Approved New Managers**

- Reduced (but did not eliminate) small-growth bias

ATTACHMENT B

MANAGER CONTINUATION POLICY

Staff Position Paper

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Individual proposed revisions are noted in the body of the text. New language is indicated by underline, deletions by ~~strike-out~~.

EXECUTIVE SUMMARY

Evaluating the performance of the SBI's diverse group of money managers is an integral feature of the Board's investment policy. In order to make informed judgments regarding the current capabilities of the Board's managers, staff has developed a set of specific evaluation guidelines. These guidelines form a "manager continuation policy" that will assist the Board in its decisions concerning retention and termination of money managers.

Staff believes the proposed manager continuation policy offers these primary benefits:

- o It encourages a comprehensive and consistently applied analysis.
- o It fosters a long-term attitude toward performance evaluation.
- o It communicates investment objectives between the Board, its managers and its staff.

Staff recommends the Board's manager continuation policy include both quantitative and qualitative performance criteria. The difficulty of statistically confirming investment skill makes an absolute reliance on portfolio return numbers inadvisable. Qualitative aspects of a manager's operation should also be considered.

QUALITATIVE CRITERIA

Qualitative performance evaluation criteria relate to those aspects of a money manager's investment operation that cannot be expressed as measurable targets. Investors such as the Board must attempt to deduce the skills of money managers by searching for the presence or absence of basic building blocks of sound investment management within a manager's firm:

Elements of an Efficient Investment Organization

- o Experienced and talented staff
- o Organizational stability
- o Clear leadership
- o Planned growth
- o Adequate client support

Elements of a Well-defined Investment Approach

- o Clearly specified investment style
- o Well-conceived decision-making process
- o Adequate feed-back and control mechanism

Table 1 provides a more specific list of criteria which can be used to evaluate a manager's investment organization and investment approach. Staff recommends these criteria be used in the qualitative evaluation of the Board's managers.

Failure to meet one or more of these criteria should not be sufficient reason to terminate a manager. As a general rule, a qualitative evaluation should be applied in conjunction with quantitative evaluation to determine whether a manager is meeting the Board's expectations. However, it is important to specify exceptions to this general rule. Certain changes in a manager's organization or investment approach will dictate re-evaluation of the Board's relationship with the firm. Staff recommends that the following events trigger this analysis and automatically place the manager on probation:

- o A change in the firm's ownership or important members of its management team.
- o A change in the manager's investment style.

- o An inability to create or maintain an appropriate benchmark portfolio.
- o A significant gain or loss in accounts over the previous year.

Staff recommends that a manager remain on probation no longer than six months. In the interim, if the issues of concern are not satisfactorily resolved, the manager should be terminated.

QUANTITATIVE CRITERIA

Quantitative performance evaluation criteria relate to those aspects of a money manager's operation that can be analyzed relative to measurable targets. A manager's return relative to an appropriate benchmark represents "the bottom line" for a plan sponsor. However, the investment performance of superior and inferior managers exhibits a large amount of variability, even when returns are measured relative to a customized benchmark.

Quantitative performance criteria must take this variability into account. A poorly designed measure could lead a plan sponsor to erroneously classify managers as inferior. This, in turn, could create costly and excessive manager turnover.

Figure 1 depicts a statistically valid method of assessing the variability of manager performance relative to a benchmark. The horizontal line represents the return on the benchmark. Performance exceeding (falling below) the benchmark will plot above (below) the horizontal line. The area between the two curved lines represents a confidence interval based on the manager's actual return relative to its benchmark. Returns within the confidence interval represent performance due either to skill or to chance. Returns falling outside the confidence interval represent superior or inferior performance significant enough that the odds of it being due to chance are low. The confidence interval range narrows over time. As more information is received, the ability to make judgments about a manager's investment skill increases.

Staff recommends that this confidence interval approach be incorporated in the Board's quantitative evaluation of money managers. ~~Furthermore, staff recommends establishing two lower confidence bands. On the downside, breaching the first level would result in a manager being placed on probation. Breaching the second level would cause termination.~~ Cumulative performance that breaches the lower band of the confidence interval will mandate termination. Performance that falls within the confidence interval but is below the benchmark return over the latest five year period will trigger an in-depth analysis of the firm. The analysis will result in a vote of "confidence" or "no-confidence" in a manager's ability to add value to its benchmark in the future. The decision to continue or terminate the manager will be re-examined in one year if performance continues to lag the benchmark over the latest five year period.

REPORTING FORMAT

Staff has designed a performance evaluation report format that incorporates the salient features of the qualitative and quantitative criteria presented in this paper. An example of this report format-~~for-one-of-the-Board's-managers~~ is provided in Figure 2.

Qualitative evaluations would be reported on an exception basis. Only in cases where there is cause for concern, or where the manager is exceptionally positive, would the criteria be highlighted. Quantitative evaluations would be presented using the confidence interval approach.

Staff recommends that the performance evaluation reports be reviewed by the IAC on a quarterly basis and presented to the Board. Staff further recommends that the appropriate report be shared with each of the Board's managers during the semi-annual meetings conducted by staff.

REGULAR IN-DEPTH REVIEW

The process described above will flag certain situations that merit special review. In addition, staff recommends that each each active stock and bond manager be subject to an in-depth review at least once every three years. This review should take place regardless of the manager's performance above or below its benchmark.

NEW MANAGERS

The Board is likely to add new equity and fixed income managers in the future. Hiring new managers does not necessarily imply that the Board is dissatisfied with its existing managers. The Board may simply come to the conclusion that a particular new manager can do a better job than an existing manager. A flexible approach to manager retention, that is cognizant of the costs of manager turnover, can benefit the Board's investment program.

The qualitative and quantitative performance evaluation criteria discussed in this paper should be used in the hiring of new managers.

SECTION 1: INTRODUCTION

During 1987, the Board adopted a comprehensive investment policy for the Basic Retirement Funds. That policy provides a set of decision rules that guide the long-run investment management of the Basic Funds. The Basic Funds' investment policy has been described in a four-part series of staff position papers presented in recent Board Quarterly Reports.

An important component of the Basic Funds' investment policy is an investment management structure which utilizes a number of common stock and bond managers. As part of this investment management structure, the Board allocates funds to both passive and active money managers. Further, by design, the Board's active managers pursue a variety of investment styles.

Evaluating the performance of this diverse group of money managers is an integral feature of the Board's investment policy. The Board expects its active managers to add value to their investment styles. Passive managers are expected to track the performance of their particular indices. In aggregate, the Board expects its managers, within each asset class, to outperform their respective asset class targets.

The Board strives to hire managers who it believes can satisfy these performance expectations. But the Board's perception of its managers' abilities may change over time. For example, changes in a manager's organization can adversely affect the manager's investment decision-making. Or, by gaining more experience with a manager, the Board may discover unsatisfactory aspects of a manager's investment process that previously had not been apparent. In any event, managers in whom the Board no longer has strong confidence should not be retained. The purpose of the Board's manager performance evaluations is to determine that level of confidence.

Performance evaluation is a complex and often frustrating process. Without sound procedures, this process can easily break down into a series of short-run, contradictory decisions that are counterproductive to a pension plan's long-run interests. In order to make informed judgments regarding the current capabilities of its managers, the Board requires a broad, clearly specified evaluation procedure.

Part IV of the staff's investment policy paper presented a number of general performance evaluation principles. This paper extends those concepts by developing a specific set of guidelines for evaluating the performance of the Board's common stock and bond managers.

Staff believes that this "manager continuation policy" offers three primary benefits:

- It encourages a comprehensive and consistently applied analysis.
- It fosters a long-term attitude toward performance evaluation.
- It communicates investment objectives between the Board, its managers, and its staff.

As a final introductory note, many of the ideas presented in this paper are not new. Staff has been applying and refining innovative performance evaluation techniques for several years.

Periodic reports have been made to the Board in its Quarterly Report. However, this position paper represents staff's attempt to present a comprehensive approach to manager performance evaluation.

SECTION 2: AMBIGUITY OF SUPERIOR PERFORMANCE

Investment management is similar to other businesses in that clients contract to receive services that presumably will make them better off. Specifically, clients hire money managers because they believe that the managers will make investment decisions that will enhance the clients' wealth. However, the investment management business is unusual in that the quality of its "product" appears so readily quantifiable and simple to evaluate. One merely observes changes in the value of money managers' portfolios over time and makes appropriate judgments concerning the managers' talents.

Unfortunately, performance evaluation is not as straightforward as the process described above. Two important issues complicate the analysis:

- Superior investment performance is a highly relative concept.
- Investment performance is inherently uncertain.

THE RELATIVE NATURE OF INVESTMENT PERFORMANCE

The quality of investment performance is inextricably linked to investment objectives. Investment skill can be properly assessed only if the evaluation is conducted within the context of the investment objectives pursued by the investor.

In some cases this principle is obvious. For example, a bond manager's returns should not be compared to the performance of a stock market index. The bond manager's investment objectives are unrelated to the performance of common stocks. While this distinction is less clear within asset classes, it is still quite relevant. For example, "growth stock" manager returns generally should not be compared to the performance of the entire stock market. The growth stock manager's investment goal is to select the best performing stocks from a subset of the securities which comprise the stock market. Therefore, the growth stock manager's returns at times may deviate from the returns on the market for reasons totally unrelated to the manager's investment skill. A valid performance evaluation approach should explicitly take into account the investment objectives of the managers being evaluated.

INHERENT VARIABILITY OF INVESTMENT PERFORMANCE

The investment results of even superior managers exhibit a large amount of random variability. This makes it difficult to identify investment skill. A "good" money manager may be right 51% of the time as opposed to a "poor" manager who is right 50% of the time. In the near-term, the "poor" manager's portfolio might outperform the superior manager's portfolio simply by random luck. Over the longer-term, the superior manager's skill will become apparent. But the time period required to make this distinction may be considerably longer than most clients are willing to accept.

NEED FOR APPROPRIATE BENCHMARKS

One means of addressing these two issues is to construct unique benchmarks for each money manager. Properly designed, such benchmarks reflect a manager's investment style. Thus, it is the appropriate bogey against which to evaluate the manager's investment performance. Further, because benchmarks are tied to the manager's investment style, some (but by no means all) of the "noise" caused by the random variability of capital market returns is removed from the evaluation process. (Benchmark, or normal portfolios, are described in greater detail in Part III, section 4 of the Basic Retirement Funds' investment policy paper.)

Staff believes that appropriate benchmarks are a crucial element of manager performance evaluation. Consequently, staff has devoted considerable attention to the subject and has worked closely with the Board's consultant, Richards & Tierney, to build benchmarks for the Board's managers. Nevertheless, benchmarks are not a panacea for the difficulties of performance evaluation. Capturing a manager's investment style in a benchmark is an inexact process. Moreover, even given a precise benchmark, a talented manager's superior performance relative to that benchmark may still be difficult to discern in the near-term because of the variability of investment returns.

Therefore, while the use of benchmarks in performance evaluation is a considerable improvement over simply comparing a manager's returns to the market or to other managers, a blind reliance on near-term relative performance comparisons is not likely to lead to sound manager retention decisions. Other, less quantifiable factors have to be considered. Therefore, staff recommends that benchmarks be integrated into a decision-making framework which incorporates both qualitative and quantitative evaluation criteria. The following two sections describe that framework.

SECTION 3: QUALITATIVE CRITERIA

Qualitative performance evaluation criteria relate to those aspects of a money manager's investment operations that cannot be expressed as measurable targets. By definition, these criteria cannot be incorporated into numerical decision rules. As a result, they may require significant judgments on the part of evaluators. Nevertheless, the ambiguity of superior investment performance necessitates the use of qualitative criteria. Clients must attempt to deduce the skills of money managers by searching for the presence or absence of basic building blocks of sound investment management within the manager's firm.

Qualitative guidelines can be viewed as necessary, but not sufficient, conditions for consistent superior investment performance. To the extent that a manager substantially fails to satisfy these criteria, the client lacks confidence that the manager has the necessary components of a successful investment operation. On the other hand, even if the manager fully satisfies these criteria, there is no guarantee that the manager will exhibit long-run superior results. But because superior investment abilities are so difficult to identify, clients are forced to rely heavily on qualitative inferences of managers' skills.

Staff has categorized qualitative performance evaluation guidelines into two primary areas of a manager's operations: Organization and Investment Approach.

ORGANIZATION

An efficient organization is a necessary element of a successful investment program. To evaluate the quality of a manager's organization, staff has divided the Organization criteria into five subcategories:

ELEMENTS OF AN EFFICIENT INVESTMENT ORGANIZATION

- Experienced and talented staff
- Organizational stability
- Clear leadership
- Planned growth
- Adequate client support

To briefly summarize these items, highly motivated and talented professionals lie at the heart of any successful investment organization. The evaluation criteria should judge the experience and quality of the professionals employed by a manager.

A superior money management organization not only offers incentives to retain talented professionals, but also integrates these people into a cohesive structure. This requires effective leadership and organizational stability.

A manager should have some type of business growth plan in place. Uncontrolled growth can impede a manager's performance. The growth path of a successful manager firm should be consistent with the organization's capabilities.

Finally, large institutional clients, such as the Board, have a variety of administrative requests of a manager, including data collection, benchmark construction, strategy reports, etc. A manager's organization should be responsive to such needs.

INVESTMENT APPROACH

Talented people blended into an efficient organization are not enough to produce superior investment results. A well-defined investment approach is needed to focus the resources of a manager's organization in a particular direction. To evaluate a manager's investment approach, staff has developed the following three subcategories:

ELEMENTS OF A WELL-DEFINED INVESTMENT APPROACH

- o Clearly specified investment style
- o Well-conceived decision-making process
- o Adequate feedback and control mechanism

To briefly summarize these items, the capital markets represent a diverse and constantly evolving system. A manager cannot hope to attain significant expertise in all segments of the marketplace. Therefore, without the discipline of a well-defined investment approach, a money manager may expend its resources on segments of the market where it has no comparative advantage over other investors.

A manager's investment approach includes a specification of those segments of the market in which the manager chooses to focus its energies. This specification can be defined as the manager's investment style. A manager's investment style should reflect a thoughtful approach to identifying attractive segments of the market. Further, a manager should have consistently and successfully applied its investment style over a variety of market conditions.

A manager's investment style is implemented through a decision-making process. This decision-making process should be clear and well-conceived. It should involve a set of logical portfolio construction procedures, consistent with the manager's investment style.

The manager's investment approach should also entail a feedback and control system. The manager should understand its performance relative to an appropriate benchmark. The manager should constantly be gathering information that can be used to refine the investment approach and make it more effective.

DECISION GUIDELINES

Table 1 provides a more detailed breakdown of the qualitative performance evaluation criteria described above. The various subcategories are divided into a specific list of criteria which can be used to evaluate the status of the Board's managers.

Failure to meet one or more of these criteria should not serve as grounds for the immediate termination of a manager or even placing the manager on probation. As a general rule, a qualitative evaluation should be conducted in conjunction with the quantitative evaluation to determine the Board's confidence in a manager.

However, staff recommends several important exceptions to this general rule. Certain changes in a manager's organization or investment approach should dictate immediate re-evaluation of the Board's relationship with the firm. Staff recommends that the following events trigger this analysis and automatically place a manager on probation.

- o A change in the firm's ownership or important members of its management team.
- o A change in the manager's investment style.
- o An inability to create or maintain an appropriate benchmark portfolio.
- o A significant gain or loss of accounts during the previous year.

In the event that a manager is placed on probation, staff should meet with the manager as soon as possible to discuss the Board's concerns. Staff further recommends that a manager remain on probation no longer than six months. In the interim, if the issues of concern are resolved to the Board's satisfaction, the manager should be removed from probation. However, if the issues are not satisfactorily resolved, the manager should be terminated no later than at the end of this six-month period.

SECTION 4: QUANTITATIVE CRITERIA

Quantitative performance evaluation criteria relate to those aspects of a money manager's operation that can be analyzed relative to specific guidelines. These criteria traditionally have been applied to the returns produced by managers. But they could also be extended to include the risk incurred by managers.

A manager's performance relative to an appropriate benchmark represents the bottom line of the manager's business. For good reason then, both managers and their clients concern themselves with relative rates of return when evaluating the managers' performance. However, as discussed in Section 2, the difficulty of statistically confirming investment skill makes a heavy reliance on portfolio return numbers inadvisable. Qualitative aspects of a manager's operation should also be considered.

Furthermore, because of the ambiguity of superior performance, quantitative evaluation criteria should be designed to avoid two very undesirable outcomes:

- Superior managers may erroneously be identified as inferior, and vice versa, simply by random chance.
- Too many managers, including those with investment skill, may be classified as inferior and fired, resulting in costly excessive manager turnover.

CONFIDENCE INTERVAL APPROACH

Figure 1 presents a general illustration of an approach to quantitative performance evaluation that recognizes these two potential pitfalls. It takes into account both a manager's performance relative to a specific benchmark and the variability of the manager's returns relative to that benchmark.

The horizontal line in Figure 1 represents the return on a hypothetical manager's benchmark. The manager's actual return less the return on the benchmark is shown by the jagged line. Thus, when the manager has exceeded (fallen below) the benchmark's return, his relative return line will plot above (below) the horizontal line. The graph is cumulative, showing the manager's return relative to the benchmark since the inception of the analysis.

Naturally, a client would like its managers' returns to always lie above the horizontal line. But even the most skillful manager may underperform its benchmark for periods of time. How much underperformance should a client permit before becoming convinced that a manager is inferior? Conversely, by how much must the manager outperform its benchmark before a client can feel comfortable that the manager is truly superior? Because the manager's performance relative to its benchmark has a large variable element to it, a precise answer to these two questions cannot be given. Rather, a statistical analysis is required that reduces the probability of an incorrect answer to an acceptable level.

Avoiding a long discussion of these statistical concepts (see Appendix A for additional information), the two curved lines in Figure 1 represent a confidence interval surrounding the return on the manager's benchmark. In between the upper and lower confidence interval bands lie a range of performance relative to the benchmark for which it is difficult to distinguish skill from random chance. That is, in this range a manager's superior or inferior performance relative to the benchmark might be due to skill (or lack thereof). But there also is a high probability that the relative performance is due simply to chance.

On the other hand, if a manager's relative return falls outside of the confidence interval, this result represents superior or inferior performance is significant that the odds of it being due to chance alone are low. In such a case, a judgment concerning the manager's investment skill can be rendered with a reasonable degree of confidence.

Notice that the confidence interval is very wide initially and then narrows as time progresses. This is because as more performance data is received over time, statistically speaking, the ability to make judgments about the manager's investment skill increases. With more information, less of a difference between the manager's returns and those of its benchmark is needed to make an informed judgment about the manager's investment skill.

DECISION GUIDELINES

Staff recommends that this confidence interval approach be incorporated as part of the Board's manager continuation policy. ~~Furthermore, staff recommends establishing two levels of confidence intervals, particularly with respect to performance below the benchmark. Specifically, as illustrated in Figure 2, staff recommends setting a~~

- ~~Probation Level. -- Breaching this first~~ the ~~lower band would result in a manager being placed on probation. This level of inferior performance is low enough to cause concern, but the possibility that it is due simply to chance is still high.~~

- Confidence Level. Cumulative performance which crosses the upper band is an indication that the manager has superior investment skill.

- Termination Level. Breaching ~~this second~~ the lower band ~~would~~ will result in termination ~~a manager being fired~~, unless extraordinary offsetting factors exist. This level of inferior performance is significant enough that is unlikely that the manager possesses investment skill.

- Intermediate Level. Cumulative performance that falls between the upper and lower bands is less definitive. While a manager is expected to outperform its benchmark over time, it is likely that the manager will both outperform and underperform on a quarter-to-quarter or year-to-year basis. Underperformance over the latest preceding five years will trigger in-depth analysis of all aspects of a manager's operation and performance.

  The staff and the IAC will recommend continuing or terminating the manager based on the results of the review. This will constitute a vote of "confidence" or "no-confidence" in the manager's ability to add value in the future. The decision to continue the manager will be re-examined in one year if performance continues to trail the benchmark over the latest five year period.

Please refer to Section 6 for an outline of the issues to be addressed in the in-depth review.

SECTION 5: REPORT FORMAT

Staff has designed a performance evaluation report format for the Board that presents the salient features of a manager's evaluation. This format briefly summarizes the qualitative and quantitative performance evaluation criteria as applied to each of the managers. ~~Figure 2 illustrates the proposed report format as applied to IDS Advisory, one of the Board's external equity managers, for the fourth quarter of 1987.~~

The first part of Figure 2 lists pertinent information about the manager including: the portfolio manager handling the Board's account; the Board's assets invested by the manager; and, the firm's investment philosophy.

The next portion of Figure 2 presents a qualitative evaluation of the manager. It is conducted on an exception basis. That is, staff assumes that each of the Board's managers is at least adequate with respect to the qualitative criteria. Only in those cases where there is some cause for concern, or where the manager's situation is exceptionally positive, is the criteria highlighted.

As part of the manager's quantitative evaluation, the next portion of Figure 2 presents the performance of the manager's actual portfolio and its benchmark portfolio over the ~~recent~~ latest quarter, year, five years and since ~~year-end 1983~~ the inception of the account with the SBI. The graph in Figure 2 completes the quantitative evaluation by applying the confidence interval approach discussed in Section 4.

The performance evaluation report concludes with a brief recommendation from staff as to the manager's status. Staff will recommend one of the following:

- **No action.** The manager has adequately satisfied the Board's qualitative and quantitative performance evaluation criteria.

- ~~**Probation.** The manager has failed to satisfy certain important qualitative criteria and/or the manager's performance relative to its benchmark is sufficiently poor to cause concern.~~

- **In-depth Analysis.** The manager's performance over the preceding five years has lagged the performance of its benchmark. Staff will conduct an in-depth review of all aspects of a manager's performance (both qualitative and quantitative) to determine whether the manager should be continued or terminated.

- **Qualitative probation.** The manager has failed to satisfy certain qualitative criteria that cause immediate and serious concern about the manager's organization.

- **Termination.** The manager has been unable to satisfy concerns which caused it to be placed on probation for qualitative reasons, ~~and/or its performance relative to its benchmark is significantly inferior.~~ the in-depth analysis resulted in a vote of "no confidence" in the manager's ability, or performance has reached the termination level of the confidence interval.

~~If the Board desires, staff can present the performance evaluation data to both the Board and the IAC on a quarterly basis. However, staff does not expect the evaluations to change materially from quarter to quarter.~~

The performance report will be prepared for each active stock or bond manager on a quarterly basis for review by the IAC and presentation to the Board. However, the confidence interval graph will not be plotted or drawn until the manager has 18 months of performance history with the SBI.

Staff recommends that the performance evaluation material presented to the Board also be shared with the managers. Staff meets semi-annually with each of the Board's equity and fixed income managers. These meetings offer a convenient forum to discuss the items displayed in the performance evaluation reports. Staff will incorporate the results of these meetings in its reports to the IAC and the Board.

SECTION 6: REGULAR IN-DEPTH REVIEW

The process described in the previous sections will flag certain situations that merit special review by staff and the IAC. In addition, each active manager should receive a comprehensive review on a regular basis regardless of performance relative to its benchmark. This periodic review should highlight any recent trends and allow the SBI to take any necessary corrective action before an issue seriously affects performance.

Staff recommends that each active manager receive an in-depth review at least once every three years. In order to cover all active mangers within this time frame, 1-2 managers would be reviewed each quarter. Further, staff recommends that the results of the evaluation be reviewed by the appropriate committee(s) of the IAC. While the components of the review will be tailored for each manager, staff expects an in-depth review would include the following topics:

o Organizational Background

- ownership
- professional staff
- assets under management
- personnel turnover

o Investment Approach

- philosophy
- prominent characteristics
- benchmark construction

o Performance Analysis

- benchmark explanatory power
- benchmark performance relative to the market
- performance attribution

SECTION ~~6~~ 7: NEW MANAGERS

The Board is likely to add new equity and fixed income managers in the future. Many attractive active management approaches are available. Further, the investment management business is highly competitive and dynamic. New active management approaches appear frequently. Manager organizations change as professionals move from firm to firm. As a result, the Board can benefit by actively seeking new managers who may be able to deliver performance superior to its existing managers.

Hiring a new manager need not imply that the Board is seriously dissatisfied with its existing managers. The Board may simply come to the conclusion that a particular new manager can do a better job than an existing manager. Thus, the Board should not necessarily wait until an existing manager is placed on probation before considering taking action. Flexibility with respect to its manager group will present the Board with considerably more options than awaiting seriously poor performance.

However, a flexible approach to hiring new managers should avoid rapid and therefore costly turnover. The expense of terminating and replacing managers likely runs between 2-4% of the affected assets. The Board should be confident that the benefits of changing managers are worth the cost. Nevertheless, in those cases where the benefits appear to outweigh the costs, the Board should not hesitate to change managers.

MANAGER SELECTION CRITERIA

The process of hiring new managers should be as comprehensive and consistently applied as the process of evaluating existing managers. The performance evaluation criteria developed in this report should serve the Board well when searching for new managers, as well as when evaluating existing ones. As discussed previously, the qualitative criteria represent necessary conditions for successful investment management. Staff recommends that no manager be hired unless it rates excellent in terms of those qualitative criteria.

With respect to the quantitative criteria, staff recommends that no manager be hired who does not possess an appropriate benchmark. Ideally, the manager should provide historical risk and return data on its benchmark and be able to demonstrate superior performance relative to it. However, this requirement will not likely always be attainable. Nevertheless, the condition that new managers construct benchmarks for future performance evaluation should become standard Board policy.

APPENDIX A

This appendix provides a non-technical description of the confidence intervals used in the proposed manager continuation policy. More detailed discussions can be found in standard statistics textbooks.

The construction of a manager's confidence interval begins with a very simple assumption: The manager has no investment skill. Referring to Figure 1, if this assumption were true, then the manager's cumulative relative return (i.e., the cumulative difference between the return on the manager's portfolio and the return on the manager's benchmark) would be expected to plot along the horizontal line representing the manager's benchmark returns. The manager would be expected to neither outperform nor underperform its benchmark over any given time period.

However, due to the inherent variability of investment returns, even a no-skill manager's returns will sometimes exceed those of its benchmark. At other times, this manager's returns may fall below the benchmark. These results will occur despite the fact that, over the long-run, the manager's performance will equal that of the benchmark.

Can we make some statements about the range over which the no-skill manager's returns are likely to fall around its benchmark's returns? A confidence interval provides a statistical description. Based on the manager's past variability of returns relative to its benchmark, we can calculate, with a specified probability of being correct, the range of performance within which we expect the no-skill manager's cumulative relative return to fall. We refer to this range as the confidence interval for the manager.

The vertical width of the confidence interval is determined by the probability of the confidence interval encompassing the manager's cumulative relative returns over time. The higher (lower) is the probability of capturing the manager's cumulative returns, the wider (narrower) will be the confidence interval.

For example, assume that the confidence interval in Figure 1 is constructed to encompass 80% of the possible cumulative relative returns that the no-skill manager might produce. That is, assuming that the manager's relative returns exhibit the same variability in the future that they have in the past, there is an 80% probability that the manager's cumulative relative return will fall somewhere between the upper and lower confidence levels. This implies that there is a 20% probability that the manager's cumulative relative return will lie outside the confidence interval. Even more specifically, there is a 10% probability that the manager's cumulative relative return will fall above the upper confidence level and a 10% probability that it will fall below the lower confidence level.

The particular percentage of possible cumulative relative returns captured by the confidence interval will change depending on how we construct it. There is no single "correct" percentage. Presumably, we want returns falling outside of the confidence interval to signal unusual events. The purpose of this signal is to make us re-think our no-skill assumption. That is, if a manager's cumulative relative return exceeds the upper confidence level, then perhaps the manager's investment talents actually are superior. Conversely, if the manager's cumulative relative return falls below the lower confidence level, then perhaps the manager's talents actually are inferior.

The appropriate percentage to use in constructing manager confidence intervals depends on one's view of what is an unusual event. Is a one-out-of-five event unusual? How about a one-out-of-ten?

Staff recommends ~~that two confidence intervals be used in the manager continuation policy. The first~~ that the confidence interval ~~would~~ capture 80% of the manager's possible cumulative relative returns. That means that 10% of the time, a no-skill manager's cumulative relative return will fall below the lower confidence level simply by chance, not because the manager is actually inferior. Staff believes that this 10% probability is small enough that if a manager does fall below the lower confidence level, then the Board should conclude that the manager is inferior and should be fired.

~~The second confidence interval recommended by staff would establish a probationary performance level. This confidence interval is narrower than the first. It is designed to capture 60% of a no-skill manager's possible cumulative relative returns. Thus, there is a 20% chance that a no-skill manager's cumulative relative return will fall below the lower confidence level simply by chance. If the manager does fall below this probationary level, the manager should not immediately be fired. There is a~~

~~one in five chance that the event was simply due to random variability. Nevertheless, the event is unusual enough that it should serve as a warning that the manager may actually be inferior and that future action by the Board might be required.~~

TABLE 1

MANAGER PERFORMANCE EVALUATION
QUALITATIVE CRITERIA

I. ORGANIZATION/STAFF

A. Experience and Quality

1. Professionals exhibit a high degree of competence and experience.

2. Professionals have managed money successfully under variety of market conditions.

3. Professionals are familiar with needs of large institutional clients.

4. Firm demonstrates its commitment to integrity and fiduciary responsibility.

B. Stability

1. Current group of professionals is responsible for firm's track record.

2. Turnover has not been extraordinary in terms of either numbers of people or reasons for their departures.

3. When turnover has taken place, prompt corrective measures have been taken.

4. Control or business emphasis of firm has not changed, or in those case where it has, the firm's investment process has remained intact.

C. Leadership

1. An individual is clearly accountable for directing and motivating the firm's professionals.

2. No serious dissension among professionals.

D. Growth in Assets/Accounts

1. Firm has growth policy in place, consistent with its investment approach.

2. Account load of portfolio managers is not excessive.

3. No extreme gain or loss of accounts has occurred in recent years.

TABLE 1 (Cont'd)

E. Client Relations

1. Support staff is adequate to provide satisfactory client servicing.

2. Firm demonstrates willingness to cooperate with clients to achieve client goals.

II. INVESTMENT APPROACH

A. Investment Style

1. Investment style is attractive in that it reflects a thoughtful consideration of reasonable risk-return opportunities.

2. Investment style has been consistently applied over a variety of market environments.

3. Investment style is represented by an appropriate benchmark.

B. Decision-Making Process

1. Portfolio construction procedures are specified, efficient, and consistent with the investment style.

2. Investment research coverage is thorough.

3. Decision-making hierarchy among professionals is clearly specified.

4. Firm demonstrates a willingness to make short-term active bets relative to its benchmark.

C. Performance Review Process

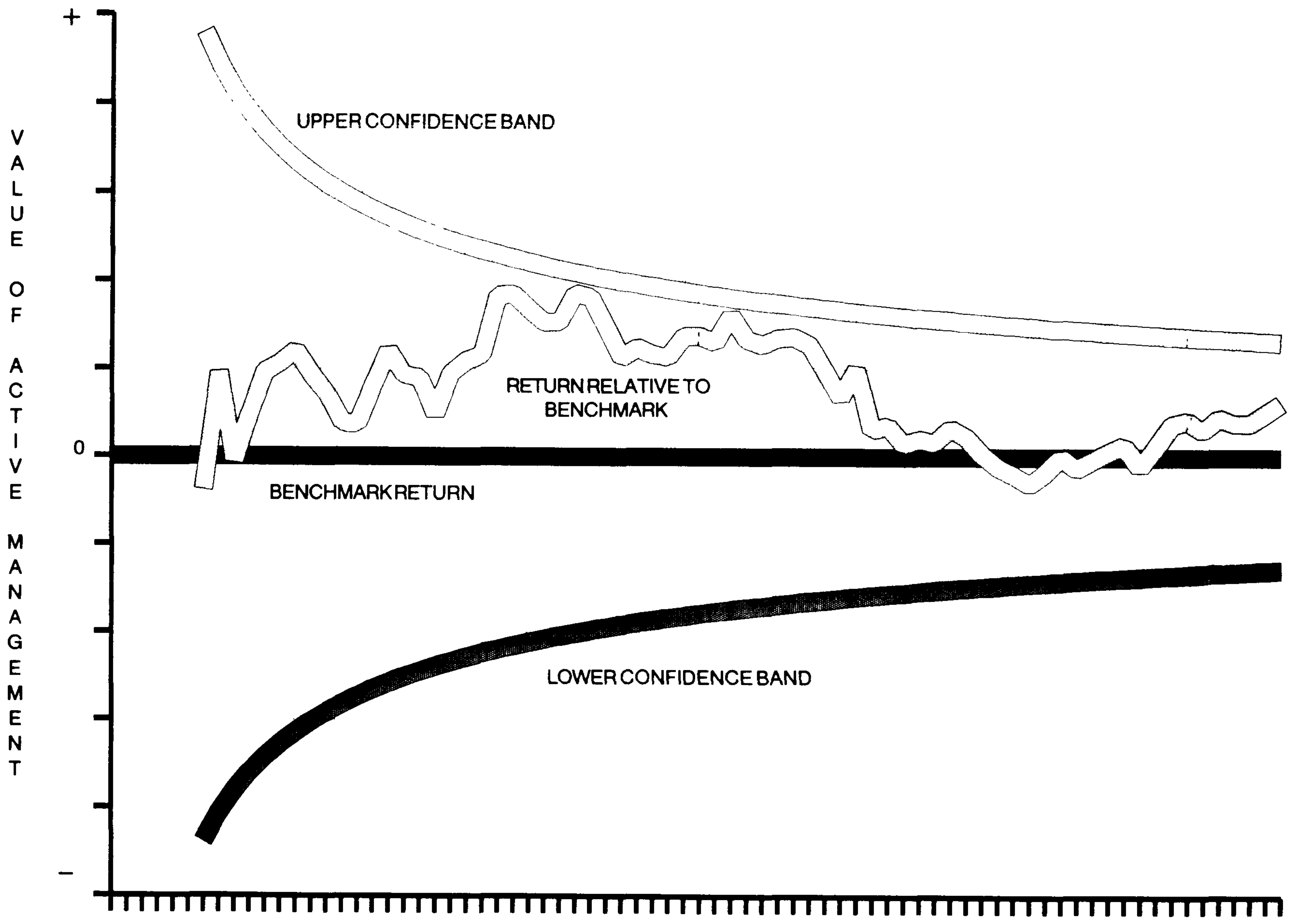
1. Comparisons of risk-return performance relative to a pre-determined benchmark are made.

2. Attempts are made to identify and rectify sources of performance problems.

3. Performance results, sources of returns, and investment strategy are clearly presented to clients.

FIGURE 1

QUANTITATIVE PERFORMANCE EVALUATION
CONFIDENCE INTERVAL APPROACH



Performance Report Format | **Figure 2.** | **X Quarter 19XX**

XYZ Active Manager

PORTFOLIO MANAGER: Name | **ASSETS UNDER MANAGEMENT: $ Dollars**

INVESTMENT PHILOSOPHY

(Brief Description)

QUALITATIVE EVALUATION

(Reported by Exception)

Exceptional strengths:

On-going concerns (if any):

QUANTITATIVE EVALUATION

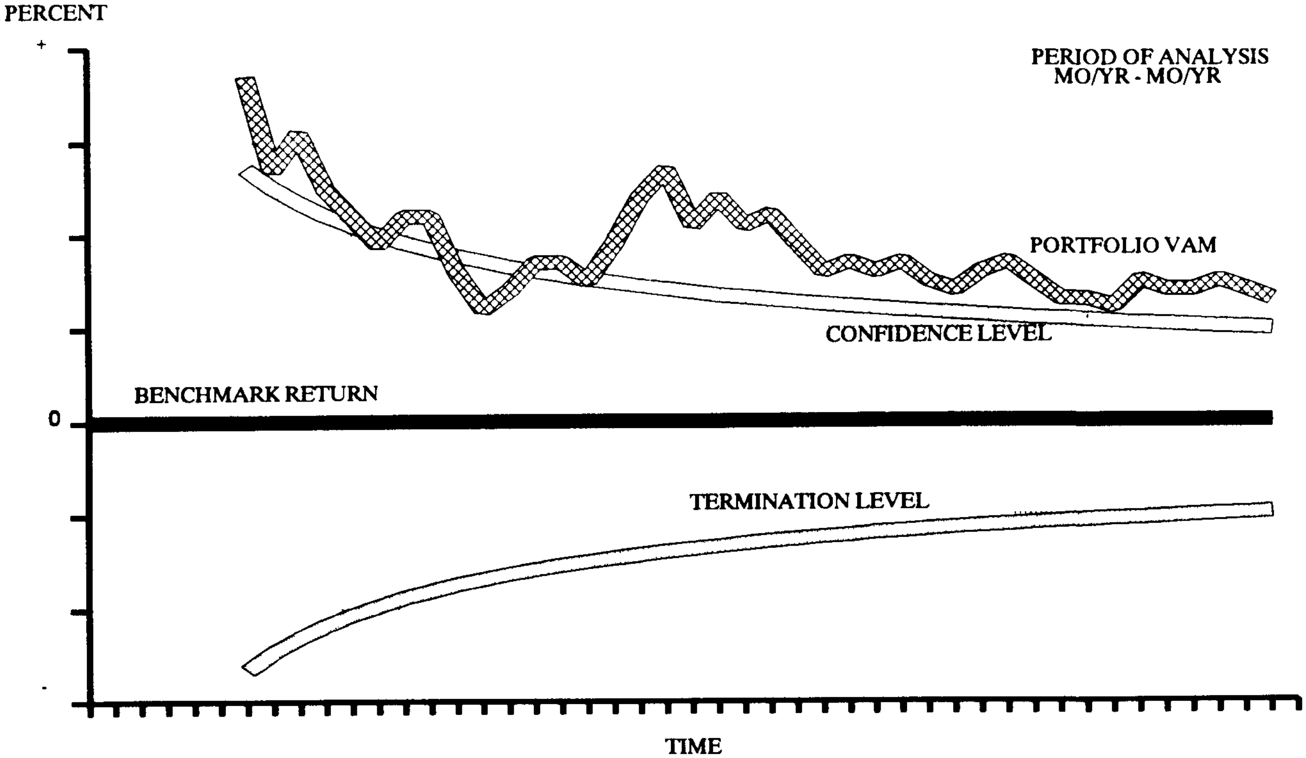
	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since Incept.
Manager XYZ Actual				
Manager XYZ Benchmark				

STAFF RECOMMENDATIONS

Indication of appropriate action:

- No action required
- Qualitative probation recommended
- In-depth analysis needed
- Termination recommended

VALUE OF ACTIVE MANAGEMENT GRAPH



Tab F

EXECUTIVE DIRECTOR
HOWARD J BICKER

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT

Room 105, MEA Building
55 Sherburne Avenue
St Paul, MN 55155
Tel (612) 296-3328
FAX (612) 296-9572

May 25, 1990

TO: Members, State Board of Investment
Members, Investment Advisory Council

FROM: Equity Manager Committee

SUBJECT: Committee Report

The IAC Equity Manager Committee met on May 14, 1990, to review the following agenda:

- o Review of Active Manager Performance
- o Review of Investment Manager Guidelines
- o Approval of Contract Renewals

INFORMATION ITEMS:

1) Review of Active Manager Performance

For the quarter ending March 31, 1990, the active manager group outperformed the Wilshire but underperformed its aggregate benchmark (Managers -2.2% vs. Wilshire 5000 -3.5% vs. Aggregate Benchmark -2.0%). For the latest one, three and five year periods, the current active manager group has outperformed both its aggregate benchmark and the Wilshire 5000.

The evaluation reports for each manager are attached.

2) Review of Investment Manager Guidelines

The Committee reviewed the active domestic common stock manager guidelines. These guidelines are used to govern and evaluate the investment actions of the Board's active domestic common stock managers and are part of the investment manager agreement between the Board and manager.

The original guidelines were established in 1983 when the external active common stock manager program was initiated. The most recent revision to the guidelines occurred in March 1989. Staff recommends no revisions at this time. The Committee concurs with the staff recommendation. A copy of the current investment guidelines is attached to this report.

ACTION ITEM:

1) Renewal of Contracts

The investment management contracts with six active managers will expire on June 30, 1990. Staff remains confident with each manager's ability and investment approach and recommends that all six contracts be renewed. As required by state law, all contracts will contain the standard 30-day notice cancellation clause.

RECOMMENDATION:

The Committee recommends that the SBI authorize the executive director, with assistance from SBI's legal counsel, to negotiate and execute contract extensions with the following firms:

- Alliance Capital Management
- Forstmann Leff Associates
- IDS Advisory
- Investment Advisers, Inc.
- Lieber & Company
- Waddell & Reed

ATTACHMENT A

MINNESOTA STATE BOARD OF INVESTMENT

INVESTMENT GUIDELINES
EXTERNAL ACTIVE DOMESTIC COMMON STOCK MANAGERS

The investment actions of State Board of Investment (SBI) external active domestic common stock managers will be governed and evaluated by the following guidelines:

1. **RETURN/RISK OBJECTIVES**

   The external common stock managers are expected to deliver cumulative returns in excess of a predetermined benchmark portfolio (see **Benchmarks** below). Over time, each manager will be expected to produce portfolios which differ from the manager's benchmark portfolio in the following manner:

   (a) The actual portfolio will realize active risk (annualized residual standard deviation), relative to the benchmark, in excess of one (1) percent.

   (b) The actual portfolio will generate positive cumulative excess returns significant enough to compensate the SBI for the active risk assumed. Generally, the ratio of annualized excess return to active risk in (a) above should be .50 or greater.

2. **BENCHMARKS**

   Each manager must provide and maintain a customized benchmark (normal) portfolio, agreed upon by both manager and SBI, for the purpose of performance evaluation and risk measurement. The benchmark portfolio provided by the manager must satisfy the following characteristics:

   (a) **Unambiguous.** The names and weights of securities comprising the benchmark are clearly delineated.

   (b) **Investable.** The option is available to forego active management and simply hold the benchmark portfolio.

   (c) **Measurable.** It is possible to readily calculate the benchmark's return on a monthly basis.

   (d) **Appropriate.** The benchmark is consistent with the manager's investment style or biases.

   (e) **Reflective of current investment opinions.** The manager has current investment opinions (be they positive, negative, or neutral) on the securities which make up the benchmark.

   (f) **Specified in advance.** The benchmark must be available prior to the start of an evaluation period.

3. ELIGIBLE INVESTMENTS

The investment managers will be restricted to holding common stocks, stock index futures, bonds, and cash equivalents. The investments of each manager must satisfy the following criteria and constraints:

(a) The stocks held must be issued by corporations organized under the laws of the U.S. or its states, the Dominion of Canada or its provinces and/or be listed on the New York Stock Exchange, American Stock Exchange, or NASDQ OTC.

(b) Total SBI holdings in any one corporation shall not exceed five (5) percent of the total outstanding shares of that corporation. Individual investment manager holdings will be monitored by the SBI staff to assure compliance.

(c) Cash equivalent reserves shall be invested in the SBI's STIF fund, managed by its custodian bank.

Investment Managers are not constrained regarding:

(1) transaction turnover
(2) use of covered call options as hedging devices
(3) liquidity requirements
(4) number of individual equity issues which must be held at any given time
(5) the percentage of assets held in cash reserves which must be held at any given time
(6) the use of stock index futures to adjust the effective equity exposure of the portfolio from 0 to 100%. A separate commodities trading agreement must be made between the SBI, manager, and CFTC clearing broker.

4. SBI RESTRICTIONS

The SBI may establish additional constraints in the future to insure that the managers, both individually and collectively, are in compliance with Minnesota statutes and SBI policy.

(a) Currently, the SBI prohibits investment in American Home Products (AHP) and in corporations which conduct their business primarily in the alcohol and tobacco industries.

(b) In March 1989, the SBI adopted a resolution which requires the SBI to restrict its holdings in companies that do business in South Africa.

The SBI maintains a list of prohibited and restricted stocks. This list is updated and provided to managers on a monthly basis.

5. PERFORMANCE EVALUATION

Manager performance will be evaluated according to the guidelines established in the SBI's Manager Continuation Policy. These guidelines assist the SBI in its decisions concerning retention and termination of investment managers.

6. COMMUNICATION

The SBI requires its investment managers to communicate with SBI staff on a regular basis.

(a) On a semi-annual basis, managers are expected to meet with staff to review the results of the manager's investment decision-making process. In reviewing past and current investment strategies and performance, the manager is expected to present the analysis relative to the benchmark portfolio.

(b) On a monthly basis, managers are expected to provide SBI staff with a status report pertaining to the status of accounts, assets under management, and relevant personnel and ownership changes.

7. PROXY VOTING

The SBI is responsible for proxy voting.

8. FUTURE MODIFICATIONS

The SBI reserves the right to modify these investment guidelines at any time. Managers will be notified in advance of changes to the investment guidelines.

Revised: March 1989

ACTIVE EQUITY MANAGERS

Value of Active Management Reports

First Quarter 1990

Common stock manager returns are evaluated against the performance of customized indices constructed to represent the managers' specific investment approaches. These custom indices are commonly referred to as "benchmark portfolios." The benchmark portfolios take into account the equity market forces that at times favorably or unfavorably impact certain investment styles. Thus, benchmark portfolios are the appropriate bogeys against which to judge the managers' performance.

Manager performance relative to benchmarks is evaluated on a quarterly basis by the Equity Manager Committee of the Investment Advisory Council.

Staff Recommendations
Staff recommends the following actions concerning manager status:

- Renew contracts for Alliance, Forstmann, IDS, IAI, Lieber, and Waddell & Reed.

Managers	Market Value 3/31/90 (Thousands)	Quarter Ending 3/31/90		Year Ending 3/31/90		Annualized Five Years Ending 3/31/90		Annualized Since 1/1/84	
		Actual	Bmrk	Actual	Bmrk	Actual	Bmrk	Actual	Bmrk
Alliance	$408,433	-2.6%	-0.9%	25.7%	14.6%	21.3%	12.8%	17.2%	12.2%
Concord	110,360	-1.2	-3.8	10.7	12.2				
Forstmann	197,433	-2.7	-1.3	6.7	11.8	14.8	12.6	13.5	12.1
Franklin	115,072	-3.2	-3.6	15.5	9.8				
IDS	180,812	0.3	-2.7	24.2	14.6	17.2	15.7	16.1	14.7
IAI	93,463	-2.9	-2.0	16.4	16.0	14.3	16.1	13.8	15.0
Lieber & Co.	110,674	-5.3	-3.9	5.1	6.5	12.0	11.3	11.6	10.5
Rosenberg	116,703	-2.4	-3.3	17.1	14.8				
Sasco	112,670	-2.0	-1.2	13.2	11.6				
Waddell & Reed	179,376	-0.3	-0.3	20.0	11.0	14.7	13.0	12.4	11.1
Aggregate Active*		-2.2	-2.0	16.4	12.6	16.3	13.8	15.1	13.1
Wilshire 5000		-3.5%		16.0%		16.0%		14.9%	

* Historical performance reflects composite of current managers only.

ALLIANCE CAPITAL MANAGEMENT

PORTFOLIO MANAGER: Jack Koltes **ASSETS UNDER MANAGEMENT: $408,443,079**

INVESTMENT PHILOSOPHY

Alliance searches for companies likely to experience high rates of earnings growth, on either a cyclical or secular basis. Alliance has invested in a wide range of growth opportunities from small, emerging growth to large, cyclically sensitive companies. There is no clear distinction on the part of the firm as to an emphasis on one particular type of growth company over another. However, the firm's decision-making process appears to be much more oriented toward macroeconomic considerations than is the case with most other growth managers. Accordingly, cyclical earnings prospects, rather than secular, appear to play a larger role in terms of stock selection. Alliance is not an active market timer, rarely raising cash above minimal levels.

QUANTITATIVE EVALUATION

Performance Relative to Benchmark

	Latest Quarter	Latest Year	Since 1/1/84 Annualized
Alliance Capital Actual	-2.6%	25.7%	17.2%
Alliance Capital Benchmark	-0.9	14.6	12.2

(See Value of Active Management graph below)

QUALITATIVE EVALUATION

(Reported By Exception)

The firm's exceptional strengths are:

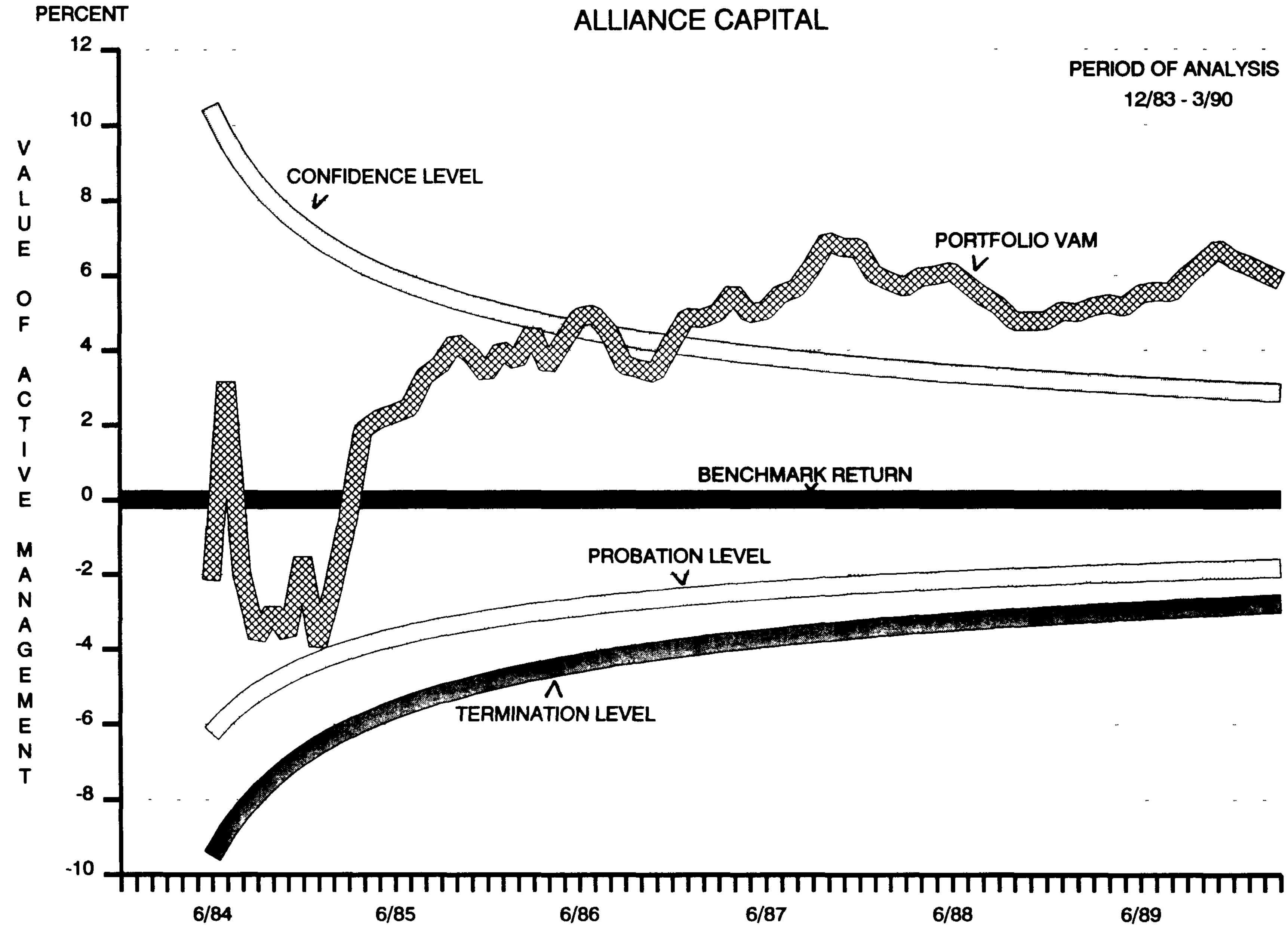
- Highly successful and experienced professionals.
- Organizational continuity and strong leadership.
- Well-acquainted with needs of large clients.
- Investment style consistently and successfully applied over a variety of market environments.

STAFF RECOMMENDATIONS

Renew annual contract for period beginning 7/1/90.

VALUE OF ACTIVE MANAGEMENT REPORT

ALLIANCE CAPITAL



FORSTMANN LEFF ASSOCIATES

PORTFOLIO MANAGER: Joel Leff **ASSETS UNDER MANAGEMENT: $197,432,698**

INVESTMENT PHILOSOPHY

Forstmann Leff is a classic example of a "rotational" manager. The firm focuses almost exclusively on asset mix and sector weighting decisions. Based upon its macroeconomic outlook, the firm will move aggressively into and out of asset classes and equity sectors over the course of a market cycle. The firm tends to purchase liquid, large capitalization stocks. Forstmann Leff will make sizable market timing moves at any point during a market cycle.

QUANTITATIVE EVALUATION

Performance Relative to Benchmark

	Latest Quarter	Latest Year	Since 1/1/84 Annualized
Forstmann-Leff Actual	-2.7%	6.7%	13.5%
Forstmann-Leff Benchmark	-1.3	11.8	12.1

(See Value of Active Management graph below)

QUALITATIVE EVALUATION

(Reported By Exception)

Current concerns are:

- Relatively high turnover among firm's professionals.

This issue, while not serious, remains outstanding.

The firm's exceptional strengths are:

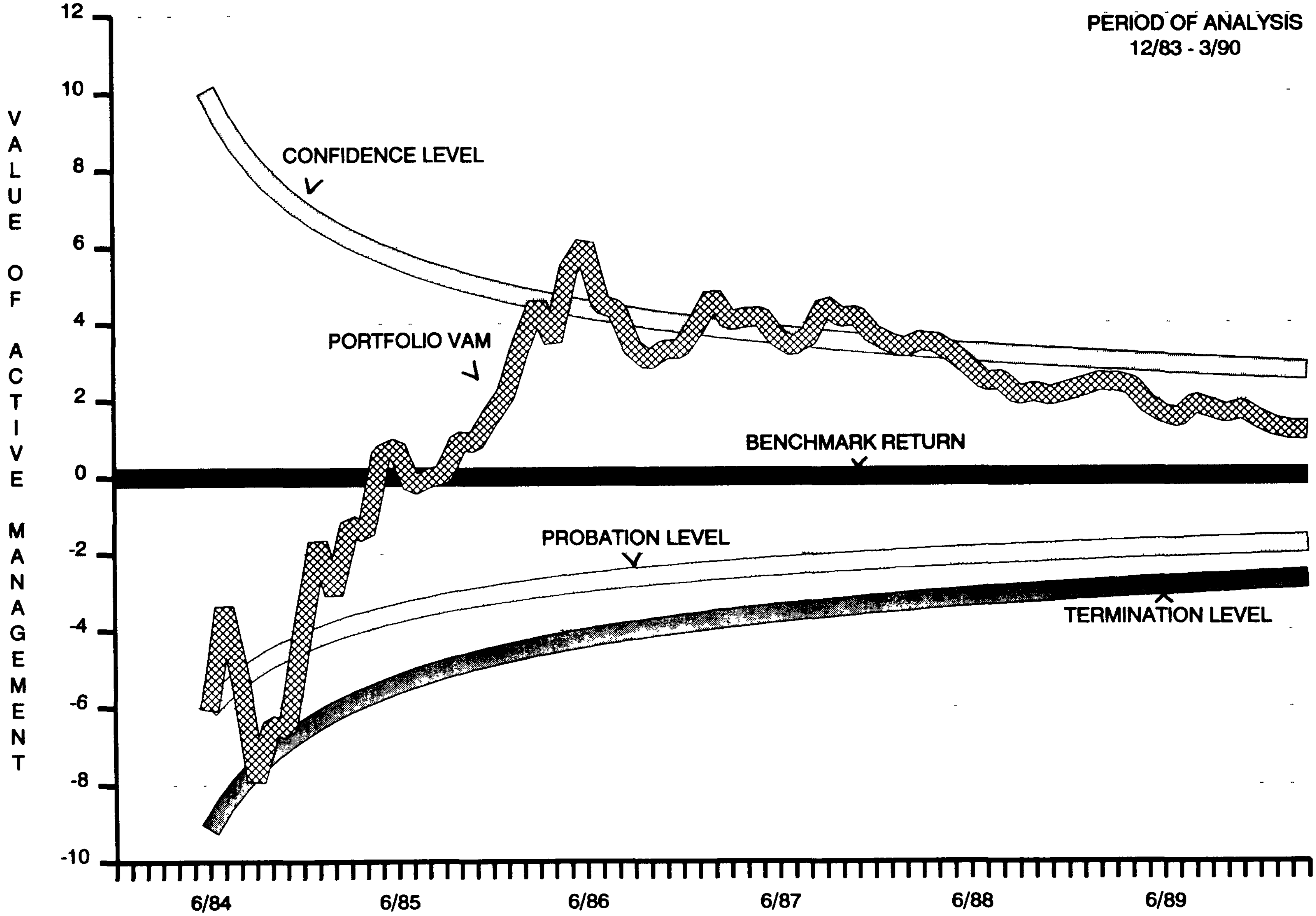
- Highly successful and experienced professionals.
- Investment style consistently and successfully applied over a variety of market environments.
- Well-acquainted with needs of large clients.

STAFF RECOMMENDATIONS

Renew annual contract for period beginning 7/1/90.

VALUE OF ACTIVE MANAGEMENT REPORT

FORSTMANN LEFF



IDS ADVISORY

PORTFOLIO MANAGER: Mitzi Malevich

ASSETS UNDER MANAGEMENT: $180,811,627

INVESTMENT PHILOSOPHY

IDS employs a "rotational" style of management, shifting among industry sectors based upon its outlook for the economy and the financial markets. The firm emphasizes primarily sector weighting decisions. Moderate market timing is also used. Over a market cycle IDS will invest in a wide range of industries. It tends to buy liquid, large capitalization stocks. While IDS will make occasional significant asset mix shifts over a market cycle, the firm is a less aggressive market timer than most rotational managers.

QUANTITATIVE EVALUATION

Performance Relative to Benchmark

	Latest Quarter	Latest Year	Since 1/1/84 Annualized
IDS Advisory Actual	0.3%	24.2%	16.1%
IDS Advisory Benchmark	-2.7%	14.6	14.7

(See Value of Active Management graph below)

QUALITATIVE EVALUATION

(Reported By Exception)

Current concerns are:

- Growth plan not in place.
- Account load for portfolio managers is large.

These items, while not serious, should continue to be monitored.

The firm's exceptional strengths are:

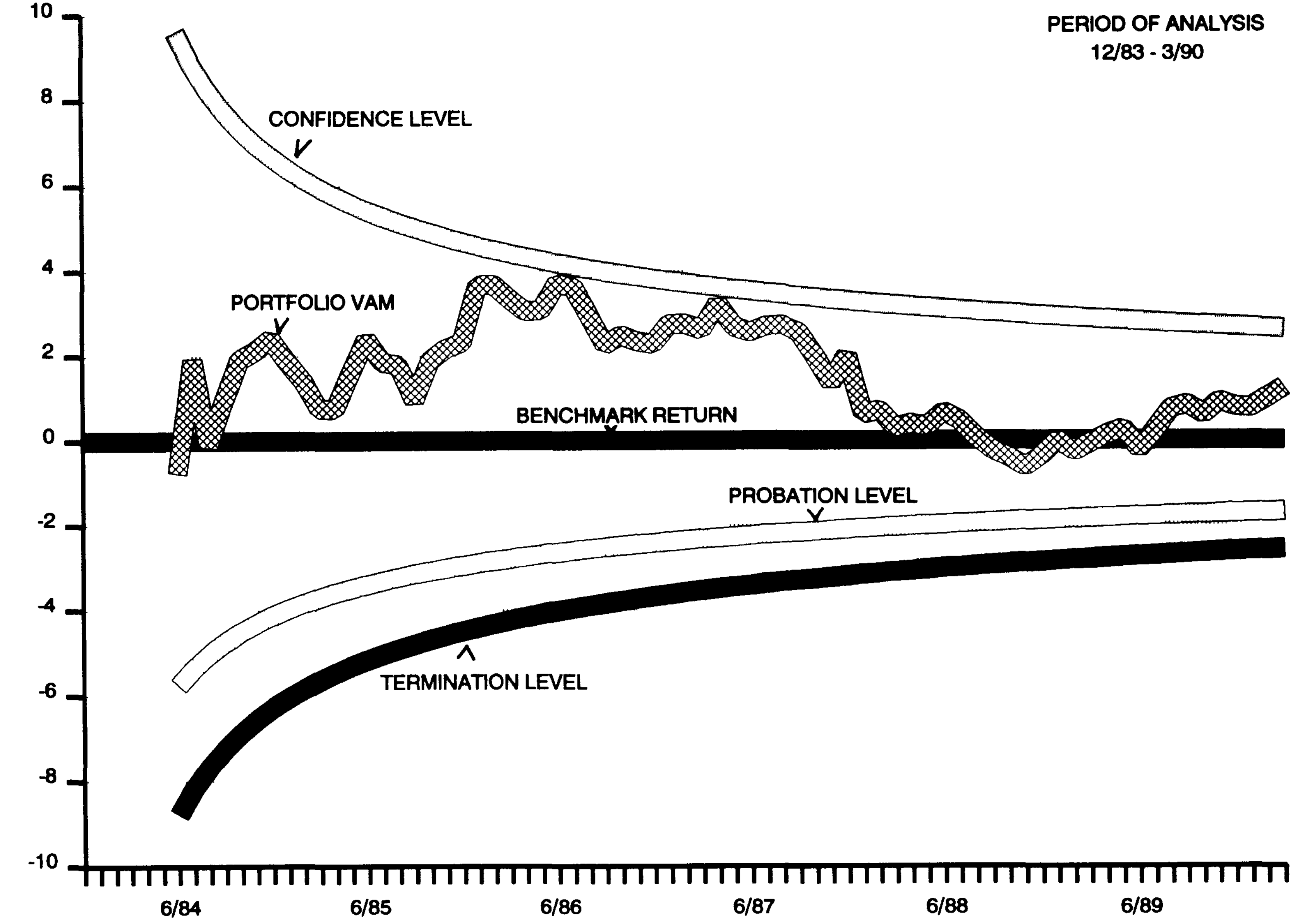
- Investment style consistently and successfully applied over a variety of market environments.

STAFF RECOMMENDATIONS

Renew annual contract for period beginning 7/1/90.

VALUE OF ACTIVE MANAGEMENT REPORT

IDS ADVISORY



INVESTMENT ADVISERS

PORTFOLIO MANAGER: Charles Webster

ASSETS UNDER MANAGEMENT: $93,462,511

INVESTMENT PHILOSOPHY

Investment Advisers is a "rotational" manager. Its macroeconomic forecasts drive its investment decision-making. The firm emphasizes market timing and sector weighting decisions. Investment Advisers will invest in a wide range of industries over a market cycle. It tends to hold liquid, medium to large capitalization stocks. The firm is an active market timer, willing to make gradual but significant asset mix shifts over a market cycle.

QUANTITATIVE EVALUATION

Performance Relative to Benchmark

	Latest Quarter	Latest Year	Since 1/1/84 Annualized
IAI Actual	-2.9%	16.4%	13.8%
IAI Benchmark	-2.0	16.0	15.0

(See Value of Active Management graph below)

QUALITATIVE EVALUATION

(Reported By Exception)

Current concerns are:

- Growth plan not in place.
- Lack of familiarity with needs of large institutional clients.

The items, while not serious, should continue to be monitored.

The firm's exceptional strengths are:

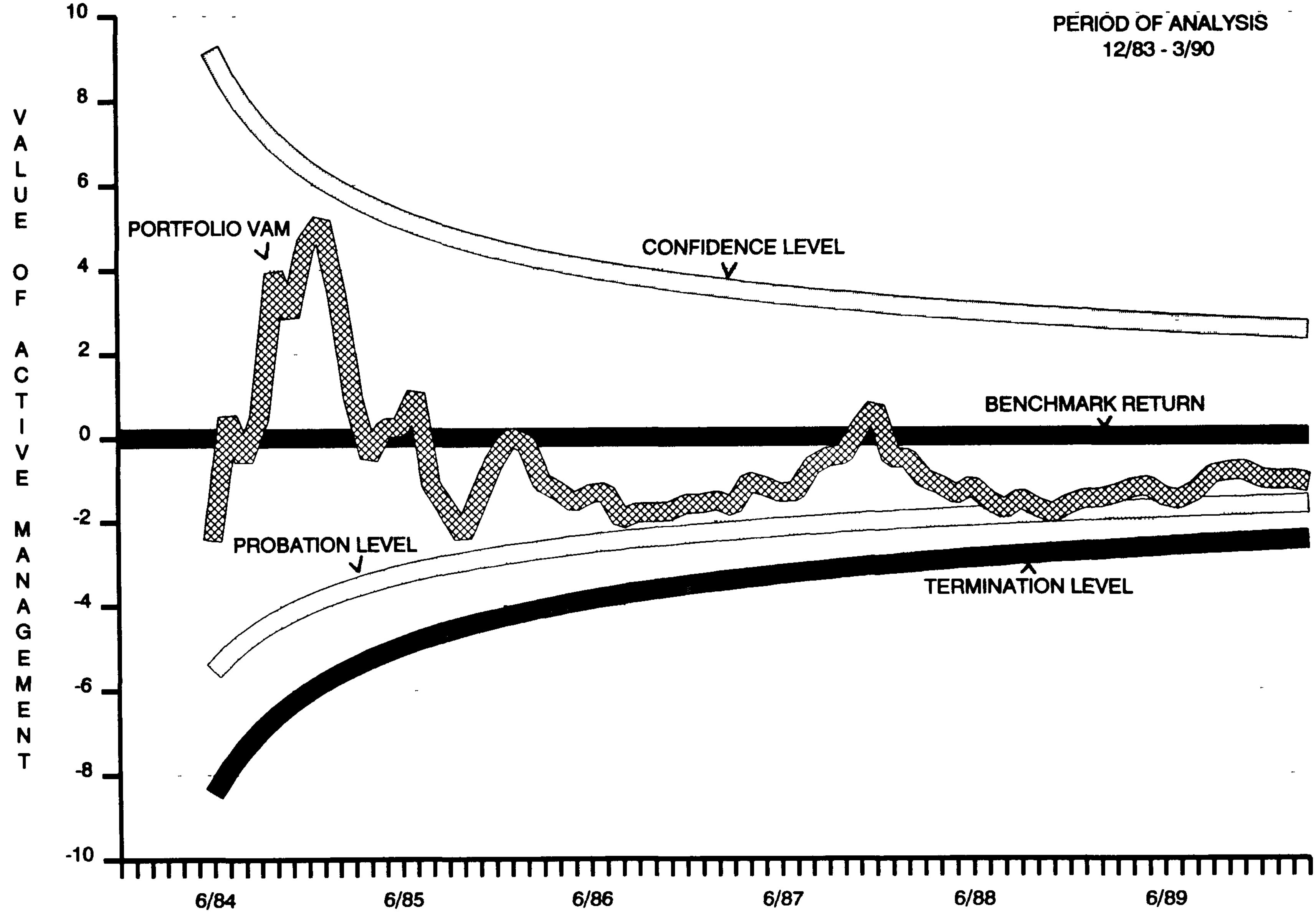
- Investment style consistently applied over a variety of market environments.

STAFF RECOMMENDATIONS

Renew annual contract for period beginning 7/1/90.

VALUE OF ACTIVE MANAGEMENT REPORT

INVESTMENT ADVISERS



LIEBER & COMPANY

PORTFOLIO MANAGER: Stephen Lieber, Nola Falcone

ASSETS UNDER MANAGEMENT: $110,674,200

INVESTMENT PHILOSOPHY

Lieber and Co. seeks to identify investment concepts that are either currently profitable, or likely to become so in the near future, yet whose prospects are not reflected in the stock prices of the companies associated with the concepts. The investment concepts upon which the firm focuses are related to both macroeconomic trends and specific product developments within particular industries or companies. Stocks purchased by Lieber tend to be those of well-managed, high growth and high return on equity, small-to-medium sized companies. The stocks may be undervalued due to the failure of investors to recognize fully either the value of new products or a successful turnaround situation. Particularly attractive to Lieber are small-to-medium size takeover candidates. The firm generally is fully invested, with any cash positions the result of a lack of attractive investment concepts.

QUALITATIVE EVALUATION

(Reported by Exception)

Current concerns are:

- Firm is unfamiliar with needs of large clients.

This item, while not serious, warrants additional monitoring.

The firm's exceptional strengths are:

- Organizational continuity and strong leadership.
- Attractive, unique investment approach.
- Investment style consistently and successfully applied over a variety of market environments.
- Extensive securities research process.

QUANTITATIVE EVALUATION

Performance Relative to Benchmark

	Latest Quarter	Latest Year	Since 1/1/84 Annualized
Lieber & Co. Actual	-5.3%	5.1%	11.6%
Lieber & Co. Benchmark	-3.9	6.5	10.5

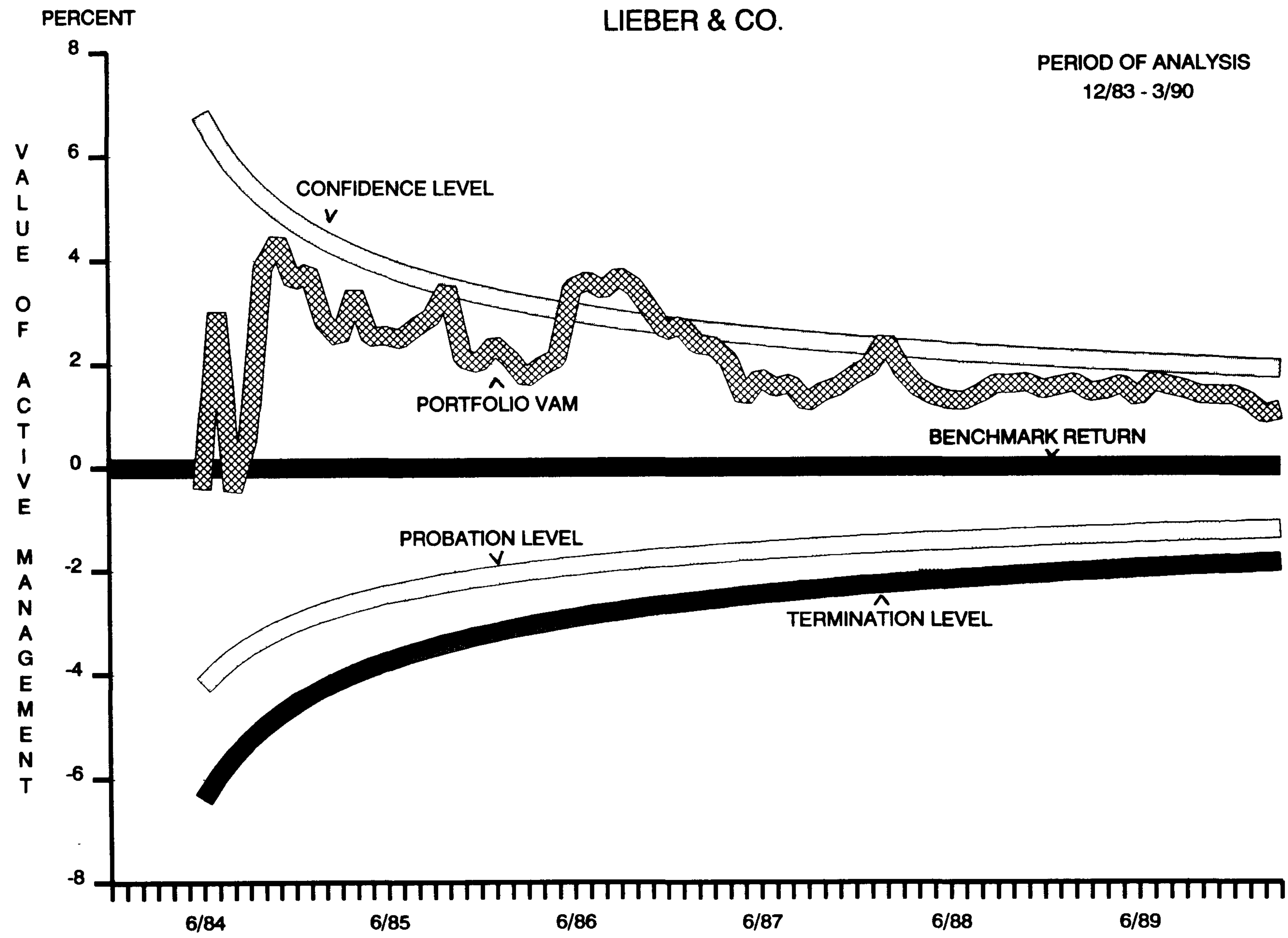
(See Value of Active Management graph below)

STAFF RECOMMENDATIONS

Renew annual contract for period beginning 7/1/90.

VALUE OF ACTIVE MANAGEMENT REPORT

LIEBER & CO.



WADDELL & REED

PORTFOLIO MANAGER: Henry Herrman

ASSETS UNDER MANAGEMENT: $179,375,975

INVESTMENT PHILOSOPHY

Waddell & Reed focuses its attention primarily on smaller capitalization growth stocks, although the firm has been very eclectic in its choice of stocks in recent years. However, the firm has demonstrated a willingness to make significant bets against this investment approach for extended periods of time. The firm is an active market timer and will raise cash to extreme levels at various points in the market cycle.

QUALITATIVE EVALUATION

(Reported By Exception)

The firm's exceptional strengths are:

- Highly successful and experienced professionals.

QUANTITATIVE EVALUATION

Performance Relative to Benchmark

	Latest Quarter	Latest Year	Since 1/1/84 Annualized
Waddell & Reed Actual	-0.3%	20.0%	12.4%
Waddell & Reed Benchmark	-0.3	11.0	11.1

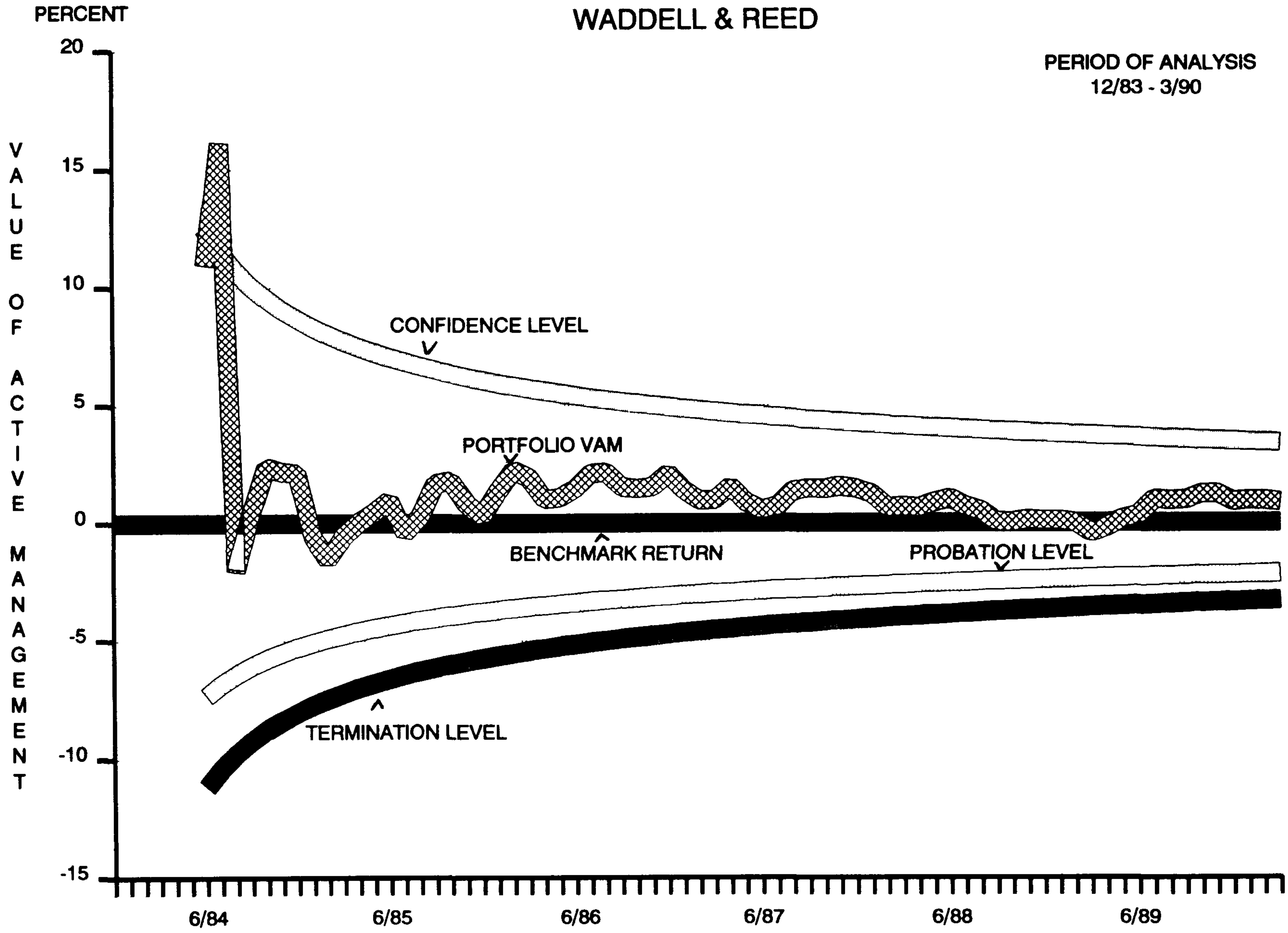
(See Value of Active Management graph below)

STAFF RECOMMENDATIONS

Renew annual contract for period beginning 7/1/90.

VALUE OF ACTIVE MANAGEMENT REPORT

WADDELL & REED



CONCORD CAPITAL MANAGEMENT

PORTFOLIO MANAGER: Bob Boldt

ASSETS UNDER MANAGEMENT: $110,360,311

INVESTMENT PHILOSOPHY

Concord is an opportunistic theme investor that does not limit itself to any particular group of stocks, avoiding preconceptions about where value currently lies. Concord believes that the marketplace is generally efficient but that there exist isolated opportunities. These opportunities are due to biases inherent in the traditional approaches that the majority of the investment profession uses to search for investment opportunities. Concord's non-traditional approach allows them to discover these opportunities early and to capture the total appreciation of the undervalued stocks. Concord's goal is to remain as fully invested as possible, therefore, they rarely raise cash above a minimal level.

QUALITATIVE EVALUATION

(Reported By Exception)

The firm's exceptional strengths are:

- Highly successful and experienced professionals.
- Investment style consistently and successfully applied over a variety of market environments.

QUANTITATIVE EVALUATION

Performance Relative to Benchmark

	Latest Quarter	Latest Year	Since 4/1/89 Annualized
Concord Capital Actual	-1.2%	10.7%	10.7%
Concord Capital Benchmark	-3.8	12.2	12.2

STAFF RECOMMENDATIONS

No action required.

FRANKLIN PORTFOLIO ASSOCIATES

PORTFOLIO MANAGER: John Nagorniak **ASSETS UNDER MANAGEMENT: $115,072,239**

INVESTMENT PHILOSOPHY

The firm's investment decisions are quantitatively driven and controlled. The firm believes that consistent application of integrated multiple valuation models produces superior investment results. The firm's stock selection model is a composite model comprised of thirty (30) valuation measures each of which falls into one of the following groups: fundamental momentum, relative value, future cash flow, and economic cycle analysis. The firm believes that a multi-dimensional approach to stock selection provides greater consistency than reliance on a limited number of valuation criteria. The firm attributes its value-added to its stock picking ability. Franklin's portfolio management process focuses on buying and selling the right stock rather than attempting to time the market or pick the right sector or industry groups. The firm will always remain fully invested.

QUALITATIVE EVALUATION

(Reported by Exception)

The firm's exceptional strengths are:

- Familiar with the needs of large institutional clients.
- Firm's investment approach has been consistently applied over a number of market cycles.

QUANTITATIVE EVALUATION

Performance Relative to Benchmark

	Latest Quarter	Latest Year	Since 4/1/89 Annualized
Franklin Actual	-3.2%	15.5%	15.5%
Franklin Benchmark	-3.6	9.8	9.8

STAFF RECOMMENDATIONS

No action required.

ROSENBERG INSTITUTIONAL EQUITY MANAGEMENT

PORTFOLIO MANAGER: Ken Reid **ASSETS UNDER MANAGEMENT: $116,702,508**

INVESTMENT PHILOSOPHY

Rosenberg Institutional Equity Management believes the market is inefficient in the relative valuation of individual companies within groups of similar companies. Rosenberg uses quantitative techniques to identify and purchase undervalued stocks. The firm's valuation system, as embodied in several computer programs, analyzes accounting data on over 3,500 companies. Unlike traditional analysis which assigns an entire company to one industry, Rosenberg compares each company's separate business segments with similar business operations of other companies. These separate valuations are then integrated into a single valuation for the total company. The difference between Rosenberg's valuation and the current market price is the expected profit opportunity. Stocks with large positive profit opportunity are candidates for purchase. The firm does not strive to outperform its benchmark by timing the market or by "betting" on factors. The firm will always remain fully invested.

QUALITATIVE EVALUATION

(Reported by Exception)

The firms's exceptional strengths are:

- Attractive, unique investment approach.
- Highly successful and strong leadership.

QUANTITATIVE EVALUATION

Performance Relative to Benchmark

	Latest Quarter	Latest Year	Since 4/1/89 Annualized
Rosenberg Actual	-2.4%	17.1%	17.1%
Rosenberg Benchmark	-3.3	14.8	14.8

STAFF RECOMMENDATIONS

No action required.

SASCO CAPITAL INC.

PORTFOLIO MANAGER: Bruce Bottomley **ASSETS UNDER MANAGEMENT: $112,669,877**

INVESTMENT PHILOSOPHY

Sasco is a long term investor that concentrates exclusively on stock selection. Sasco looks for companies that are selling at a discount to both their asset value and future earnings power. Sasco analyzes a corporation's individual business segments and invests in those that are undergoing major fundamental and structural change to increase their value. Sasco does not attempt to time the market. The firm strives to remain fully invested at all times.

QUALITATIVE EVALUATION
(Reported By Exception)

The firm's exceptional strengths are:

- Investment style consistently and successfully applied over a variety of market environments.
- Attractive, unique investment approach.

QUANTITATIVE EVALUATION

Performance Relative to Benchmark

	Latest Quarter	Latest Year	Since 4/1/89 Annualized
Sasco Capital Actual	-2.0%	13.2%	13.2%
Sasco Capital Benchmark	-1.2	11.6	11.6

STAFF RECOMMENDATIONS

No action required.

Tab G

EXECUTIVE DIRECTOR
HOWARD J. BICKER

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT

Room 105, MEA Building
55 Sherburne Avenue
St Paul, MN 55155
Tel (612) 296-3328
FAX (612) 296-9572

May 25, 1990

TO: Members, State Board of Investment
Members, Investment Advisory Council

FROM: Fixed Income Manager Committee

SUBJECT: Committee Report

The IAC Fixed Income Manager Committee met on May 11, 1990 and reviewed the following items:

- o Report on Feasibility of Performance-Based Fees for Active Bond Managers
- o Review of Manager Performance
- o Review of Manager Investment Guidelines
- o In-depth Review of Morgan Stanley
- o Renewal of Contracts

INFORMATION ITEMS:

1) Report of Feasibility of Performance-Based Fees

The Management Plan for FY 90 identified a need to consider performance-based fees (PBF's) for the active bond managers. A report from staff on this issue is in Attachment A.

The report concludes that PBF's for active bond managers are not appropriate at this time. The primary deterrents are:

- o lack of accurate pricing.
- o absence of third party verification.
- o disparities in return calculations.

The Committee concurs with the staff conclusion on PBF's and has asked staff to direct its research efforts toward a broader review of the current fixed income program. Over the next year staff will work with the Committee on two broad areas:

- o reviewing the asset class target (Salomon BIG vs. longer duration target).
- o reviewing the management structure (broad based vs. specialized active managers).

2) Review of Enhanced Index Manager Performance

Both the enhanced index managers outperformed the Salomon Broad Investment Grade (BIG) Index for the quarter ending March 31, 1990 (Lincoln -0.71%, Fidelity -0.63%, Salomon BIG -0.76%).

Since inception in July 1988, both managers have outperformed the index by small increments (Lincoln 2 basis points, Fidelity 3 basis points). Staff is satisfied with the performance of both managers to date.

3) Review of Active Manager Performance

The Committee reviewed the performance reports for the active bond managers. A copy of the value of active management (VAM) report for each manager is at the end of this tab section.

The active manager group underperformed its aggregate benchmark for the quarter and the year but outperformed the aggregate benchmark for the last five years and since inception. The active group underperformed this quarter because all the managers had longer than normal durations when interest rates increased.

4) Review of Manager Guidelines

The Committee reviewed the active and enhanced index bond manager investment guidelines. The guidelines are used to govern and evaluate the investment actions of the bond managers and are part of the investment management agreement between the SBI and manager.

The original guidelines for active managers were established in 1984 when the external active manager program was initiated. The guidelines were revised last year to incorporate the role of benchmark portfolios and the evaluation of managers as provided in the Board's Manager Continuation Policy. The guidelines for the semi-passive managers were established in 1988.

Staff does not recommend changes to either the active manager or enhanced index manager guidelines at this time. The Committee concurs with the staff recommendation. Copies of the guidelines are in Attachments B,C, and D.

ACTION ITEMS:

1) In-Depth Review of Morgan Stanley

At its last meeting, the Committee supported a recommendation by staff that it conduct an in-depth review of Morgan Stanley.

Staff's qualitative review of Morgan Stanley raises questions about the appropriateness of Morgan's current benchmark. Staff analysis shows that the Salomon BIG Index may be a more appropriate performance standard than Morgan's current benchmark.

Quantitative analysis shows that Morgan Stanley has underperformed its benchmark and the Salomon BIG since the firm was retained by the SBI in 1984. Most of the underperformance can be explained by incorrect duration bets based on anticipated interest rate moves.

Based on its review of Morgan Stanley, staff concludes that the firm be terminated. The qualitative and quantitative concerns have caused staff to lose its confidence in Morgan Stanley's ability to carry out its performance objectives in the future. The staff analysis that led to this recommendation is contained in Attachment E. The Committee reviewed the analysis and concurs.

RECOMMENDATION:

The Committee recommends that the SBI's relationship with Morgan Stanley be terminated. Further, the Committee recommends that the assets be transferred to Western Asset Management.

2) Renewal of Manager Contracts

All active and semi-passive bond manager contracts expire on June 30, 1990. Based on qualitative and quantitative evaluations, the Committee concurs with a staff recommendation to renew all contracts except Morgan Stanley's.

RECOMMENDATION:

The Committee recommends that the Board authorize the executive director, with assistance from SBI legal counsel, to negotiate and execute contract extensions with:

- Investment Advisers
- Lehman Management
- Miller Anderson
- Western Asset Management.
- Fidelity Management
- Lincoln Capital

ATTACHMENT A

EXECUTIVE DIRECTOR
HOWARD J. BICKER

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT

Room 105, MEA Building
55 Sherburne Avenue
St Paul, MN 55155
Tel (612) 296-3328
FAX (612) 296-9572

May 11, 1990

TO: IAC Fixed Income Manager Committee

FROM: Doug Gorence
Manager, External Investments

SUBJECT: Feasibility of Performance-Based Fees for Active Bond Managers

The FY 90 Management Plan identified a need to review the feasibility of implementing performance-based fees (PBF's) for the active bond managers. At this time, staff recommends against the use of PBF's for the current group of active bond managers.

BACKGROUND

The SBI introduced benchmark portfolios for its active stock managers in FY 1986. The development of PBF's for stock managers followed in FY 1987. When benchmark portfolios were adopted for the active bond managers in FY 1988 and 1989, it seemed natural to consider expanding PBF's to the fixed income manager group as well.

As staff researched various PSF structures, a number of issues arose which make implementation difficult or impractical. The remainder of this memo reviews these issues.

IMPLMENTATION ISSUES

- o Lack of Accurate Pricing

  Stock values reflect the actual prices paid for stocks traded on the major exchanges (NYSE, AMEX, NASDAQ). As a result, portfolio values reflect current prices and the returns for benchmarks and actual portfolios can be calculated with a high degree of accuracy.

Bond values rarely reflect actual trade prices. Rather, they are computed through an estimation process. The estimation process can result in significant discrepancies between the manager's view of the price versus the pricing service utilized by the SBI's custodian bank. For managers investing in collateralized mortgage obligations (CMO's) and other less liquid securities, pricing discrepancies are frequent and often quite large.

o Absence of Third Party Verification

Generally, bond benchmarks are comprised of subcomponents of a broad market index such as the Salomon Broad Investment Grade (BIG) Bond Index. The component returns are computed by the sponsoring brokerage firm and reported to the manager. The manager then calculates and reports the return on its benchmark. As a result, the benchmark returns are not verified by a third party and the oversight process is more difficult.

o Difficulty in Reaching Agreement on Return Calculations

Accurate and fair portfolio and benchmark returns are essential for PBF's to work properly. Given the pricing difficulties cited above and the lack of independent verification of benchmark returns, legitimate disagreements are likely to arise between the manager and the plan sponsor/SBI.

Resolving pricing disputes under the current fee arrangement is often difficult and time consuming for the manager, custodian bank and SBI staff. PBF's would undoubtedly exacerbate these disputes since a difference in the price of a single security could make a significant difference in the PBF calculation.

The combination of these issues has made PBF's unattractive to most plan sponsors. Currently, staff is aware of only one large pension fund that uses PBF's for active bond managers.

CONCLUSION

Staff does not recommend implementation of PBF's for active bond managers at this time. Staff believe that the implementation issues cited above cannot be resolved satisfactorily in the near term given the current structure of the bond manager group.

Staff would prefer to concentrate its efforts on a broader review of the current fixed income program. Staff would like to work with the Committee to develop and evaluate proposed changes to the current structure. Staff envisions this process to include:

- o Reviewing the asset class target for fixed income assets in the Basic Retirement Funds. Is the current asset class target consistent with the Board's deflation and diversification objectives or should a longer duration index be used?

- o Reviewing the current investment management structure. Should the Board seek more specialized managers or continue with the current broad-based approach?

Staff plans to research these issues in the next year. After these issues are resolved, it may be appropriate to reconsider the application of performance-based fees for active bond managers.

ATTACHMENT B

MINNESOTA STATE BOARD OF INVESTMENT

INVESTMENT GUIDELINES
EXTERNAL ACTIVE FIXED INCOME MANAGERS

The investment actions of State Board of Investment (SBI) external active fixed income managers will be governed and evaluated by the following guidelines:

1. **RISK/RETURN OBJECTIVES**

   Each fixed income manager will be expected to produce portfolios which differ from the manager's benchmark portfolio in a manner consistent with their investment philosophy. These differences will be monitored on the key areas of duration, sector weighting, industry weighting, and coupon and company selection.

   Over time, each fixed income manager will be expected to deliver cumulative annualized returns after fees 25 to 50 basis points above a predetermined benchmark portfolio return. Excess returns should be commensurate with portfolio risk as measured by annualized standard deviation.

2. **ELIGIBLE INVESTMENTS**

   Each manager must provide and maintain a customized benchmark (normal) portfolio, agreed upon by both manager and SBI, for the purpose of performance evaluation and risk measurement. The benchmark portfolio provided by the manager must satisfy the following characteristics:

   (a) **Unambiguous.** The sectors and weights of sectors comprising the benchmark are clearly delineated.

   (b) **Investable.** The option is available to forego active management and simply hold the benchmark portfolio.

   (c) **Measurable.** It is possible to calculate the benchmark's return on a monthly basis.

   (d) **Appropriate.** The benchmark is consistent with the manager's investment style or biases.

   (e) **Reflective of current investment opinions.** The manager has current investment opinions (be they positive, negative, or neutral) on the securities which make up the benchmark.

   (f) **Specified in advance.** The benchmark must be available prior to the start of an evaluation period.

3. INVESTMENT PARAMETERS

The investment managers may hold fixed income instruments, fixed income index options and futures, and cash equivalents. The investments of each manager must satisfy the following criteria and constraints:

(a) Government obligations of the U.S., its agencies, Canada, its provinces, or U.S. sponsored organizations must be payable in U.S. dollars and comply with the provisions of SBI investment guidelines 11A.24 subdivision 2.

(b) U.S. and Canadian corporate obligations must be payable in U.S. dollars, be rated among the top four quality categories by a nationally recognized rating agency, and comply with all provisions of 11A.24 subdivision 3.

(c) Other obligations not specified in (a) or (b) must meet the provisions of 11A.24 subdivision 4.

(d) The use of fixed income index futures and options requires a separate commodities trading agreement between the SBI, manager, and CFTC clearing broker prior to commencement of trading.

(e) Total portfolio duration must stay within a 3 to 7 year band.

(f) Cash equivalent reserves shall be invested in the SBI's STIF fund, managed by its custodian bank.

Investment managers are not constrained regarding:

(1) transaction turnover
(2) use of covered call options as hedging devices
(3) liquidity requirements
(4) number of fixed income issues which must be held at any given point in time
(5) the percentage of assets held in cash reserves (subject to constraint(e))
(6) the use of fixed income index futures or options to adjust the effective total portfolio duration from 3 to 7 years.

4. PERFORMANCE EVALUATION

Manager performance will be evaluated according to the guidelines established in the SBI's Manager Continuation Policy. These guidelines assist the SBI in its decisions concerning retention and termination of investment managers.

5. COMMUNICATION

The SBI requires its investment managers to communicate with SBI staff on a regular basis.

(a) On a semi-annual basis, managers will meet with staff to review the results of the manager's investment decision-making process. In reviewing past and current investment strategies and performance, the manager is expected to present the analysis relative to the benchmark portfolio.

(b) On quarters between meetings, managers will call the SBI staff to review the results of the manager's investment decision-making process.

(c) On a monthly basis, managers will provide SBI staff with a status report pertaining to the status of accounts, assets under management, and relevant personnel and ownership changes.

6. FUTURE MODIFICATIONS

The SBI reserves the right to modify these investment guidelines at any time to insure that the managers, both individually and collectively, are in compliance with Minnesota statutes and SBI policy. Managers will be notified in advance of changes to the investment guidelines.

Revised: May 1989

MINNESOTA STATE BOARD OF INVESTMENT

LINCOLN CAPITAL
INVESTMENT GUIDELINES
EXTERNAL PASSIVE FIXED INCOME MANAGERS

The investment actions of Lincoln Capital for the Minnesota State Board of Investment (SBI) will be governed and evaluated by the following guidelines:

1. RISK/RETURN OBJECTIVES

The SBI expects Lincoln to develop and manage the index portfolio with characteristics similar to the Salomon Broad Investment Grade (BIG) index. The specific manager risk tolerances are specified below in the section on investment parameters. These parameters should generate only moderate tracking errors from index performance and are consistent with an enhanced index strategy.

The management objective is to provide a return above the Salomon index performance. The manager will be expected to generate returns of 10 to 25 basis points above the BIG index return on an annual basis.

2. ELIGIBLE INVESTMENTS

The investment managers may hold fixed income instruments, fixed income index options and futures, and cash equivalents. The investments of each manager must satisfy the following criteria and constraints:

(a) Government obligations of the U.S., its agencies, Canada, its provinces, or U.S. sponsored organizations must be payable in U.S. dollars and comply with the provisions of SBI investment guidelines 11A.24 subdivision 2.

(b) U.S. and Canadian corporate obligations must be payable in U.S. dollars, be rated among the top four quality categories by a nationally recognized rating agency, and comply with all provisions of 11A.24 subdivision 3.

(c) Other obligations not specified in (a) or (b) must meet the provisions of 11A.24 subdivision 4.

(d) The use of fixed income index futures and options requires a separate commodities trading agreement between the SBI, manager, and CFTC clearing broker prior to commencement of trading.

Investment managers are not constrained regarding:

(1) transaction turnover
(2) use of covered call options as hedging devices
(3) liquidity requirements
(4) number of fixed income issues which must be held at any given point in time

3. INVESTMENT PARAMETERS

The investment guidelines are expressed as "risk exposures." A risk exposure is the expected return differential between our portfolio and the index resulting from a 100 basis point change in any one of 54 variables. These variables include yield curve segments, total portfolio duration, quality spreads, sector spreads, coupon spreads, and mortgage issuer spreads. The guidelines are:

Risk Exposure

Description of Risk Variable	Sectors	Variables	Exposure
Individual Yield Curve Segment	Govt/Corp	20	.05
Group Yield Curve Segment	Govt/Corp	4	.03
Level of Yields	Govt/Corp/Mtg	1	.03
Coupon Spreads	Govt/Corp	2	.15
Individual Agency Spreads	Government	4	.15
Individual Corporate Quality Spreads	Corporate	4	.15
Individual Corporate Sector Spreads	Corporate	9	.15
Aggregate Corporate Spread Risk	Corporate	1	.30
Mortgage Coupon Sectors	Mortgage	3	.30
Mortgage Issuer Sectors	Mortgage	2	.30
Mortgage Maturity Sectors	Mortgage	3	.30
		54	

Index Duration

Salomon Broad Investment Grade Duration ± .10 year

4. COMMUNICATION

The SBI requires its investment managers to communicate with SBI staff on a regular basis.

(a) On a semi-annual basis, managers will meet with staff to review the results of the manager's investment decision-making process. In reviewing past and current investment strategies and performance, the manager is expected to present the analysis relative to Salomon BIG index.

(b) On quarters between meetings, managers will call the SBI staff to review the results of the manager's investment decision-making process.

(c) On a monthly basis, managers will provide SBI staff with a status report pertaining to the status of accounts, assets under management, and relevant personnel and ownership changes.

5. FUTURE MODIFICATIONS

The SBI reserves the right to modify these investment guidelines at any time to insure that Lincoln is in compliance with Minnesota statutes and SBI policy. Lincoln will be notified in advance of changes to the investment guidelines.

Revised: May 1989

MINNESOTA STATE BOARD OF INVESTMENT

FIDELITY MANAGEMENT TRUST
INVESTMENT GUIDELINES
EXTERNAL PASSIVE FIXED INCOME MANAGERS

The investment actions of Fidelity Management Trust for the Minnesota State Board of Investment (SBI) will be governed and evaluated by the following guidelines:

1. **RISK/RETURN OBJECTIVES**

   The SBI expects Fidelity to develop and manage the index portfolio with characteristics similar to the Salomon Broad Investment Grade (BIG) index. The specific manager risk tolerances are specified below in the section on investment parameters. These parameters should generate only moderate tracking errors from index performance and are consistent with an enhanced index strategy.

   The management objective is to provide a return above the Salomon index performance. The manager will be expected to generate returns of 10 to 25 basis points above the BIG index return on an annual basis.

2. **ELIGIBLE INVESTMENTS**

   The investment managers may hold fixed income instruments, fixed income index options and futures, and cash equivalents. The investments of each manager must satisfy the following criteria and constraints:

   (a) Government obligations of the U.S., its agencies, Canada, its provinces, or U.S. sponsored organizations must be payable in U.S. dollars and comply with the provisions of SBI investment guidelines 11A.24 subdivision 2.

   (b) U.S. and Canadian corporate obligations must be payable in U.S. dollars, be rated among the top four quality categories by a nationally recognized rating agency, and comply with all provisions of 11A.24 subdivision 3.

   (c) Other obligations not specified in (a) or (b) must meet the provisions of 11A.24 subdivision 4.

   (d) The use of fixed income index futures and options requires a separate commodities trading agreement between the SBI, manager, and CFTC clearing broker prior to commencement of trading.

   Investment managers are not constrained regarding:

   (1) transaction turnover

(2) use of covered call options as hedging devices
(3) liquidity requirements
(4) number of fixed income issues which must be held at any given point in time

3. INVESTMENT PARAMETERS

Sector Weighting Guidelines

	Percent in Salomon BIG Index (3/31/89)	Deviations/Range
Treasury	46.7%	± 15%
Agency	7.9	± 5
Corporates	18.4	± 5
Yankees	0.8	0, +5 (i.e. zero holdings is minimum)
Mortgage-Backed Securities	26.2	± 7.5

Yield Curve Guidelines (Governments Only)

Maturity years 0-4.99	29.8%	± 5%
4.99 - 9.99	11.8	± 10
10+	13.0	± 5

Corporate Credit Guidelines

AAA	2.7	0, +2.5% (i.e. zero holding is acceptable)
AA	6.2	± 5
A	6.0	± 5
BBB	4.3	0, +5 (i.e. zero holding is acceptable)

Proposed Holdings of Securities Outside Index

Other Securities (e.g. Futures, Options, Strips, CMOs, Medium-Term Notes, Deposit Notes, private mortgage pass-throughs)	0.0	+ 25%

Index Duration

Salomon Brothers Board Investment Grade Duration ± .10 year

4. COMMUNICATION

The SBI requires its investment managers to communicate with SBI staff on a regular basis.

(a) On a semi-annual basis, managers will meet with staff to review the results of the manager's investment decision-making process. In reviewing past and current investment strategies and performance, the manager is expected to present the analysis relative to the Salomon BIG index.

(b) On quarters between meetings, managers will call the SBI staff to review the results of the manager's investment decision-making process.

(c) On a monthly basis, managers will provide SBI staff with a status report pertaining to the status of accounts, assets under management, and relevant personnel and ownership changes.

5. FUTURE MODIFICATIONS

The SBI reserves the right to modify these investment guidelines at any time to insure that Fidelity is in compliance with Minnesota statutes and SBI policy. Fidelity will be notified in advance of changes to the investment guidelines.

Revised: May 1989

ATTACHMENT E

Detailed Review of

Morgan Stanley Asset Management

MORGAN STANLEY REVIEW

I. ORGANIZATION

A. OWNERSHIP

Morgan Stanley is a wholly-owned subsidiary of Morgan Stanley Inc., a New York based financial service holding company. Morgan Stanley Inc. is a privately held company whose managing directors and principals are active members of the firm.

B. PROFESSIONAL STAFF

The SBI's account is managed by Geoffrey Gettman. Mr. Gettman joined Morgan Stanley Asset Management Inc. in 1982 and was appointed Principal in January of 1987. Prior to that, Mr. Gettman was a Vice President at Fiduciary Trust Co. of New York from 1974 to 1983.

C. FIXED INCOME ASSETS UNDER MANAGEMENT
(Tax Exempt Discretionary)

FIXED INCOME ASSETS UNDER MANAGEMENT
($ MIL)

December 1984		December 1985		December 1986		December 1987		December 1988		June 1989	
# of Accts	Market Value	# of Accts	Market Value	# of Accts	Market Value	# of Accts	Market Value	# of Accts	Market Value	# of Accts	Market Value
36	$1,566	52	$2,555	71	$4,597	73	$3,886	76	$4,524	82	$5,625

Mr. Gettman manages 16 of these accounts worth $1.55 billion.

Morgan Stanley is limiting their growth by accepting only accounts of $50 million or larger.

D. PERSONNEL TURNOVER

No significant turnover has occurred since the SBI account's inception. The firm lost two high yield bond managers in 1988 who left to start their own firm. This did not impact management of the SBI's portfolio.

II. INVESTMENT PHILOSOPHY

Morgan Stanley's primary investment goal is the preservation of capital through consistent real returns. Morgan Stanley believes its conservative approach is best implemented by averaging 80% in short to intermediate maturity high quality securities. Large positions in maturities longer than ten years are considered risky and are held as temporary trading opportunities when the firm has confidence as to the trend of interest rates.

Issue selection is of secondary importance to the firm. In the short run, Morgan Stanley tends to avoid moving back and forth between qualities and sectors. Rather, the firm prefers to make significant intermediate-term bets in specific sectors of the market in which it believes persistent valuation anomalies are present. In addition, the firm will make occasional swaps within or between sectors to capture temporary valuation discrepancies.

Generally, Morgan Stanley has followed this stated investment philosophy.

III. BENCHMARK PORTFOLIO CONSTRUCTION PROCESS

Morgan's benchmark was formed with assistance from Salomon Bros., a broker-dealer. It is based on historical data, including investments over a period of 10 years.

The following table shows Morgan's benchmark sector breakdown compared to the Salomon BIG Index.

Treasuries By Maturity	Morgan Stanley	Salomon BIG Index	Over/Under +/-
1 - 2 years	0.0%	12.1%	-12.1%
2 - 3 years	10.0%	7.6	+ 2.4
3 - 4 years	10.0	5.9	+ 4.1
4 - 5 years	15.0	4.3	+10.7
5 - 6 years	10.0	3.3	+ 6.7
6 - 7 years	5.0	3.2	+ 1.8
7+	0.0	18.4	-18.4
Total	50.0%	54.8%	- 4.8%

Corporates By Maturity	Morgan Stanley	Salomon BIG Index	Over/Under +/-
1 - 3 years	0.0%	2.0%	- 2.0%
3 - 4 years	2.0	1.1	+ 0.9
4 - 5 years	7.0	1.7	+ 5.3
5 - 6 years	3.0	0.7	+ 2.3
6 - 7 years	3.0	0.9	+ 2.1
7+	0.0	13.1	-13.1
Total	15.0%*	19.5%	- 4.5%

Mortgages By Effective Duration	Morgan Stanley	Salomon BIG Index	Over/Under +/-
0 - 3 years	10.0%	3.2%	+ 6.8%
3 - 4 years	15.0	4.1	+10.9
4 - 5 years	10.0	9.7	+ 0.3
5+	0.0	8.7	- 8.7
Total	35.0%	25.7%	+ 9.3%

*** The following categories are excluded from the Morgan Stanley corporate benchmark:**

AAA's	Phones
BBB's	Banks
Utilities	Yankees

Morgan's actual portfolio averages 37% Governments, 15% Corporates and 42% Mortgages. Morgan has tried to reflect this composition by forming a benchmark underweighted in Governments and Corporates and overweighted in Mortgages. Additionally, Morgan has tried to reflect their stated investment style by overweighting the benchmark with intermediate maturity securities vs. the Salomon BIG. Exhibits 1, 2 and 3 show Morgan's portfolio characteristics.

IV. PERFORMANCE ANALYSIS

A. Benchmark Explanatory Power

1. Comparison of portfolio returns to the benchmark and the Salomon BIG Index.

Since it reflects the managers investment style, a benchmark should better explain the manager's returns than a broad market index. The standard deviation of monthly returns and the information ratio are two measures of the benchmark's explanatory power.

- o The standard deviation of actual returns minus benchmark returns (VAM) should be less than the standard deviation of actual returns minus the index returns (EXM).
- o The information ratio (IR) is the ratio of the cumulative annualized VAM to the annual standard deviation of the VAM. The absolute value of the IR should be greater for the actual versus the index.

For Time Period 7/1/84 to 3/31/90	(VAM) Manager Actual vs. Benchmark	(EXM) Manager Actual vs. Salomon BIG Index
Cumulative Annualized Return	-0.657	-0.699
Annualized Standard Deviation	2.186	1.980
Information Ratio	-0.300	-0.353
Information Ratio t-statistic	-0.723	-0.850
Percentage of Months Return > 0	46.4%	47.8%
Correlation Coefficient	.9336	.9512

The following observations are made from the table above:

- o Morgan has underperformed both its benchmark and the Salomon BIG Index.
- o Morgan Stanley outperformed the Salomon BIG Index more often than its benchmark.
- o The standard deviation of the actual vs. benchmark is higher than for the actual vs. index.
- o The correlation coefficient for the portfolio vs. the benchmark is less than the coefficient for the portfolio vs the market.
- o The absolute value of the information ratio for actual vs. benchmark is lower than the actual vs. index. On a risk adjusted basis, the portfolio returns are lower relative to the manager's benchmark.
- o The higher EXM IR t-statistic suggests the portfolio's index comparison is more significant than the portfolio vs. benchmark.

These findings raise questions about the explanatory power provided by Morgan Stanley's benchmark and suggest that the market is better at explaining Morgan Stanley's past returns than its benchmark.

2. **Residual Correlations**

Correlations between the manager's actual portfolio returns versus those of the market (EXM), the manager's benchmark returns versus those of the market (MFT) and the manager's VAM are useful measures of benchmark explanatory power. A valid benchmark should exhibit a positive correlation between EXM and MFT. That is, when the manager's benchmark (or investment style) performs well relative to the market, the manager's portfolio also should do well versus the market. On the other hand, there should be no correlation between MFT and VAM with a valid benchmark. In this instance, the manager's ability to add value relative the benchmark should not be affected by the performance of the benchmark (i.e., style) relative to the market.

MORGAN STANLEY
Residual Correlation Matrix

	EXM	MFT	VAM
Portfolio vs. market (EXM)	1.000		
Benchmark vs. market (MFT)	-0.118	1.000	
Portfolio vs. benchmark (VAM)	0.945	-0.437	1.000

The Morgan Stanley benchmark exhibits a slightly negative correlation between EXM and MFT. The correlation between VAM and MFT is non-zero and negative. This analysis shows that the explanatory power of Morgan Stanley's benchmark is quite poor over the period analyzed. Therefore, a lower degree of reliability can be assigned to the conclusions drawn from performance analysis using Morgan Stanley's benchmark rather than a broad market average.

B. **Benchmark Performance Relative to the Salomon BIG Index**

On a cumulative basis Morgan Stanley's benchmark returns have lagged the broad market (see Exhibit 4).

The previous section showed that the Salomon BIG Index may be a better standard for Morgan Stanley that its current customized benchmark. Exhibit 5 shows a VAM chart comparing Morgan's performance to the Salomon BIG index. If this market index had been used as a benchmark, Morgan would be below the termination line established by the Manager Continuation Policy.

C. Portfolio Performance Attribution

Generally, active bond managers attempt to add value by:

- o adjusting portfolio duration in anticipation of interest rate moves.
- o over/under weighting various sectors to make gains from yield spreads.

Analysis indicates that Morgan Stanley has tried to add value using both of these methods.

- o Morgan's duration has ranged from 1.81 - 6.66 years. The firm, in general, has not anticipated interest rate movements well. They are a trend follower, changing duration significantly from month to month, often with little success.
- o Morgan has made sector bets primarily in mortgages, industrials and finance. Morgan appears to have made both correct and incorrect sector bets. Overall, these bets have not made a significant contribution to total fund performance.

DURATION ANALYSIS

Interest rate movements account for approximately 85% of bond returns. Morgan Stanley's duration range shows that they have tried to add value through interest rate anticipation bets, i.e. increasing (decreasing) duration when rates are expected to decline (rise). This analysis assumes that movements of the 10 year spot rates are representative of interest rate movements in general.

Exhibit 6 shows Morgan's actual duration, market duration, and the ten year spot rates. Exhibit 7 shows graphically how Morgan shifted duration as rates changed.

The following examples are observations based on examining the table and graph. These observations concentrate on duration and interest rate movements and illustrate how Morgan's reaction to interest rates has detracted from performance.

7/84-2/85 (falling rates)

During this time period, interest rates dropped from 13.42% to 11.06% in January, 1985 and increased to 11.77% during February. Morgan had a short duration during most of this period, but increased it in November after rates had dropped to 11.41%. When rate subsequently increased to 11.77% in February, Morgan was not positioned well. Morgan underperformed the market by 358 basis points during this time period.

2/85-9/86 (falling rates)

Interest rates declined from 11.77% to 6.94% during this time period. Through the end of April 1986, Morgan's duration stayed around the market duration, ranging from 3.79 to 4.42 years. After rates had declined to 7.3% in April 1986, they began raising the duration, reaching a high of 5.10 years by the end of September. The increase in duration was too late since most of the drop in interest rates had already occurred. Morgan underperformed the market by 14 basis points during this period.

9/86-10/87 (rising rates)

Interest rates rose from 6.94% to 8.82% with a high of 9.51% during this period. Morgan started with a duration of 5.10 years and kept shortening it as interest rates increased. This was the only period Morgan had the correct duration bet, outperforming the market by 322 basis points.

It should be noted that during this period, Morgan violated SBI guidelines requiring the duration to remain between 3 and 7 years. Morgan's duration dropped as low as 1.81 years in May 1987.

10/87-3/89 (fluctuating rates)

Interest rates began at 8.85% and ended at 9.0%, ranging from a low of 8.13% to a high of 9.12%. From November 1987 to February 1988, rates declined 82 basis points. However, Morgan held its duration around the market duration and did not take advantage of the drop. They increased duration to 5.49 years at the end of February 1987 and interest rates increased 72 basis by the end of April 1988. This and other duration decisions during this time period contributed to an underperformance of 327 basis points versus the market.

3/89-3/90 (falling rates)

Interest rates declined from 9.0% to 8.46% during this period. Rates fell from 9.0% to 7.91% between March 1989 and June 1989 but Morgan held its duration lower than the market and did not benefit from the rate decline. Subsequently, Morgan lengthened their duration reaching a high of 6.66 years in December 1989. However, rates increased 65 basis points while their duration was higher than the market. Morgan underperformed the market by 212 basis points during this period.

V. HISTORY OF SBI ACTION

- In July 1984, Morgan received $150 million.
- In March 1988, Morgan was placed on probation for insufficient effort to understand performance relative to a benchmark and earlier violations of SBI duration constraints.
- In July 1988, half of Morgan's portfolio ($112,810,000) was transfered to the index managers.
- In September 1988, Morgan was removed from probation after the firm reiterated their committment to the stated duration constraints.

VI. CONCLUSION

Staff concludes that SBI's relationship with Morgan Stanley should be terminated.

This review raises new questions about the appropriateness of Morgan's current benchmark. Staff analysis shows that the Salomon BIG Index better approximates Morgan's investment style than the current benchmark. However, over the full period analyzed Morgan Stanley has underperformed both its benchmark and the market. Most of the underperformance can be explained by incorrect duration bets based on anticipated interest rate moves. Further, staff has observed portfolio decisions inconsistent with the firm's stated investment philosophy.

The Board's Manager Continuation Policy does not require that the manager be terminated at this time. Normally, the manager would be placed on probation because of the concerns about its benchmark. However, this would be the second time in a period of two years that probationary status for qualitative reasons is necessary.

These qualitative concerns, combined with continued underperformance versus the firm's benchmark and the market, have caused the staff to lose its confidence in Morgan Stanley's ability to carry out its performance objectives in the future.

EXHIBIT 1

MORGAN STANLEY
SECTOR WEIGHTS

DATE	GOV'T	AGENCY	INDUST	UTILITY	FINANCE	TRAN	MBS	MISC	CASH
3/90	6%	4%	29%	3%	9%	0%	26%	5%	18%
12/89	13	0	43	3	9	0	23	8	0
9/89	0	1	43	0	10	0	42	3	1
6/89	0	3	31	0	28	0	37	1	0
3/89	0	10	10	0	26	0	47	0	7
12/88	0	0	5	0	25	0	70	0	0
9/88	14	0	0	0	18	0	65	0	3
6/88	39	0	0	0	10	0	32	0	19
3/88	60	0	0	0	11	0	16	13	1
12/87	60	0	0	0	10	0	25	5	0
9/87	47	0	0	0	9	0	17	0	27
6/87	54	0	0	0	10	0	29	0	7
3/87	25	0	0	0	0	0	75	0	2
12/86	27	0	0	0	0	0	73	0	0
9/86	35	0	0	0	0	0	65	0	0
6/86	33	9	0	0	0	0	58	0	0
3/86	41	0	0	0	0	0	59	0	0
12/85	42	0	0	0	0	0	58	0	0
9/85	41	0	0	0	0	0	59	0	0
6/85	49	0	0	0	0	0	51	0	0
3/85	38	9	0	0	0	0	38	0	15
12/84	74	18	0	0	0	0	8	0	0
9/84	72	27	0	0	0	0	0	0	1

ATTACHMENT E (con't)

EXHIBIT 2

MORGAN STANLEY
PORTFOLIO QUALITY WEIGHTS

DATE	AAA	AA	A	BAA
3/90	57%	3%	39%	1%
12/89	39	3	49	9
9/89	44	3	45	8
6/89	38	11	39	12
3/89	64	0	24	12
12/88	70	7	10	13
9/88	82	0	10	7
6/88	90	0	0	5
3/88	76	19	0	5
12/87	85	10	0	5
9/87	100	0	0	0
6/87	100	0	0	0
3/87	100	0	0	0
12/86	100	0	0	0
9/86	100	0	0	0
6/86	100	0	0	0
3/86	100	0	0	0
12/85	100	0	0	0
9/85	100	0	0	0
6/85	100	0	0	0
3/85	100	0	0	0
12/84	100	0	0	0
9/84	100	0	0	0

EXHIBIT 3

MORGAN STANLEY
PORTFOLIO CHARACTERISTICS

DATE	COUPON	CURRENT YIELD	YIELD TO MATURITY	AVERAGE QUALITY	DURATION	TERM TO MATURITY
3/90	9.1%	9.3%	9.37%	AA	4.44 Yrs.	17.43 Yrs.
12/89	9.3	9.1	9.00	AA	6.66	23.00
9/89	9.4	9.4	9.50	AA	5.50	19.91
6/89	9.3	9.3	9.10	AA	4.79	8.40
3/89	9.6	9.9	10.10	AA	3.81	5.50
12/88	9.3	9.7	10.00	AA	4.75	11.40
9/88	9.1	9.3	9.20	AAA	4.47	12.60
6/88	8.4	8.5	8.60	AAA	3.37	7.40
3/88	8.6	8.7	8.80	AAA	5.39	8.40
12/87	8.5	8.7	8.90	AAA	4.72	8.00
9/87	7.6	7.9	8.60	AAA	2.31	3.40
6/87	7.8	8.0	8.20	AAA	3.40	5.10
3/87	8.3	8.3	8.30	AAA	4.50	11.10
12/86	7.7	8.5	8.30	AAA	4.73	11.00
9/86	8.4	8.7	8.90	AAA	5.10	10.70
6/86	8.6	8.9	9.10	AAA	4.83	10.80
3/86	9.4	9.0	8.70	AAA	3.93	19.90
12/85	10.4	10.1	9.90	AAA	3.95	10.60
9/85	11.2	11.1	11.0	AAA	4.10	9.80
6/85	11.4	10.8	10.5	AAA	4.31	9.70
3/85	11.1	11.3	11.5	AAA	3.86	7.30
12/84	11.5	11.5	11.5	AAA	5.08	9.40
9/84	8.6	8.9	12.5	AAA	3.60	5.30

EXHIBIT 4

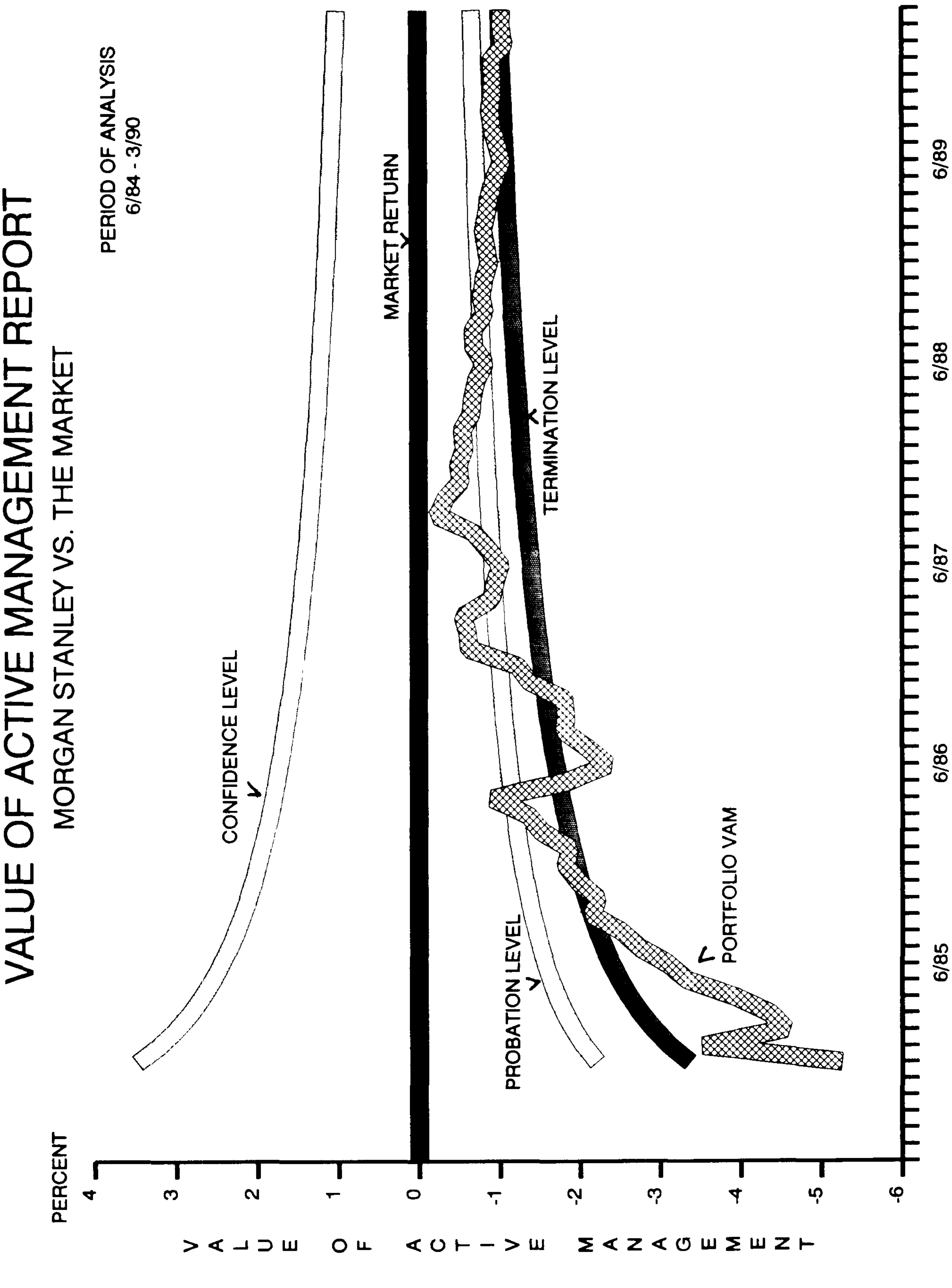
MORGAN STANLEY MANAGEMENT

Comparison of Customized Benchmark Portfolio Performance With Salomon BIG Index

		TOTAL PORTFOLIO ACTUAL	TOTAL PORTFOLIO BENCHMARK	SALOMON BIG
1984	3Q	6.1%	8.0%	8.3%
	4Q	7.2	7.7	7.3
		13.7%	16.3%	16.1%
1985	1Q	1.5%	2.4%	2.2%
	2Q	9.1	8.7	8.4
	3Q	2.4	2.2	2.1
	4Q	7.7	6.8	7.2
		22.2%	21.5%	21.3%
1986	1Q	8.3%	5.7%	7.0%
	2Q	-1.3	1.2	1.2
	3Q	3.1	3.2	2.6
	4Q	4.5	3.2	3.1
		15.1%	13.9%	14.6%
1987	1Q	2.9%	1.4%	1.4%
	2Q	-3.1	-1.1	-1.3
	3Q	-0.5	-1.9	-2.3
	4Q	4.8	5.2	5.4
		4.0%	3.6%	3.0%
1988	1Q	3.1%	3.8%	3.7%
	2Q	0.4	1.2	1.3
	3Q	1.8	1.7	2.0
	4Q	0.3	0.3	0.8
		5.6%	7.3%	7.9%
1989	1Q	1.1%	1.1%	1.2%
	2Q	6.8	7.1	7.8
	3Q	1.5	1.2	1.1
	4Q	3.3%	3.6	3.7
		13.2%	13.6%	14.3%
1990	1Q	-1.7%	0.0%	-0.8%
Cumulative		95.4%	102.9%	103.4%

ATTACHMENT E (con't)

EXHIBIT 5



ATTACHMENT E (con't)

EXHIBIT 6

MORGAN STANLEY
DURATION VS. SPOT RATE

DATE	10 YEAR SPOT RATE	MORGAN PORTFOLIO DURATION	MARKET DURATION
6/84	13.42%	--- Yrs.	3.87 Yrs.
7/84	12.53	3.54	3.92
8/84	12.37	3.57	3.94
9/84	12.11	3.60	3.94
10/84	11.51	4.19	4.00
11/84	11.41	5.17	4.02
12/84	11.48	5.08	4.01
1/85	11.06	5.13	3.99
2/85	11.77	3.99	3.99
3/85	11.50	3.86	3.97
4/85	11.33	4.50	3.98
5/85	10.28	4.42	4.02
6/85	10.28	4.31	3.99
7/85	10.54	4.40	3.97
8/85	10.23	4.02	4.01
9/85	10.29	4.10	3.99
10/85	9.99	4.27	3.97
11/85	9.55	4.23	3.98
12/85	8.98	3.95	3.88
1/86	9.05	4.05	3.93
2/86	8.03	3.79	3.88
3/86	7.31	3.93	3.97
4/86	7.30	4.57	3.97
5/86	7.92	4.71	4.12
6/86	7.25	4.83	4.19
7/86	7.29	5.06	4.19
8/86	6.94	4.79	4.25
9/86	6.94	5.10	4.19
10/86	7.44	5.24	4.19
11/86	7.35	4.73	4.07
12/86	7.14	4.73	4.11
1/87	7.22	4.03	4.08
2/87	7.16	4.06	4.17
3/87	7.17	4.50	4.18
4/87	7.50	3.08	4.38
5/87	8.15	1.81	4.46
6/87	8.31	3.40	4.45
7/87	8.63	3.28	4.45
8/87	8.93	2.60	4.48
9/87	9.51	2.31	4.49
10/87	8.82	4.49	4.53
11/87	8.95	4.79	4.54
12/87	8.82	4.72	4.50

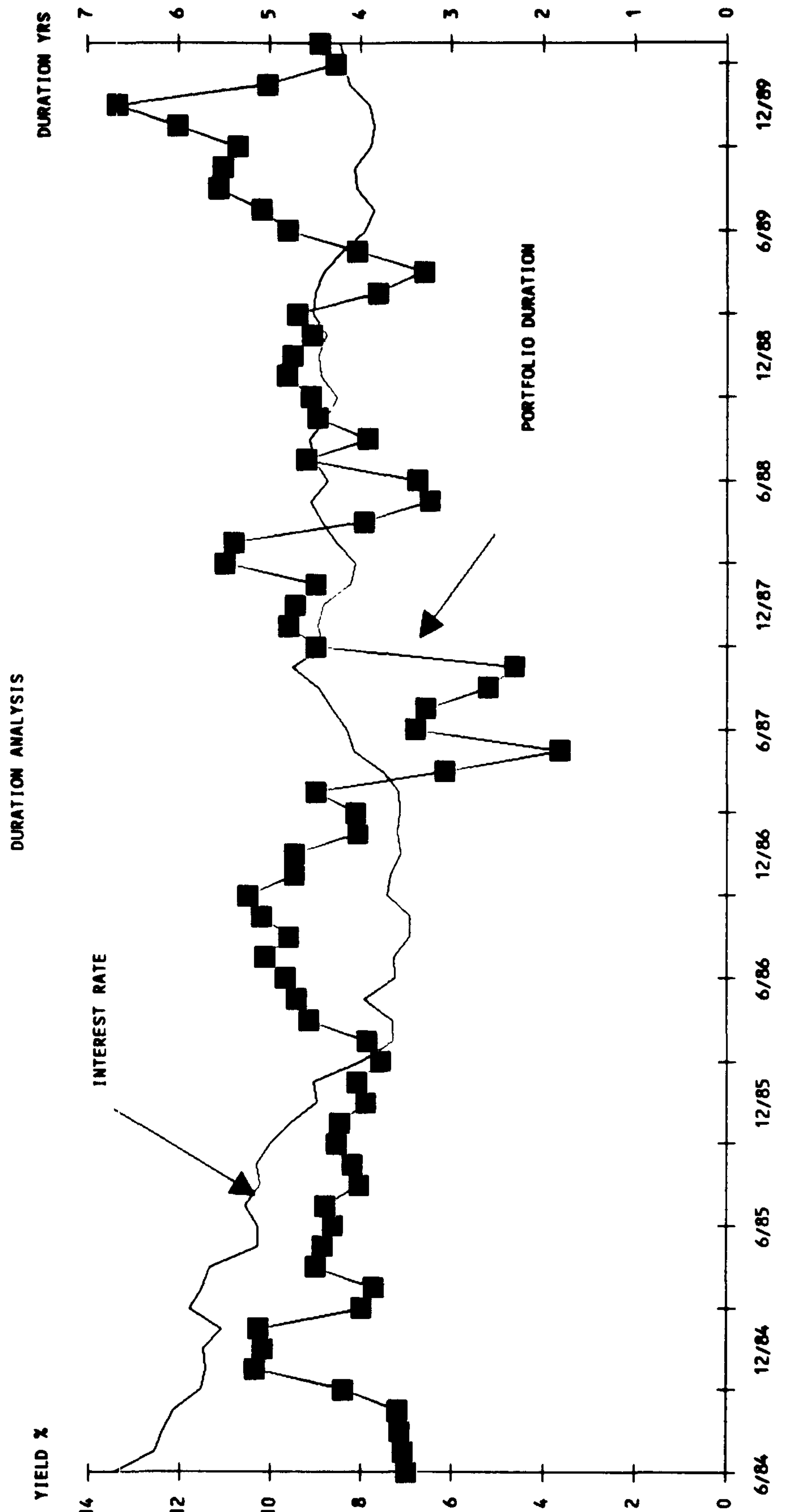
ATTACHMENT E (con't)

Exhibit 6 (con't)

DATE	10 YEAR SPOT RATE	MORGAN PORTFOLIO DURATION	MARKET DURATION
1/88	8.23	4.50	4.44
2/88	8.13	5.49	4.49
3/88	8.55	5.39	4.49
4/88	8.85	3.96	4.49
5/88	9.11%	3.23 Yrs.	4.54 Yrs.
6/88	8.73	3.37	4.46
7/88	9.03	4.60	4.44
8/88	9.12	3.92	4.45
9/88	8.75	4.47	4.39
10/88	8.52	4.54	4.42
11/88	8.89	4.80	4.42
12/88	8.92	4.75	4.44
1/89	8.75	4.53	4.37
2/89	9.05	4.69	4.44
3/89	9.00	3.81	4.44
4/89	8.80	3.30	4.49
5/89	8.39	4.04	4.49
6/89	7.91	4.79	4.45
7/89	7.71	5.08	4.45
8/89	8.07	5.55	4.47
9/89	8.12	5.50	4.55
10/89	7.78	5.34	4.51
11/89	7.71	6.46	4.55
12/89	7.81	6.66	4.59
1/90	8.26	5.02	4.59
2/90	8.36	4.27	4.59
3/90	8.46	4.44	4.59

ATTACHMENT E (con't)

EXHIBIT 7



ACTIVE BOND MANAGERS

Value of Active Management Reports

First Quarter 1990

Fixed income manager returns are evaluated against the performance of customized indices constructed to represent the managers' specific investment approaches. These custom indices are commonly referred to as "benchmark portfolios." The benchmark portfolios factor in bond market influences that at times favorably or unfavorably impact certain investment styles. Thus, benchmark portfolios are the appropriate standards against which to judge the managers' performance.

Manager performance relative to benchmarks is evaluated on a quarterly basis by the Fixed Income Manager Committee of the Investment Advisory Council.

Staff Recommendations

Staff recommends the following actions concerning manager status:

- Renew contracts with IAI, Lehman, Miller and Western
- Terminate the contract with Morgan Stanley

Managers	Market Value 3/31/90 (Thousands)	Quarter Ending 3/31/90 Actual	Quarter Ending 3/31/90 Bmrk	Year Ending 3/31/90 Actual	Year Ending 3/31/90 Bmrk	Annualized Five Years Ending 3/31/90 Actual	Annualized Five Years Ending 3/31/90 Bmrk	Annualized Since 7/1/84 Actual	Annualized Since 7/1/84 Bmrk
IAI	$108,267	-2.7%	-1.2%	11.9%	12.3%	10.8%	11.7%	13.4%	13.5%
Lehman Ark	120,880	-0.5	-0.4	11.0	11.8	10.7	10.9	12.5	12.6
Miller Anderson	175,595	-0.7	-0.8	7.6	12.2	11.7	11.7	13.0	13.5
Morgan Stanley	115,490	-1.7	-0.1	10.1	12.2	11.1	11.2	12.4	13.2
Western Asset	270,256	-1.4	-0.4	12.5	12.3	12.6	11.7	14.6	13.3
Aggregate Active*		-1.3	-0.7	10.5	12.0	11.6	11.4	13.3	13.2
Salomon Broad Investment Grade Index		-0.8%		12.2%		11.7%		13.5%	

* Historical performance reflects composite of current managers only.

INVESTMENT ADVISERS

PORTFOLIO MANAGER: Larry Hill

ASSETS UNDER MANAGEMENT: $108,267,301

INVESTMENT PHILOSOPHY

Investment Advisers is a traditional top down bond manager. The firm's approach is oriented toward correct identification of the economy's position in the credit cycle. This analysis leads the firm to its interest rate forecast and maturity decisions, from which the firm derives most of its value-added. Investment Advisers is an active asset allocator, willing to make rapid, significant moves between cash and long maturity investments over the course of an interest rate cycle. Quality, sector and issue selection are secondary decisions. Quality and sector choices are made through yield spread analyses consistent with the interest rate forecasts. Individual security selection receives very limited emphasis, focusing largely on specific bond characteristics such as call provisions.

QUALITATIVE EVALUATION

(Reported By Exception)

The current evaluation notes the following:

- No current concerns.

QUANTITATIVE EVALUATION

Performance Relative to Benchmark

	Latest Quarter	Latest Year	Since 6/30/84 Annualized
IAI Actual	-2.7%	11.9%	13.4%
IAI Benchmark	-1.2	12.3	13.5

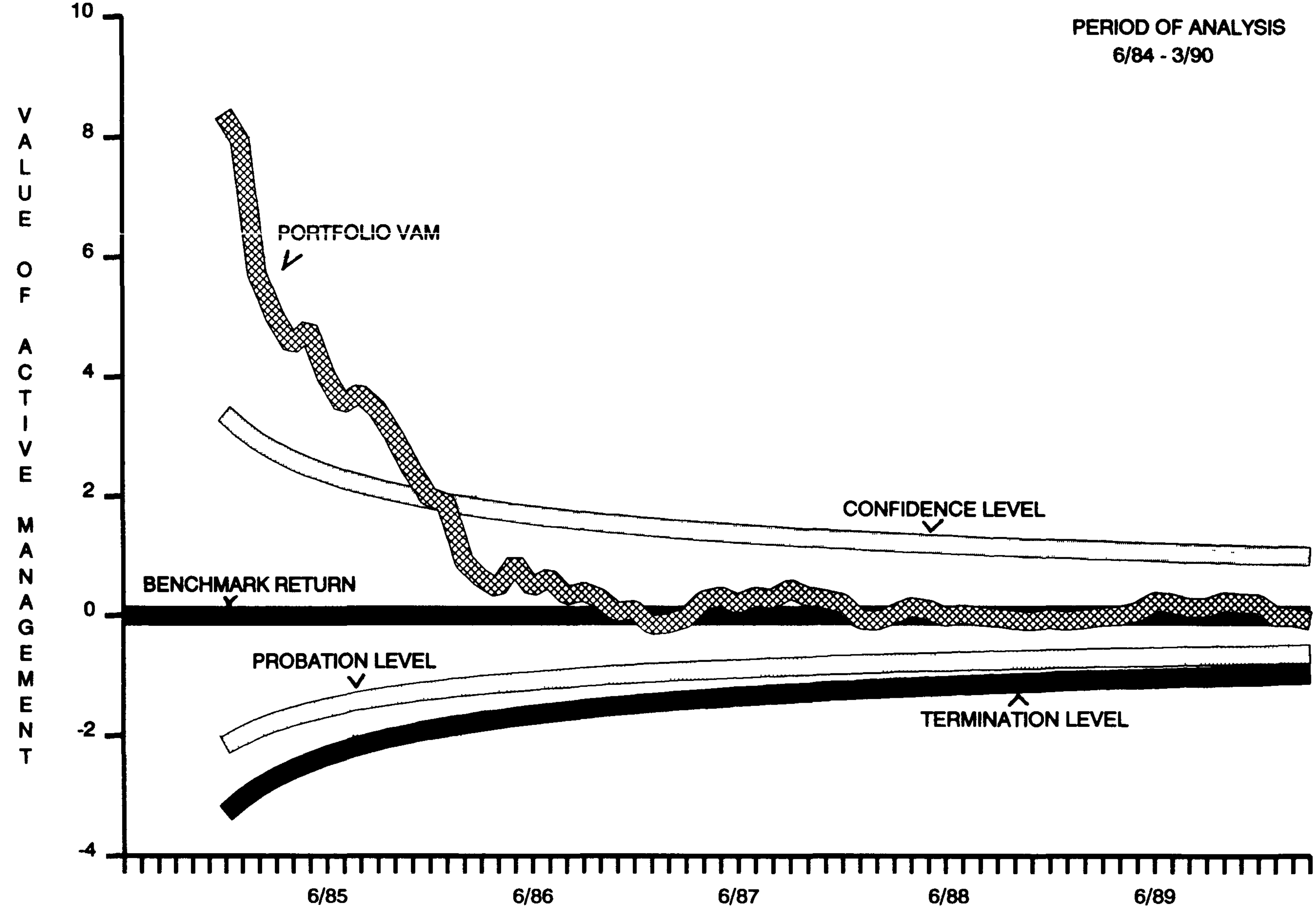
(See Value of Active Management graph below)

STAFF RECOMMENDATIONS

Renew annual contract for period beginning 7/1/90.

VALUE OF ACTIVE MANAGEMENT REPORT

INVESTMENT ADVISERS



LEHMAN ARK MANAGEMENT

PORTFOLIO MANAGER: Kevin Hurley **ASSETS UNDER MANAGEMENT: $120,880,280**

INVESTMENT PHILOSOPHY

Lehman's primary emphasis is on forecasting cyclical interest rate trends and positioning its portfolios in terms of maturity, quality and sectors, in response to its interest rate forecast. However, the firm avoids significant, rapidly changing interest rate bets. Instead, it prefers to shift portfolio interest rate sensitivity gradually over a market cycle, avoiding extreme positions in either long or short maturities. Individual bond selection is based on a quantitative valuation approach and the firm's internally-conducted credit analysis. High quality (A or better) undervalued issues are selected consistent with the desired maturity, quality and sector composition of the portfolios.

QUALITATIVE EVALUATION

(Reported By Exception)

The current evaluation notes the following:

- No current concerns.

QUANTITATIVE EVALUATION

Performance Relative to Benchmark

	Latest Quarter	Latest Year	Since 6/30/84 Annualized
Lehman Actual	-0.5%	11.0%	12.5%
Lehman Benchmark	-0.4	11.8	12.6

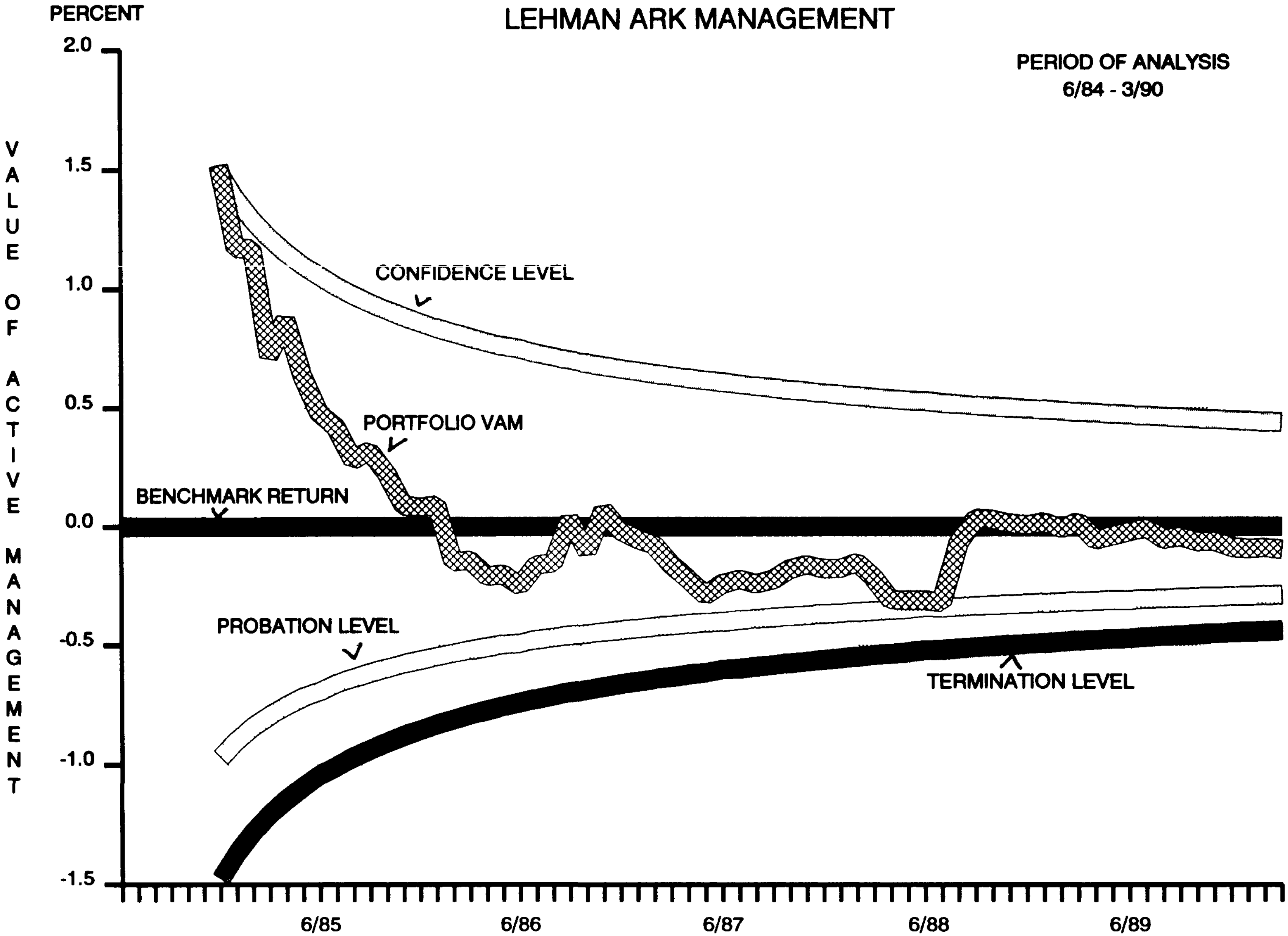
(See Value of Active Management graph below)

STAFF RECOMMENDATIONS

Renew annual contract for period beginning 7/1/90.

VALUE OF ACTIVE MANAGEMENT REPORT

LEHMAN ARK MANAGEMENT



MILLER ANDERSON

PORTFOLIO MANAGER: Tom Bennet

ASSETS UNDER MANAGEMENT: $175,595,063

INVESTMENT PHILOSOPHY

Miller Anderson focuses its investments in misunderstood or under-researched classes of securities. Over the years this approach has led the firm to emphasize mortgage-backed and specialized corporate securities in its portfolios. Based on its economic and interest rate outlook, the firm establishes a desired maturity level for its portfolios. This decision is instituted primarily through the selection of specific types of securities and cash levels that are consistent with the portfolio's desired maturity. However, such moves are made gradually over an interest rate cycle and extremely high cash positions are never taken. Total portfolio maturity is always kept within an intermediate three-to-seven year duration band. Unlike other firms that also invest in mortgage securities, Miller Anderson intensively researches and, even in some cases manages, the mortgage pools in which it invests.

QUALITATIVE EVALUATION

(Reported By Exception)

The firm's strengths continue to be:

- Highly successful and experienced professionals.
- Extensive securities research process.

QUANTITATIVE EVALUATION

Performance Relative to Benchmark

	Latest Quarter	Latest Year	Since 6/30/84 Annualized
Miller Actual	-0.7%	7.6%	13.0%
Miller Benchmark	-0.8	12.2	13.5

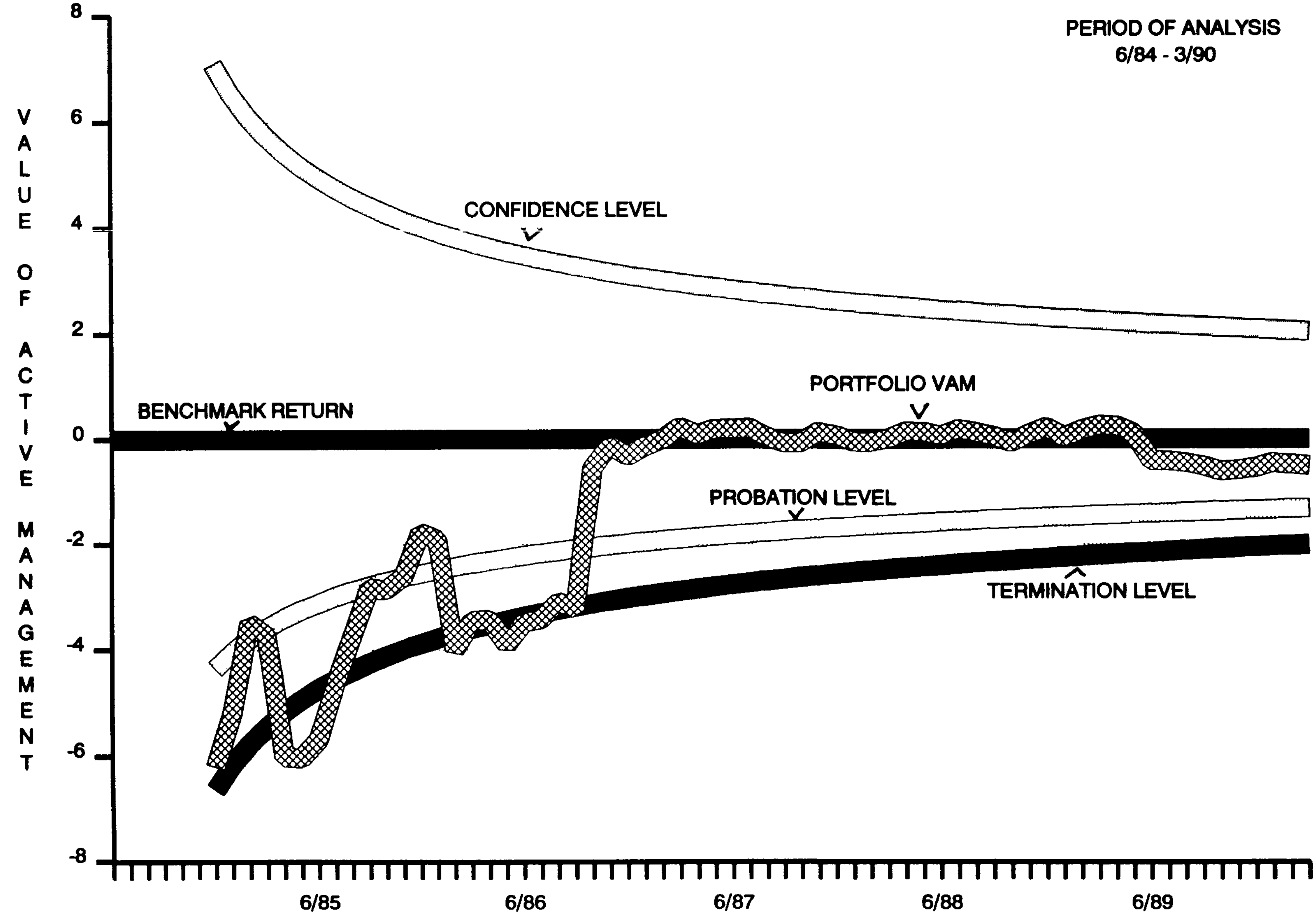
(See Value of Active Management graph below)

STAFF RECOMMENDATIONS

Renew annual contract for period beginning 7/1/90.

VALUE OF ACTIVE MANAGEMENT REPORT

MILLER ANDERSON SHERRERD



MORGAN STANLEY

PORTFOLIO MANAGER: Geoffrey Gettman **ASSETS UNDER MANAGEMENT: $115,489,889**

INVESTMENT PHILOSOPHY

Morgan Stanley takes a very conservative approach to fixed income investing, emphasizing the preservation of capital through the generation of consistent real returns. This philosophy has led the firm to maintain a vast majority of its portfolio in short to intermediate maturity, high quality (A or better) securities. Large positions in maturities longer than ten years are held only as temporary trading opportunities. These positions are increased or reduced gradually as the firm's expectations of the cyclical level of interest rates changes. Issue selection is of secondary importance to maturity decisions. Rather, given its maturity decisions, the firm prefers to make sizable investments in specific areas of the market where it believes persistent misvaluations are present.

QUALITATIVE EVALUATION

(Reported By Exception)

The current evaluation notes the following:

- Morgan Stanley's benchmark is not an accurate reflection of the firm's investment approach.

QUANTITATIVE EVALUATION

Performance Relative to Benchmark

	Latest Quarter	Latest Year	Since 6/30/84 Annualized
Morgan Actual	-1.7%	10.1%	12.4%
Morgan Benchmark	-0.1	12.2	13.2

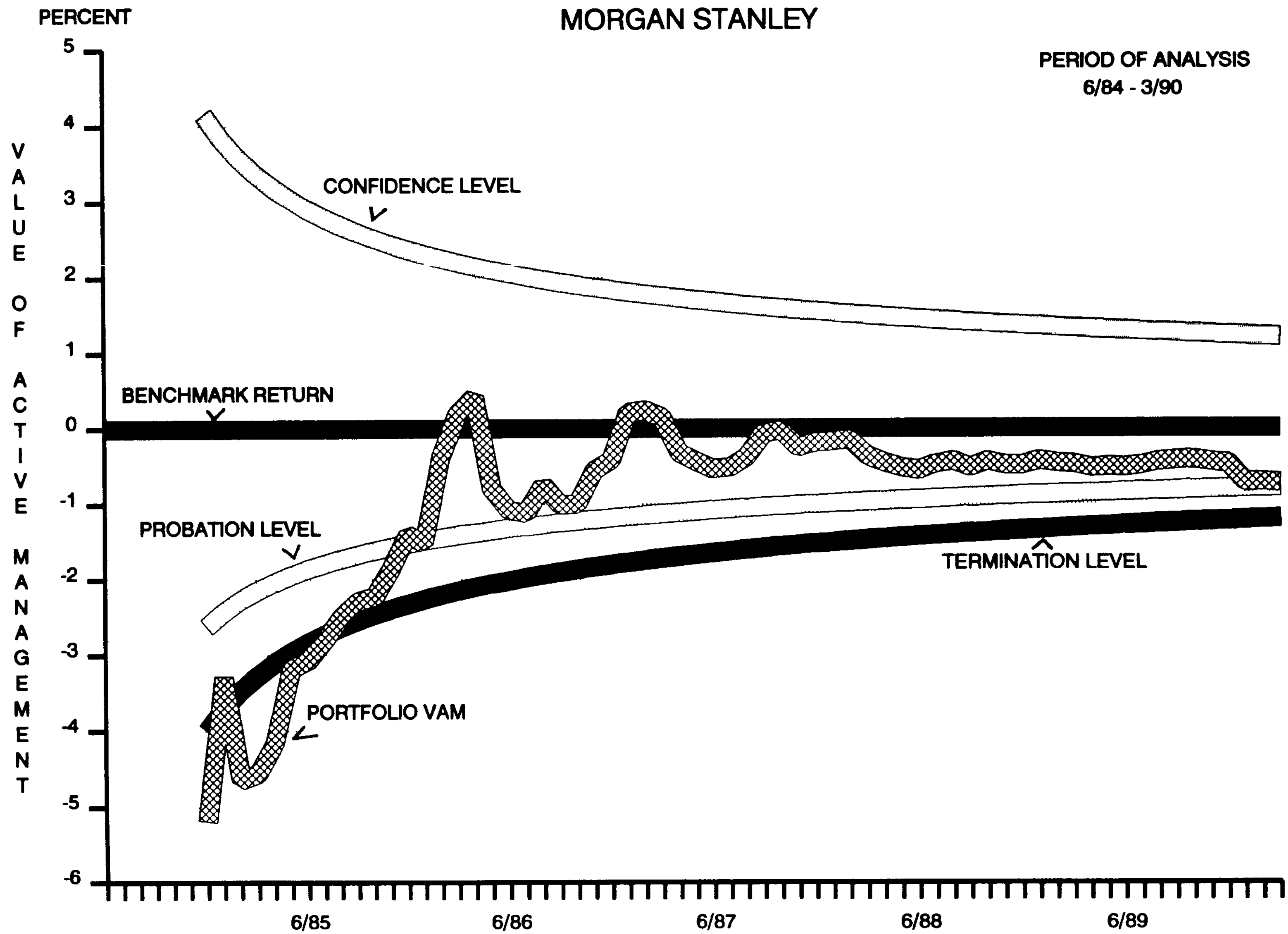
(See Value of Active Management graph below)

STAFF RECOMMENDATIONS

A detailed review of Morgan Stanley was conducted during the quarter. Based on the results of the analysis, staff recommends that the SBI terminate its relationship with Morgan Stanley.

VALUE OF ACTIVE MANAGEMENT REPORT

MORGAN STANLEY



WESTERN ASSET MANAGEMENT

PORTFOLIO MANAGER: Edgar Robie, Jr.

ASSETS UNDER MANAGEMENT: $270,255,509

INVESTMENT PHILOSOPHY

Western recognizes the importance of interest rates changes on fixed income portfolio returns. However, the firm believes that successful interest rate forecasting, particularly short-run forecasting, is extremely difficult to accomplish consistently. Thus, the firm attempts to keep portfolio maturity in a narrow band near that of the market, making only relatively small, gradual shifts over an interest rate cycle. It prefers to add value primarily through appropriate sector decisions. Based on its economic analysis, Western will significantly overweight particular sectors, shifting these weights as economic expectations warrant. Issue selection, like maturity decisions, are of secondary importance to the firm.

QUANTITATIVE EVALUATION

Performance Relative to Benchmark

	Latest Quarter	Latest Year	Since 6/30/84 Annualized
Western Actual	-1.4%	12.5%	14.6%
Western Benchmark	-0.4	12.3	13.3

(See Value of Active Management graph below)

QUALITATIVE EVALUATION

(Reported By Exception)

The firm's exceptional strengths continue to be:

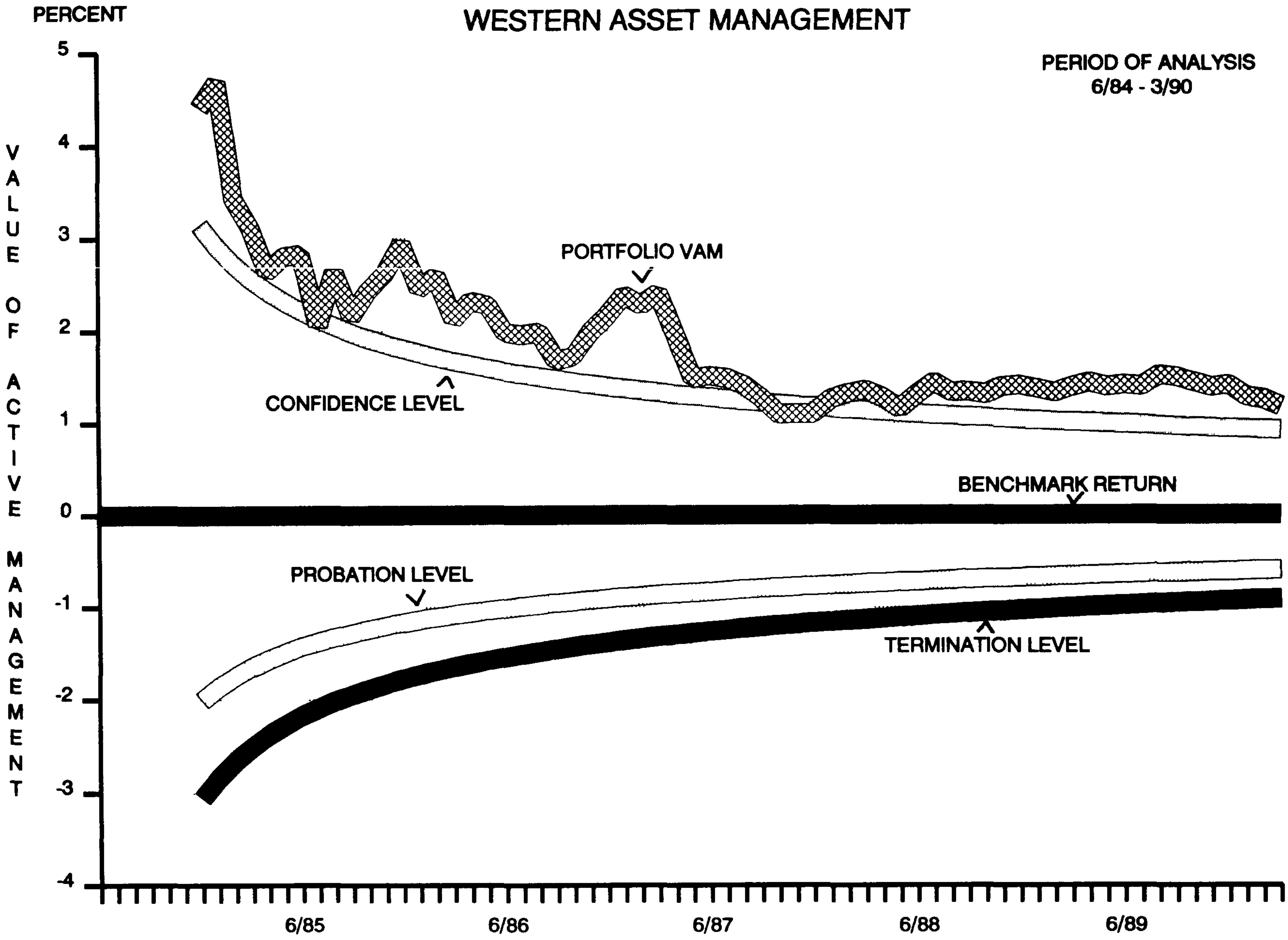
- Highly successful and experienced professionals.
- Extensive research and understanding in the application of normal portfolios to bond management.

STAFF RECOMMENDATIONS

Renew annual contract for period beginning 7/1/90.

VALUE OF ACTIVE MANAGEMENT REPORT

WESTERN ASSET MANAGEMENT



Tab H

EXECUTIVE DIRECTOR
HOWARD J. BICKER

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT
Room 105, MEA Building
55 Sherburne Avenue
St Paul, MN 55155
Tel (612) 296-3328
FAX (612) 296-9572

May 25, 1990

TO: Members, State Board of Investment
Members, Investment Advisory Council

FROM: Alternative Investment Committee

SUBJECT: Committee Report

The Alternative Investment Committee met during the quarter to review the following information and action items:

- Review of current strategy.
- Results of annual review sessions with existing managers.
- Upcoming real estate manager "Round Table."
- Renewal of resource consultant contract.
- Investments with new specialty real estate managers:
  - Copley Value Fund
  - LaSalle Income Parking Fund
- Investment with new and existing venture capital managers:
  - Zell/Chilmark Fund
  - Brinson Partners Acquisition Fund II
  - IAI Venture Partners II

INFORMATION ITEMS:

1) Review of Current Strategy

To increase overall portfolio diversification, 15% of the Basic Retirement Funds is allocated to alternative investments. Alternative investments include real estate, venture capital and resource investments where Minnesota State Board of Investment (SBI) participation is limited to commingled funds or other pooled vehicles. A chart summarizing the Board's current commitments is attached (see Attachment A).

The real estate investment strategy calls for the establishment and maintenance of a broadly diversified real estate portfolio comprised of investment that provide overall diversification by property type and location. The main component of this portfolio consists of investments in diversified open-end and closed-end commingled funds. The remaining portion of the portfolio can include investments in less diversified, more focused (specialty) commingled funds. Currently, the SBI has committed $385 million to twelve commingled real estate funds.

The venture capital investment strategy is to establish and maintain a broadly diversified venture capital portfolio comprised of investments that provide diversification by industry type, stage of corporate development and location. To date, the SBI has committed to fourteen commingled venture capital funds for a total commitment of $319 million.

The strategy for resource investment requires that investment be made in resource investment vehicles that are specifically designed for institutional investors to provide an inflation hedge and additional diversification. individual resource investments will include proved producing oil and gas properties, royalties and other investments that are diversified geographically and by type. Currently, the SBI has committed $124 million to eight commingled oil and gas funds.

2) Results of Annual Review Sessions with Existing Managers

During March 1990, the Alternative Investment Committee and staff conducted annual review sessions with four of the SBI's existing real estate investment managers:

- Heitman Advisory Corporation (Heitman)
- Rosenberg Real Estate Equity Funds (RREEF)
- Trust Company of the West (TCW)
- Aldrich, Eastman, Waltch (AEW)

Summaries of the review sessions are included as Attachments B, C, D, E to this Committee Report.

Overall, the meetings went well and produced no major surprises. The managers by and large are conforming to their originally stated investment strategies. In addition, these managers, and the SBI's other three real estate managers, feel that any significant problems within their real estate portfolios have been identified and adjusted for. Therefore, they are not expecting any significant net portfolio write-downs in the foreseeable future.

In comparing investment strategies, organizational effectiveness and performance to date, staff and the Alternative Investment Committee have been satisfied with the performance of Heitman and TCW and would recommend additional investments with these managers, when appropriate.

The Committee and staff have been less satisfied with the investment performance of RREEF and AEW. Several investments in weak real estate markets have negatively impacted RREEF's and AEW's investment performance. At this time, the Alternative Investment Committee and staff do not recommend additional investments with RREEF or AEW.

3) Upcoming Real Estate Manager "Round Table"

As part of the SBI's Fiscal Year 1990 Management Plan, staff coordinates informal discussion sessions with groups of the Board's external managers. The third of these "Round Table" discussions has been scheduled with several of the SBI's real estate managers for May 30, 1990, 1:30 - 3:00 P.M., in SBI offices.

FIRM	PORTFOLIO MANAGER
Aldrich, Eastman & Waltch	Peter Aldrich
Aetna	Tom Anathan
Heitman Advisory	David Glickman
TCW Realty	Vince Martin

The "Round Table" will be conducted in an informal, question-and-answer format. The session will provide an opportunity to meet several of the SBI's real estate managers and to gain perspective on their differing investment style and economic outlooks.

ACTION ITEMS:

1) Renewal of Resource Consulting Contract

The SBI has retained Gene Graham of the Sterling Group to provide consulting services regarding oil and gas investments since 1988. The current contract expires on June 30, 1990.

To date, billings under that contract total $4,664.00. Ms. Graham has provided the SBI with valuable assistance on the following projects:

- Analysis of several proposed oil and gas investments.

- Review and analysis of Apache II sale and attendance at an Apache investor meetings in Denver and Minneapolis.

During the latter half of 1990, Ms. Graham is planning on leaving the Sterling Group to pursue other interests. The Committee and staff feel that her departure will not have a material impact on her consulting performance with the SBI.

To date, the Committee and staff have been very satisfied with Ms. Graham's performance. She has provided expertise regarding both new and existing investments that otherwise would have been unavailable to the SBI. The Committee believes the SBI should continue the contractual relationship with Gene Graham as an individual consultant.

More information on Ms. Graham and the current contract is included as Attachment F.

RECOMMENDATION:

The Committee recommends the Board authorize the executive director, with assistance from the Board's legal counsel, to negotiate and execute a one year contract renewal with Gene Graham for selected oil and gas project reviews at a cost not to exceed $20,000. The Committee also recommends that the terms and conditions of the original contract be extended.

2) Investment in the Copley Value Fund

Copley Real Estate Advisors, a real estate investment group based in Boston, MA, is seeking investors in the Copley Value Fund, a new $1 billion real estate investment fund. The Copley Value Fund, managed by Copley in a joint venture between Copley, the Robert M. Bass Group and General Electric Capital Corporation, will invest opportunistically in large, complex portfolios of real estate, including many controlled by sellers under intense financial pressure. Copley currently has over $14 billion of real estate investments under management.

More information on the Copley Value Fund is included as Attachment G.

RECOMMENDATION:

The Committee recommends that the SBI authorize the executive director, with assistance from the SBI's legal counsel, to negotiate and execute an investment of up to $75 million or 15%, whichever is less in the Copley Value Fund managed by Copley Real Estate Advisors.

3) <u>Investment in the LaSalle Income Parking Fund</u>

LaSalle Partners Limited, a real estate investment group based in Chicago IL, is seeking investors in the LaSalle Income Parking Fund, a new $75 million to $200 million real estate investment fund. The Income Parking Fund, managed by LaSalle, will invest in parking garage investment opportunities in selective markets throughout the U.S. In addition to this proposed fund, LaSalle Partners manages in excess of $4 billion in real estate assets for over 100 institutional clients.

More information on the LaSalle Income Parking Fund is included as Attachment H.

RECOMMENDATION:

The Committee recommends that the SBI authorize the executive director, with assistance from the SBI's legal counsel, to negotiate and execute an investment of up to $20 million, or 20% whichever is less, in the LaSalle Income Parking Fund managed by LaSalle Partners Limited.

4) <u>New Investment with Zell/Chilmark</u>

Zell/Chilmark, a venture capital investment group based in Chicago, IL, is seeking investors in a new $250 million to $1 billion venture capital investment fund. The Zell/Chilmark Fund will invest in corporate restructuring and rejuvenation situations. Zell/Chilmark, a joint venture between Sam Zell and David Schulte of Chilmark Partners, represents extensive experience investing in, and advising on, corporate restructurings. The Zell organization currently controls and manages businesses with total asset in excess of $6 billion. David Schulte of Chilmark Partners has advised clients on many prominent restructuring or rejuvenation situations such as Chrysler, International Harvester, Clark Oil, Global Marine, etc.

More information on the Zell/Chilmark Fund is included as Attachment I.

RECOMMENDATION:

The Committee recommends that the SBI authorize the executive director, with assistance from the SBI's legal counsel, to negotiate and execute an investment up to $30 million or 20%, whichever is less, of the Zell/Chilmark Fund.

5) <u>Follow-on Investment with Brinson Partners (formerly First Chicago) Venture Capital Group</u>

Brinson Partners, a venture capital consulting and investment firm based in Chicago, IL, is seeking investors in Brinson

Partners Venture Partnership Acquisition Fund II, a new $100 million fund. Fund II is a follow-on fund to Fund I, which was formed in 1988. As in the prior fund, Fund II will focus on the acquisition of secondary interests in venture capital limited partnerships.

Fund I was incepted before a name change and spin-off from First Chicago to Brinson Partners. The Committee and staff believe that transition from First Chicago to Brinson Partners will not affect the operations or performance of Funds I or II.

Currently, the SBI has $5 million and committed to Fund I. The Committee and staff have been satisfied with the performance, operations and strategy of Brinson Partners and feel it is appropriate to place additional venture capital funds with Brinson Partners, subject to final negotiations and review by legal counsel.

RECOMMENDATION:

The Committee recommends that the SBI authorize the executive director, with assistance from the SBI's legal counsel, to negotiate and execute an investment in an amount equal to 20% of Brinson Partners Venture Partnership Acquisition Fund II. This amount is estimated to be $20-25 million.

6) Follow-on Investment with IAI Venture Capital Group

IAI Venture Capital Group, a venture capital investment firm based in Minneapolis, MN, is seeking investors in a new $50 million venture capital investment fund. IAI Venture Partners II is a follow-on fund to Fund I and Superior Ventures, which were formed in 1983 and 1986, respectively. As in the prior funds, Fund II will focus on early stage venture capital investments. In addition, Fund II will have a significant proportion of Minnesota investments, projected to be approximately 50% of total investments.

Currently, the SBI has $6.6 million committed to Superior Ventures. The Committee and staff have been satisfied with the performance, operations and strategy of IAI Venture Capital Group and feel it is appropriate to place additional venture capital funds with IAI, subject to final negotiations and review by legal counsel.

RECOMMENDATION:

The Committee recommends that the SBI authorize the executive director, with assistance from the SBI's legal counsel, to negotiate and execute an investment of $10 million or 20%, whichever is less, in IAI Venture Partners II.

Attachment A
Summary of Alternative Investments
First Quarter 1990

	Inception Date	Commit. (Millions)	Funded Commit. (Millions)	Mkt. Value Of Funded Commit. (Millions)	Cash Distr. (Millions)	Unfunded Commit. (Millions)	IRR	Measurement Period
Aetna	4/82	$40.0	$40.0	$62.2	$0.0	$0.0	7.6%	7.2 Yrs.
Equitable	10/81	40.0	40.0	74.3	0.0	0.0	9.6	7.8
Heitman I	8/84	20.0	20.0	21.6	10.3	0.0	11.8	5.4
Heitman II	11/85	30.0	30.0	36.0	7.7	0.0	11.4	4.1
Heitman III	1/87	20.0	20.0	21.2	2.8	0.0	8.5	3.0
Prudential	9/81	40.0	40.0	51.1	18.0	0.0	7.9	7.8
RREEF	9/84	75.0	75.0	80.0	13.0	0.0	5.8	5.6
State Street III	9/85	20.0	20.0	22.5	0.0	0.0	2.9	4.3
State Street IV	9/86	15.0	15.0	16.1	0.0	0.0	2.4	3.2
State Street V	12/87	15.0	15.0	16.9	0.0	0.0	7.1	2.0
TCW III	8/85	40.0	40.0	49.7	9.5	0.0	10.3	4.6
TCW V	11/86	30.0	30.0	35.6	2.1	0.0	9.8	3.3
Real Estate Totals		**$385.0**	**$385.0**	**$487.2**	**$63.4**	**$0.0**		
Allied	9/85	$5.0	$5.0	$5.1	$0.8	$0.0	7.9%	3.8 Yrs.
DSV	4/85	10.0	10.0	11.5	0.0	0.0	4.0	4.2
First Century	12/84	10.0	6.5	6.2	2.0	3.5	9.6	5.1
First Chicago	5/88	5.0	3.5	3.5	0.1	1.5	11.8	1.3
Golder Thoma	10/87	14.0	4.9	4.6	0.0	9.1	-12.2	1.7
Inman/Bowman	6/85	7.5	4.5	3.6	0.0	3.0	-7.4	4.1
KKR I, II, & III	6/84	190.0	143.7	147.2	63.0	46.3	24.3	5.3
Matrix	8/85	10.0	10.0	11.1	0.0	0.0	4.9	3.9
Matrix II	3/90	10.0	0.0	0.0	0.0	10.0	0.0	0.0
Norwest	1/84	10.0	10.0	7.5	2.5	0.0	-0.1	6.0
Summit I	12/84	10.0	10.0	9.8	3.8	0.0	9.4	5.0
Summit II	5/88	30.0	7.5	7.0	0.0	22.5	-7.0	1.5
Superior	6/86	6.6	3.3	3.2	0.0	3.3	-1.6	3.0
T. Rowe Price	11/87	0.9	0.9	0.6	0.4	0.0	34.4	1.6
Venture Capital Totals		**$319.0**	**$219.8**	**$221.0**	**$72.6**	**$99.2**		
AMGO I	9/81	$15.0	$15.0	$4.8	$3.0	$0.0	-10.3%	7.8 Yrs.
AMGO II	2/83	7.0	7.0	6.0	1.6	0.0	1.9	6.4
AMGO IV	7/88	12.3	6.6	6.8	0.1	5.7	8.2	1.0
AMGO V	5/90	16.8	0.0	0.0	0.0	16.8	0.0	0.0
Apache I	5/84	3.0	1.6	1.6	0.6	1.4	18.6	5.1
Apache III	12/86	30.0	30.0	20.0	17.0	0.0	11.2	2.5
Morgan O&G	8/88	15.0	8.4	9.0	0.0	6.6	12.0	1.4
British Pet.	2/89	25.0	25.0	28.0	2.7	0.0	24.0	1.0
Resource Totals		**$124.1**	**$93.6**	**$76.2**	**$25.0**	**$30.5**		
GRAND TOTALS		**$828.1**	**$698.4**	**$784.4**	**$161.0**	**$129.7**		

Notes: Figures are updated after each manager's annual review session.
IRR indicates internal rate of return.
Totals may not add due to rounding.

ATTACHMENT B

ANNUAL REVIEW SUMMARY
HEITMAN FUNDS I, II AND III
March 29, 1990

MANAGER REPRESENTATIVES: David Glickman, Teresa Myers, Herb Kuehnle

SBI ASSETS UNDER MANAGEMENT: $78,806,290

BACKGROUND AND DESCRIPTION: The Heitman Funds I, II and III are managed by Heitman Advisory Corporation, whose primary office is in Chicago. Funds I, II, III, were begun in August 1984, November 1985, and January 1987, respectively. The SBI investment commitment totals $70 million for the three Funds. As of December 31, 1988, the entire $70 million had been funded. Each fund has a twelve year term. The majority of the fund's investments are equity real estate diversified by property type and location. Heitman Properties Ltd., an affiliate of Heitman, manages the funds' wholly owned properties.

QUALITATIVE EVALUATION

The evaluation noted several items of interest:

- Going forward, Heitman sees no change in its basic strategy for the funds. Funds I, II, and III are fully invested.

- Heitman will consider additional leverage where there is positive leverage, long term leases are in place, and downside risk is minimal. Currently, the Funds are, in aggregate, one-third leveraged.

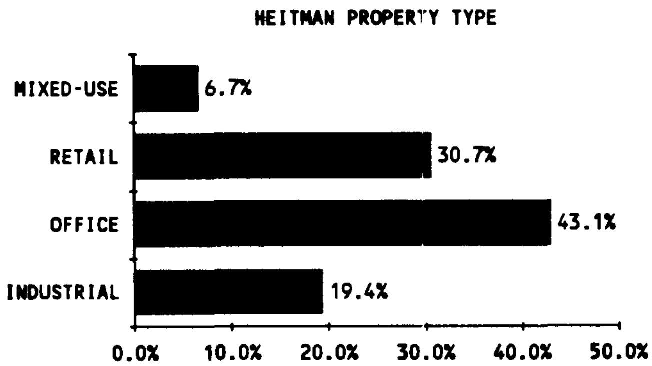
- Heitman continues to structure a defensive posture by lengthening lease terms to insulate the properties in the event of a recession. Its strategy is to focus on keeping high current occupancy levels.

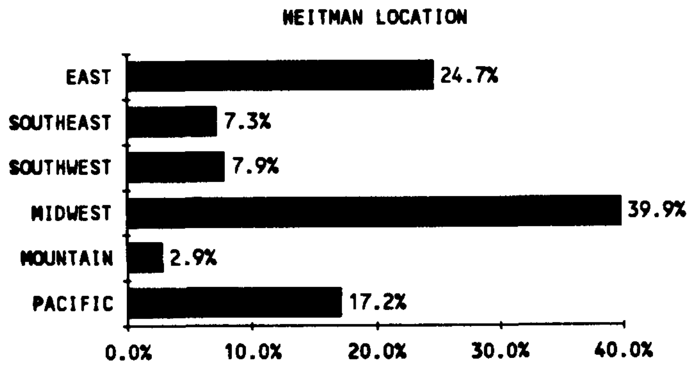
- As the funds mature, Heitman will continue to evaluate opportunities for selective property sales. Several portfolio properties have been sold and another is currently up for sale.

QUANTITATIVE EVALUATION FOR HEITMAN FUNDS I, II, AND III AGGREGATE AS OF 12/31/89

COMMITMENT:	$70,000,000
FUNDED COMMITMENT:	$70,000,000
MARKET VALUE OF FUNDED COMMITMENT:	$78,806,290
CASH DISTRIBUTIONS:	$20,748,328
INCEPTION DATE(S):	Fund I - August 1984 Fund II - November 1985 Fund III - January 1987
INTERNAL RATE OF RETURN (IRR): (annualized, since inception)	Fund I 11.8% Fund II 11.4% Fund III 8.5%

DIVERSIFICATION PROFILE (AS OF 12/31/89)





STAFF COMMENTS AND RECOMMENDATIONS:

The Alternative Investment Committee and staff have been satisfied with Heitmans' operations and performance to date. Additional investments with Heitman will be considered, when appropriate.

ATTACHMENT C

ANNUAL REVIEW SUMMARY
TCW FUNDS III AND IV
March 30, 1990

MANAGER REPRESENTATIVES: Jake McCandless, Vince Martin

SBI ASSETS UNDER MANAGEMENT: $85,401,264

BACKGOUND AND DESCRIPTION: Management of TCW Funds is a joint venture between Trust Company of the West (TCW) and Westmark Real Estate Investment Services of Los Angeles. Funds III and IV were begun in August 1985 and November 1986, respectively. The SBI's investment commitment totals $70 million for the two funds. As of December 31, 1988, the entire $70 million had been funded. Both funds have ten year terms. The fund managers utilize specialty investment vehicles such as convertible and participating mortgages to enhance real estate returns. In addition, they specialize in real estate research to identify attractive property markets. Generally, investments are diversified by location and property type with some concentration in particular property types and locations identified by internal research. Management of portfolio properties is typically handled by local property management firms.

QUALITATIVE EVALUATION

The evaluation noted several items of interest:

- TCW is research oriented with an intensive, supply-demand based research program. Based on current research findings, the firm continues to target office acquisitions in very specific locations in the Los Angeles area, in Washington D.C., and in Boston; and industrial property opportunities in Los Angeles and Washington, D.C.

- Fund IV is making its last acquisition first quarter 1990. An opportunistic property sale was made in 1989 from Fund III and more will be considered in 1990.

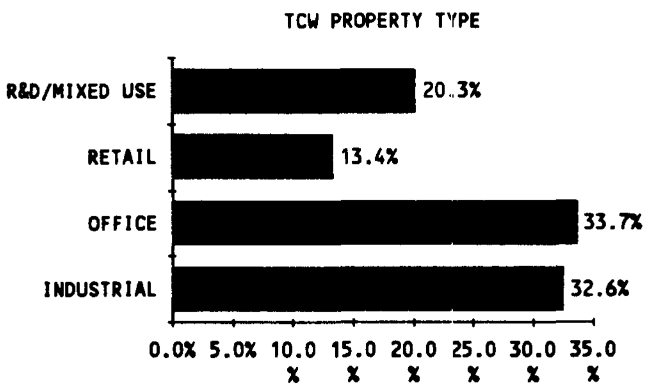
- In 1989 TCW revised its policy so that all assets in a fund are valued on the same date each year in order to provide a current value for each fund at one specific point in time. Annually the assets of Fund III will be valued as of September 30, and the assets of Fund IV will be valued as of June 30.

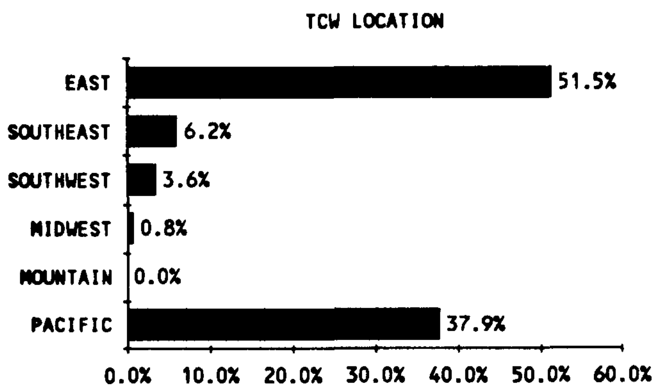
- Going forward, TCW will continue to upgrade properties and tenant mix in order to enhance values.

QUANTITATIVE EVALUATION FOR TCW FUNDS III AND IV AGGREGATE AS OF 12/31/89

COMMITMENT:	$70,000,000
FUNDED COMMITMENT:	$70,000,000
MARKET VALUE OF FUNDED COMMITMENT:	$85,401,264
CASH DISTRIBUTIONS:	$11,600,019
INCEPTION DATE(S):	Fund III August 1985 Fund IV November 1986
INTERNAL RATE OF RETURN (IRR): (annualized, since inception)	Fund III 10.3% Fund IV 9.8%

DIVERSIFICATION PROFILE (AS OF 12/31/89)





STAFF COMMENTS AND RECOMMENDATIONS:

The Alternative Investment Committee and staff have been satisfied with TCW's operations and performance to date. Additional investments with TCW will be considered, when appropriate.

ATTACHMENT D

ANNUAL REVIEW SUMMARY
AEW/STATE STREET FUNDS III, IV, V
March 29, 1990

MANAGER REPRESENTATIVES: John Pattillo, Robert Hannon
Robert Kilroy

SBI ASSETS UNDER MANAGEMENT: $55,504,979

BACKGOUND AND DESCRIPTION: The AEW/State Street Funds III, IV and V are managed by Aldrich, Eastman and Waltch under the Trusteeship of State Street Bank and Trust of Boston. Funds III, IV and V were begun in September 1985, September 1986 and December 1987, respectively. The SBI's investment commitment totals $50 million for the three funds. As of December 31, 1988, all $50 million of the SBI's investment commitment had been funded. Each fund has a 15 year term. The funds' special orientation is the use of creative investment vehicles such as convertible and participating mortgages to maximize real estate returns. The real estate portfolios are diversified by location and property type. On-site property management is typically contracted to outside firms or conducted by joint venture partners. The firm's primary office is in Boston.

QUALITATIVE EVALUATION

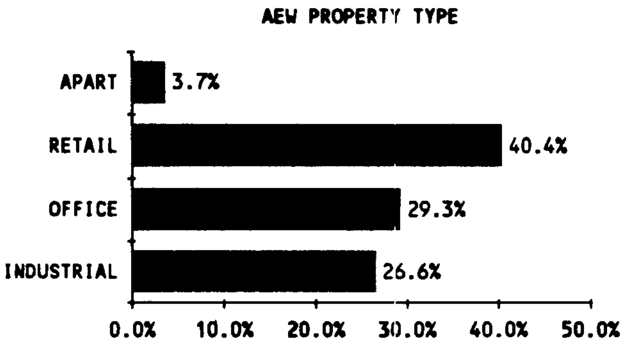
The evaluation noted several items of interest:

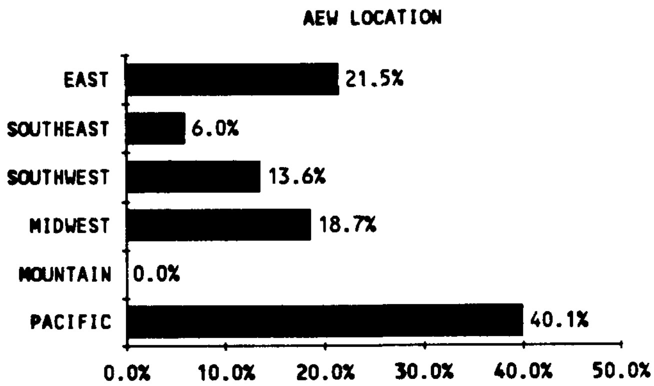
- o AEW continues its investment philosophy of actively managing both the investment asset and its capital structure.
- o A Phoenix project was written off in Fund III during the third quarter of 1989, depressing fund returns. Heavily leveraged equity investments in Fund IV are producing low current cash returns. Going forward, AEW expects fund returns to improve. In the near term, AEW plans aggressive management/leasing activities to increase current returns.
- o As portfolio investments mature, underperforming properties and properties that have reached maximum potential in Fund III and Fund IV are being considered for sale.
- o AEW will add apartment investments in Fund V to add to Fund V's diversity and strength.

QUANTITATIVE EVALUATION FOR AEW/STATE STREET FUNDS III, IV, V AGGREGATE AS OF 12/31/89

COMMITMENT:	**$50,000,000**
FUNDED COMMITMENT:	**$50,000,000**
MARKET VALUE OF FUNDED COMMITMENT:	**$55,504,979**
CASH DISTRIBUTIONS:	**$0**
INCEPTION DATE(S):	**Fund III - September 1985** **Fund IV - September 1986** **Fund V - December 1987**
INTERNAL RATE OF RETURN (IRR): (annualized, since inception)	**Fund III - 2.9%** **Fund IV - 2.4%** **Fund V - 7.1%**

DIVERSIFICATION PROFILE (AS OF 12/31/89)





STAFF COMMENTS AND RECOMMENDATIONS:

The Alternative Investment Committee and staff have been disappointed with AEW/State Street's performance to date. Additional investments with AEW/State Street are not recommended at this time.

ATTACHMENT E

ANNUAL REVIEW SUMMARY
RREEF USA FUND III
March 30, 1990

MANAGER REPRESENTATIVES: Jim King, Martin Cannon

SBI ASSETS UNDER MANAGEMENT: $79,917,574

BACKGROUND AND DESCRIPTION: RREEF USA Fund III is managed by the Rosenberg Real Estate Equity Funds. The SBI's $75 million commitment was made to the Fund in May 1984. As of December 31, 1988 the entire commitment had been funded. The Fund has a twelve year term. Typically, the Fund purchases 100 percent of the equity of its properties with cash and does not utilize leverage or mortgages. Properties are diversified by location and type. RREEF's in-house staff manages the real estate properties. The firm's primary offices are located in San Francisco and Chicago.

QUALITATIVE EVALUATION:

The evaluation noted several items of interest:

- RREEF USA Fund III is now fully invested and will make no new acquisitions. Cash available in the fund will be used for improvements on existing properties. Three of four regional malls have been renovated as have 2 of 4 office buildings. Plans to renovate and expand the fourth mall are almost complete.

- RREEF is actively engaged in selling a poorly performing Atlanta office building. It will be the Fund's first property sale.

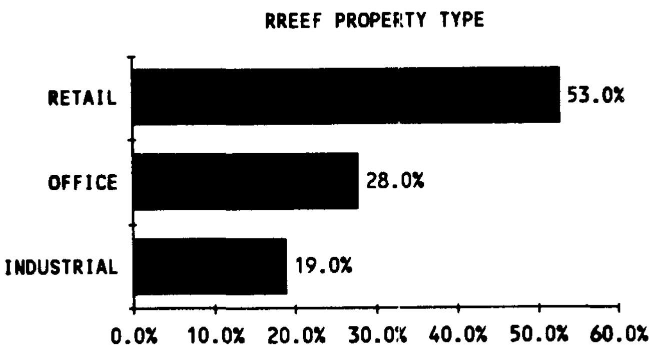
- A San Francisco office building continues to be a slow starter although a building moratorium in the city is starting to cause rents to firm and the long term prospects for this property to improve. A New York City office building was appraised in early 1990 and its value will be written down in the Fund's first quarter 1990 report.

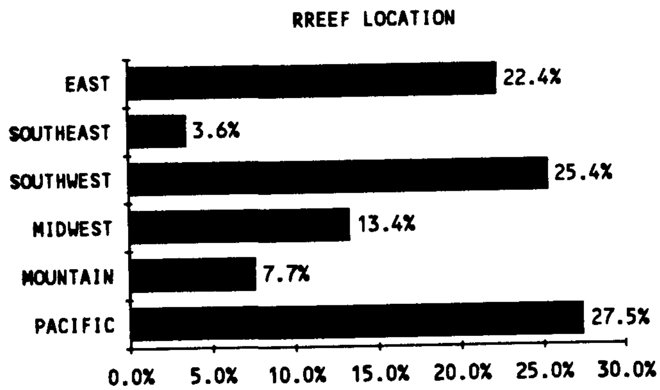
- RREEF made several significant organizational changes in 1989 designed to promote several new partners to the firm's strategic policy making group.

QUANTITATIVE EVALUATION FOR RREEF USA FUND III AGGREGATE AS OF 12/31/89

COMMITMENT	$75,000,000
FUNDED COMMITMENT:	$75,000,000
MARKET VALUE OF FUNDED COMMITMENT:	$79,917,574
CASH DISTRIBUTIONS:	$13,001,286
INCEPTION DATE:	May 1984
INTERNAL RATE OF RETURN (IRR): (annualized, since inception)	5.8%

DIVERSIFICATION PROFILE (AS OF 12/31/89)





STAFF COMMENTS AND RECOMMENDATIONS:

At this time, the Alternative Investment Committee and staff do not recommend additional investments with RREEF. In comparison to the SBI's other closed-end real estate managers, RREEF appears to have been less successful in targeting current, strong real estate markets. In addition, RREEF's performance since inception has lagged that of other managers.

ATTACHMENT F

OIL AND GAS CONSULTANT PROFILE

I. BACKGROUND DATA

CONTACT:	Gene Graham
ADDRESS:	Eight Greenway Plaza Houston, Texas 77046
TELEPHONE:	(713) 877-8257

II. ORGANIZATION AND STAFF

Gene Graham is currently one of seven principals of the Sterling Group, a private financial company in Houston acting as both principal and investment banker in leveraged buyout transactions. Sterling also provides financial advisory services to a limited number of corporate clients, primarily firms in the energy industry.

Prior to joining The Sterling Group in May 1987, Ms. Graham was the general manager of J.P. Morgan Investment's Petroleum Fund, a commingled pension trust fund for direct investments in oil and gas. For four years, she was responsible for generating, analyzing and negotiating the Fund's investments. During her tenure with the Petroleum Fund, Ms. Graham was involved with over $100 million in producing property acquisitions, as well as development and exploratory drilling programs. From 1979 to 1982, prior to managing the Fund, she had extensive production related lending experience.

III. SERVICES

Gene Graham provides the SBI with economic and technical analysis necessary to effectively screen prospective oil and gas investments. In addition, Ms. Graham assists in analyzing components of existing investments. Specific services include:

1. Reference checks on the investment manager and/or operating company;

2. An analysis of the manager's or company's track record (performance to date, as well as assumptions used for estimating long-term returns);

3. An engineering and/or geologic consulting report, as required, to assess relevant technical aspects of the offering. For project specific offerings, a consultant's report would include an assessment of the

overall quality of the reservoirs, ultimate expected recoveries, production decline curves, development potential and costs, operating concerns and costs, and the overall economics of the project's area of interest;

4. An assessment of the offering to test the potential impact on the SBI's expected rate of return given various assumptions related to economic scenarios and reservoir performance variables; and

5. Participation, as required, in closing procedures related to transactions approved for investment by the State.

IV. FEE AND TERM

For each advisory project undertaken, the SBI pays Ms. Graham a consulting fee estimated to be between $4,000-$5,000 per individual project review. The total cost of the proposed consulting arrangement with Ms. Graham will be a maximum of $20,000 per year.

The SBI may, at any time, terminate Ms. Graham's work on a project; however, the Board is obligated to pay Ms. Graham for all advisory services rendered up to such time of termination.

ATTACHMENT G

REAL ESTATE MANAGER PROFILE

I. BACKGROUND DATA

FUND MANAGER:	Copley Real Estate Advisors
TYPE OF FUND:	Specialty Real Estate - Value Fund
TOTAL FUND SIZE:	$500 Million to $1 Billion
INTERVIEW DATE:	May 2, 1990
MANAGER CONTACT:	Jack Philips
ADDRESS:	399 Boylston Street Boston, MA 02116
TELEPHONE:	617-578-1200

II. ORGANIZATION AND STAFF

The fund will be managed by Copley Real Estate Advisors in a joint venture between Copley, the Robert M. Bass Group and General Electric Capital Corporation.

Copley Real Estate Advisors will serve as the investment advisor to the pension funds investing in The Value Fund. The resources of Copley's 160 person staff will be utilized by the Fund to identify and review proposed investments to be made by the Fund and to undertake ongoing management responsibilities. Copley will also utilize its local developer partners in specific property investment situations that The Fund might undertake. Currently, Copley has over $14 billion of real estate investments under management.

Like Copley, the resources of the staff of the Robert M. Bass Group will also be available to be utilized by The Fund in analyzing and structuring investments. In the past four years, the Robert M. Bass Group and its affiliates have acted as lead investors in seventeen acquisition transactions, each of greater than $100 million in value. In the aggregate, these transactions have resulted in the purchase, management and development of assets valued in excess of $37 billion. They include the acquisition of a major savings and loan institution, with a substantial portfolio of troubled real estate from a FSLIC receivership and the acquisition of a corporation owning a portfolio of major hotel properties.

GE Capital, like Copley and the Robert M. Bass Group, will act as a source of investments for the Fund and will make the resources of its professional staff available to assist the Fund in analyzing acquisition of real estate assets. GE Capital, an indirect wholly owned subsidiary of General Electric Company, is active in many aspects of the real estate and finance industries. Its asset management group manages a portfolio of real estate whose value exceeds $1.3 billion, and its real estate management group provides services in the acquisition and disposition of real estate assets, on-site property management and maintenance, and leasing.

III. INVESTMENT STRATEGY

The Fund will invest approximately $1 billion of equity to acquire real estate assets, primarily on an opportunistic basis. The Fund is expected to acquire major real estate portfolios, including many controlled by sellers under intense financial pressure. It may engage in the leveraged acquisition of:

- public or private asset-based operating companies where interests in real estate assets constitute a significant part of the company.
- real estate operating companies, including thrift subsidiaries that own real estate; real estate assets disposed of in connection with corporate restructurings.
- real estate portfolios from shrinking thrifts and/or the government (i.e., the FDIC, FSLIC, RTC).
- other opportunities which may be suitable for the Fund.

The core of the Fund will be made up of high grade investment real estate designed to be held for the long term, while the balance of the assets acquired in portfolios will be disposed of as market conditions and management efforts make sales attractive. The Fund may invest in a variety of asset types including industrial, office, retail and residential properties in geographically diverse regions.

IV. GENERAL PARTNER'S COMMITMENT

Copley, the Robert M. Bass Group and GE Capital will collectively contribute $230 million of capital to the fund at the $1 billion level.

V. DISTRIBUTIONS

During the first five years, it is anticipated that proceeds will be reinvested rather than distributed. After five years, operating revenues, sales and refinancing proceeds will be distributed to the partners in direct proportion to their initial capital contributions until all partners have earned a 13% internal rate of return. After the partners have received a 13% internal rate of return, 30% of the revenues and proceeds of the Fund will be distributed to the general partners, and the limited partners (including The Copley Value Fund Separate Account) will receive 70% of revenues and proceeds. After the limited partners have earned a 16% internal rate of return, distributions will be made 65% to the limited partners and 35% to the general partners.

Copley, as advisor and manager of the Copley Value Fund Separate Account, will be paid an annual base management fee equal to 75 basis points of the gross fair market value of the Separate Account's proportionate interest in the Fund. Additionally, Copley will be entitled to incentive compensation equal to 15% of distributions to the Separate Account and of the net liquidating value of the Separate Account's interest in the Fund in excess of an earned 13% internal rate of return.

VI. TERM

Fifteen years.

ATTACHMENT H

REAL ESTATE MANAGER PROFILE

I. BACKGROUND DATA

FUND MANAGER:	LaSalle Advisors
TYPE OF FUND:	Specialty Real Estate - Income Parking Fund
TOTAL FUND SIZE:	$75 to $200 Million
INTERVIEW DATE:	May 2, 1990
MANAGER CONTACT:	Chris Burke
ADDRESS: Chicago, IL 60603	11 South LaSalle Street
TELEPHONE:	312-782-5800

II. ORGANIZATION AND STAFF

LaSalle Advisors has been in the real estate investment management business since 1971 and exclusively for tax-exempt clients for the last ten years. The firm is headquartered in Chicago and operates on a national basis with principal offices in five cities and sixty other locations throughout the country. It provides investment management, development, finance, acquisition, disposition, property management and leasing services to major corporations and institutions.

In the past ten years, through its commingled funds, separate accounts, and Urban Site Venture programs, LaSalle Partners has focused on the income opportunities associated with parking, identifying significant profit enhancements through the aggressive management of the parking components linked to these investments. The firm currently manages more than 85,000 parking spaces throughout the U.S.

LaSalle, with a staff of more than 500 professionals, manages over $4.0 billion of real estate assets for tax-exempt clients through a series of closed-end funds and a limited number of separate accounts.

III. INVESTMENT STRATEGY

The Fund will use the extensive resources of the General Partner to identify parking garage investment opportunities in selective markets throughout the United States. The Fund's goal is to acquire parking facilities on an all-cash basis to maximize current return to the investors. In special situations, the Fund may develop new parking facilities but only when yield requirements can be maintained. The Fund intends to focus on markets where:

- The supply of parking spaces is declining in proportion to the amount of office space available;
- Physical or governmental constraints limit future garage development;
- The automobile is the preferred means of transportation to and from employees' place of business; and
- Market inefficiencies can be exploited.

IV. DISTRIBUTIONS

Annually, cash flow will be distributed 85% to the Limited Partners and 15% to the General Partners. Net proceeds from sale or refinancing will be distributed according to the following schedule:

- First, to the Limited Partners to return contributed capital;
- Second, 80% to the Limited Partners and 20% to the General Partner; and
- Third, to the extent the Limited Partners have not received a 10% internal rate of return on contributed capital, proceeds from the General Partner will be allocated to the Limited Partners.

IV. TERM

Fifteen Years.

ATTACHMENT I

VENTURE CAPITAL MANAGER PROFILE

I. BACKGROUND DATA

FUND MANAGER:	Zell/Chilmark
TYPE OF FUND:	Corporate Restructuring Situations Venture Capital Limited Partnership
TOTAL FUND SIZE:	$250 Million to $1 Billion
INTERVIEW DATE:	April 30, 1990
MANAGER CONTACT:	Sam Zell
ADDRESS:	Two North Riverside Plaza Chicago, IL 60606
TELEPHONE:	312-454-0100

II. ORGANIZATION AND STAFF

Sam Zell and David Schulte of Chilmark Partners will have primary responsibility for the fund.

Samuel Zell is Chairman of the Board of Equity Financial and Management Company. Through this entity, founded in 1968, and other affiliated entities, Zell is involved in numerous corporate and real estate investments typically in countercyclical, financially distressed and undervalued situations.

Zell's corporate investments have aggregate annual revenues of approximately $5 billion and total assets of approximately $6 billion. In addition, Zell has a controlling interest in real estate valued in excess of $3 billion.

Chilmark Partners is a merchant banking partnership formed by David Schulte in June 1984. Since formation, Chilmark has advised a number of companies on the restructuring of their businesses in conjunction with recapitalizations or on investments in rejuvenation situations. The firm's clients have included Itel Rail; Castle & Cooke, Inc.; Middle South Utilities, Inc.; Ideal Basic; Global Marine Inc.; Clark Oil; Southern Pacific; and Allis-Chalmers.

Prior to founding Chilmark, Mr. Schulte was responsible for Salomon Brothers Inc.'s corporate reorganization and asset redeployment group which he created in 1980. While at Salomon, Mr. Schulte played an integral role in many of the major corporate restructurings/renovations of the time, including Chrysler Corporation and International Harvester Company.

III. INVESTMENT STRATEGY

The investment strategy of the Fund is to invest in corporate restructuring and rejuvenation situations. The partnership will invest primarily in the assets, debt and/or common and preferred stock of companies with a fair market value of at least $100 million.

The creation of this partnership reflects opportunities which the General Partner believes are emerging in the rejuvenation/recapitalization arena. In many instances, corporate debt will require repayments that cannot be supported by cash flows. A slowdown in the economy or a recession will exacerbate these problems and dramatically increase the number and variety of rehabilitation investment opportunities. The interest of the partnership will be to provide a resolution of these illiquidity problems. An infusion of capital, credibility, and managerial expertise will be required, and the partnership will be able to offer all three.

IV. GENERAL PARTNER'S COMMITMENT

Zell/Chilmark will commit 10% of total partnership capital as General Partner, on a pro rata basis with Limited Partners, up to a maximum commitment of $50 million.

V. TAKEDOWN SCHEDULE

It is anticipated that the Commitments will be drawn down over a period of up to six years on an as needed basis.

VI. DISTRIBUTIONS

A summary of the distribution schedule is:

- First, 100% to all partners pro rata until all partners have received a return of capital and a 10% annual internal rate of return.
- Second, 80% to all Partners pro rata to their funded Commitments and 20% to the General Partner until such time as all Partners have received an internal rate of return, compounded annually, of 12.5% on all of their funded Commitments.
- Third, 100% to the General Partner until such time as the General Partner has received, as its carried

interest, 20% of the cumulative distributions in excess of the return of capital made to all Partners;

- Fourth, 80% to all Partners pro rata to their funded Commitments and 20% to the General Partner until such time as all Partners have received an internal rate of return, compounded annually, of 30% on all of their funded Commitments; and
- Fifth, thereafter 70% to all Partners pro rata to their funded Commitments and 30% to the General Partner.

VII. MANAGEMENT FEE

A management fee will be payable equal to 2% per annum of the commitments during years 1 through 6. After the sixth year of the Partnership, the management fee payable to the General Partner shall be reduced to 2% per annum of the aggregate amount invested by the Partnership in investments that have not yet been the subject of dispositions.

VIII. TERM

The Partnership will terminate 10 years from the closing, unless extended at the discretion of the General Partner for up to two additional one-year periods.