MINNESOTA STATE BOARD
OF INVESTMENT
MEETING
March 13, 1991
&
INVESTMENT ADVISORY
COUNCIL MEETING
March 12, 1991

AGENDA
STATE BOARD OF INVESTMENT
MEETING
Wednesday, March 13, 1991
8:30 A.M. - Room 118
State Capitol
Saint Paul

		TAB
1.	Approval of Minutes of December 18, 1990 Meeting	
2.	Resolution on Escheated Property (M. McGrath)	
3.	Appointment of Members to the Investment Advisory Council	
4.	Report from the Executive Director (H. Bicker)	
	A. Quarterly Investment Review (October 1-Dec. 31, 1990)	A
	B. Portfolio Statistics (December 31, 1990)	B
	C. Administrative Report	C
	1. Budget and Travel Reports	
	2. Legislative Report	
	3. Report on GIC Bid for the Public Facilities Authority	
	4. Deferred Compensation Plan	
5.	Reports from Investment Advisory Council Committees (J. Yeomans)	
	A. Asset Allocation Committee	D
	1. Reporting Format Revisions	
	2. Preliminary Investment Policy for the Assigned Risk Plan	
	3. Approval of Position Paper on Tactical Asset Allocation	
	B. Equity Manager Committee	E
	1. Review of Manager Performance	
	2. Special Review of IDS	
	3. Approval of Contract Renewals (Concord, Franklin, GeoCapital, Rosenberg, Sasco)	
	C. Fixed Income Manager Committee	F
	1. Special Review of IAI	
	2. Review of Manager Performance	
	3. Approval of Contract Renewal (BEA Associates)	
	4. Proposal to Restructure the Bond Segment of the Basic Retirement Funds	
	D. Alternative Investment Committee	G
	1. Report on Fund Manager Annual Reviews	
	2. Approval of Commitment to Venture Capital Manager (KKR)	
6.	Report from the Task Force on South Africa	H
7.	Report from the Assigned Risk Plan Manager Selection Committee	I
8.	Report from the Wellspring Task Force on Corporate Takeovers (J. Growe)	

MINNESOTA
STATE
BOARD OF
INVESTMENT

Board Members:

Governor
Arne H Carlson

State Auditor
Mark B Dayton

State Treasurer
Michael A McGrath

Secretary of State
Joan Anderson Growe

Attorney General
Hubert H Humphrey III

Executive Director:

Howard J Bicker

Suite 105, MEA Bldg.
55 Sherburne Avenue
St. Paul, MN 55155
(612)296-3328
FAX (612)296-9572

MINUTES

STATE BOARD OF INVESTMENT

December 18, 1990

The State Board of Investment (SBI) met at 10:00 A.M. on Tuesday, December 18, 1990 in Room 123, State Capitol, Saint Paul, Minnesota. Secretary of State Joan Anderson Growe, Acting Chair; State Treasurer Michael A. McGrath; and Attorney General Hubert H. Humphrey III were present. State Auditor Arne H. Carlson and Governor Rudy Perpich were absent.

The minutes of the September 19, 1990 meeting were approved.

EXECUTIVE DIRECTOR'S INVESTMENT REPORT

Mr. Bicker referred Board members to the Basic Funds' investment report for the third quarter 1990 in the meeting materials. He stated that the third quarter produced negative numbers in contrast to the previous quarter when the Basic Funds' performance was in the top third of comparable funds for the year and the top third for five years.

He stated that the Basic Funds' rate of return was -9.4 percent for the quarter as the stock market dropped in reaction to the Iraqi invasion of Kuwait. He stated that staff has emphasized repeatedly that the Basic Funds are invested for the long term and that down quarters are expected. He added that the Basic Funds' asset allocation, with its emphasis on stocks, has provided strong returns over time.

In response to a question from Ms. Growe, Mr. Bicker stated that the stock market has regained about one-third of the decline during the first two months of the fourth quarter. He reported that the market is in a much better position than it was after the invasion of Kuwait and that staff feels more comfortable buying stocks at the current market levels than at the higher market levels of June or July. In response to a question from Mr. McGrath, Mr. Bicker stated that the stock market has declined before and rebounded and that most people believe the stock market will perform well in the long run. He observed that over the past five years, even with the current decline and the decline in October 1987, stocks have outperformed bonds and other investments. In response to a question from Ms. Growe, Ms. Yeomans stated that she believed the risk is too great to get out of the stock market even during this uncertain period. She stated that the cost of being out of the market at a time when it begins to perform well severely damages portfolio returns. She stated that as long-term investors in the stock market, the SBI will experience painful periods of negative returns but that in the long run portfolio returns will be greater. In response to a question from Mr. Humphrey, Ms. Yeomans stated that the Basic Funds can take a very long-term perspective of twenty to thirty years. She stated that there has never been a period that long in which the stock market has failed to perform.

Mr. Bicker stated that the Post Fund generated earnings sufficient to provide a 5.1 percent benefit increase effective January 1, 1991. He stated that the increase is 0.4 percentage points greater than the inflation rate. He then referred members to the Portfolio Statistics in the meeting materials.

EXECUTIVE DIRECTOR'S ADMINISTRATIVE REPORT

Mr. Bicker referred Board members to the budget and travel reports in the meeting materials. He then referred members to the report on rebalancing. He stated that with the market decline in August 1990 the Basic Funds' equity exposure dropped below the SBI's rebalancing targets. He stated that staff transferred $160 million from bonds and cash into stocks. He explained that most of the money was transferred to the index fund and some was transferred to active managers. Mr. Bicker then referenced the 5.1 percent benefit increase for retirees effective January 1991, and the tentative schedule for Board meetings for calendar 1991.

ADMINISTRATIVE COMMITTEE REPORT

Mr. McGrath reported that the Administrative Committee had two items requiring action by the Board and one information item. He stated that the Committee recommends the Board establish a manager selection committee for the Workers Compensation Assigned Risk Plan to choose one or more manager finalists for Board decision at the March 1991 meeting. He stated that the Legislature transferred investment responsibility for the Assigned Risk Plan to the State Board of Investment effective May 1, 1991. Mr. McGrath then moved approval of the Committee recommendation. Mr. Humphrey seconded. The motion was approved.

Mr. McGrath then stated that the Committee recommends the Board execute amendments to contracts with companies offering annuity product options to participants of the statewide Deferred Compensation Plan. He stated that there have been housekeeping amendments to the original contracts with Minnesota Mutual/ Northwestern National Life and with Great West Life and that the SBI should be added as a signator to those amendments. In addition, he stated that Minnesota Mutual Life proposes to offer new investment options to participants in the statewide deferred compensation plan and that the SBI needs to approve these additions. He moved approval of the Committee recommendations. Mr. Humphrey seconded. The motion was approved.

Mr. McGrath then stated that the Executive Director's status report on the 1992-1993 biennial budget submission was provided in the meeting materials. In response to a question from Ms. Growe, Mr. McGrath stated that the budget was submitted to the Department of Finance in a timely fashion and took into account the department's guidelines requiring state agencies to absorb all projected salary and inflationary increases by making programmatic reductions within their current budgets.

INVESTMENT ADVISORY COUNCIL COMMITTEE REPORTS
EQUITY MANAGER COMMITTEE

Ms. Yeomans stated that it was an unfavorable quarter for active manager performance. She stated that staff conducted an in-depth review of Forstmann-Leff. She reported that the Committee and the IAC share staff's confidence in the firm's investment process and abilities. She stated the Committee believes no action with respect to Forstmann-Leff is required at this time. In response to a question from Ms. Growe, Mr. Bicker stated that the equity managers' negative performance in the third quarter was the result of the market going down but that individual managers performed in-line with their individual benchmarks. Ms. Yeomans then reported that the implementation of the tilted index fund is proceeding according to plan and most likely will be completed by the end of 1990.

FIXED INCOME MANAGER COMMITTEE

Ms. Yeomans reported that the Committee reviewed the performance of the active and enhanced index fixed income managers. She stated that the enhanced index managers performed in-line with the bond index. She stated that the active managers underperformed the bond index by a relatively small amount. She stated that there was no action required at this time. She then reported that staff conducted an in-depth review of Lehman Ark, one of the active managers. She stated that the Committee agreed that Lehman Ark was retained in 1984 to perform very much like an index manager. She explained that at the time the manager was hired, a bond index was not available as an investment vehicle. She stated that with two enhanced index managers now on board, the SBI no longer requires a management style like Lehman Ark. She stated that the Committee agrees that a decision concerning Lehman Ark's continuance as a manager should be postponed until later in 1991 when the entire fixed income manager program is expected to be restructured.

Finally, Ms. Yeomans reported on the results of the 1990-1993 guaranteed investment contract bid for the Supplemental Investment Fund. Mr. McGrath commended the staff for obtaining a favorable rate by combining the bids of two different insurance companies.

ALTERNATIVE INVESTMENT COMMITTEE

Ms. Yeomans reported that the Committee held annual review sessions with four venture capital managers. She stated that the Committee determined that Matrix has been performing well, that Inman & Bowman and Allied were performing adequately, and that DSV was very slow to make investments. In response to a question from Ms. Growe, Ms. Yeomans stated that the State Board cannot terminate its partnership investment in DSV, but can attempt to persuade the manager to address shortcomings.

Ms. Yeomans stated that the Committee has two items requiring Board action. She stated that the first is a recommendation to invest in the Zell/Merrill Lynch Real Estate Opportunity Partners II Limited Partnership. She stated that the fund is the second fund Zell and Merrill Lynch have done together and that it is expected to be $1 billion in size. She explained that Sam Zell has been a very successful investor in real estate for over twenty years, identifying distressed properties that he can purchase at very favorable terms. Mr. McGrath moved approval of the Committee recommendation to authorize a commitment of up to $100 million to the fund. The motion was approved.

Ms. Yeomans stated that the second recommendation is for a follow-on investment with Heitman Advisory, a Chicago based real estate firm. She stated that the SBI has previously authorized investments totalling $70 million in Heitman Funds I, II, and III. She stated that the objectives for this $100 million to $300 million fund would be very similar to their previous funds. Mr. McGrath moved approval of the Committee recommendation. Mr. Humphrey seconded. The motion was approved.

OTHER BUSINESS

Ms. Growe then inquired about vacancies on the Investment Advisory Council. Mr. Bicker responded that there are two vacancies to be filled at the March 1991 Board meeting. He stated that the SBI would utilize the Open Appointments process to announce the vacancies. He stated that a Review Committee of Board member designees would review applications and recommend candidates for Board approval.

The meeting was adjourned at 10:30 A.M.

Respectfully submitted,

Howard J. Bicker

Howard J. Bicker
Executive Director

AGENDA

INVESTMENT ADVISORY COUNCIL MEETING

Tuesday, March 12, 1991
2:00 P.M.
MEA Building - Conference Rooms "A" & "B"
Saint Paul

		TAB
1.	Approval of Minutes of December 17, 1990 Meeting	
2.	Report from the Executive Director (H. Bicker)	
	A. Quarterly Investment Review (October 1-Dec. 31, 1990)	A
	B. Portfolio Statistics (December 31, 1990)	B
	C. Administrative Report	C
	1. Budget and Travel Reports	
	2. Legislative Report	
	3. Report on GIC Bid for the Public Facilities Authority	
	4. Deferred Compensation Plan	
3.	Reports from Investment Advisory Council Committees	
	A. Asset Allocation Committee (J. Yeomans)	D
	1. Reporting Format Revisions	
	2. Preliminary Investment Policy for the Assigned Risk Plan	
	3. Approval of Position Paper on Tactical Asset Allocation	
	B. Equity Manager Committee (D. Veverka)	E
	1. Review of Manager Performance	
	2. Special Review of IDS	
	3. Approval of Contract Renewals (Concord, Franklin, GeoCapital, Rosenberg, Sasco)	
	C. Fixed Income Manager Committee (G. Norstrem)	F
	1. Special Review of IAI	
	2. Review of Manager Performance	
	3. Approval of Contract Renewal (BEA Associates)	
	4. Proposal to Restructure the Bond Segment of the Basic Retirement Funds	
	D. Alternative Investment Committee (K. Gudorf)	G
	1. Report on Fund Manager Annual Reviews	
	2. Approval of Commitment to Venture Capital Manager (KKR)	
4.	Report from the Assigned Risk Plan Manager Selection Committee	I

MINNESOTA
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Suite 105, MEA Bldg.
55 Sherburne Avenue
St. Paul, MN 55155
(612)296-3328
FAX (612)296-9572

MINUTES

INVESTMENT ADVISORY COUNCIL

December 17, 1990

The Investment Advisory Council met on Monday, December 17, 1990 at 2:00 P.M. in the MEA Building, Saint Paul, Minnesota.

MEMBERS PRESENT:

John Bohan; Jim Eckmann; Elton Erdahl, Paul Groschen; Ken Gudorf; Peter Hutchinson; Vernell Jackels; David Jeffery; Malcolm McDonald; Gary Norstrem; Joseph Rukavina; Mary Most Vanek; Raymond Vecellio; and Jan Yeomans.

MEMBERS ABSENT:

Harry Adams; and Debbie Veverka.

SBI STAFF:

Howard Bicker; Jim Heidelberg; Mansco Perry; Harriet Balian; and Charlene Olson.

OTHERS ATTENDING:

Gary Austin; Ed Burek; Christie Eller; James Gelbmann, State Auditor's Office; John Gardner; John Hagman, REAM; Ralph Jewell; John Manahan; Peter Sausen; Ed Stuart, REAM; and John Yunker.

The minutes of the September 18, 1990 meeting were amended to correct an error in member attendance and approved.

EXECUTIVE DIRECTOR'S INVESTMENT REPORT

Mr. Bicker referred members to the performance results for the third quarter 1990 in the meeting materials. He stated that the Basic Funds at the end of the second quarter 1990 were ranked in the top third for the year and top third for five years among the universe of public and private funds. He observed that the stock market declined by about 15 percent during the third quarter. He stated that the Basic Funds' rate of return was -9.4% for the quarter, a return that placed the Funds in the bottom quartile for one year and approximately at the median for the five year period. He stated that the market has since regained about one third of the decline experienced in the third quarter.

Mr. Bicker stated the Post Fund generated earnings sufficient to provide a 5.1 percent benefit increase for retirees effective January 1, 1991. Mr. Bicker then referred members to the Portfolio Statistics in the meeting materials.

EXECUTIVE DIRECTOR'S ADMINISTRATIVE REPORT

Mr. Bicker referred members to the budget and travel reports in the meeting materials. He then referred members to the rebalancing report on the Basic Funds. He stated that with the market movement in August the stock component of the Basic Funds declined to a level below its long term allocation target. He stated that the SBI's rebalancing guidelines call for the Basic Funds to be rebalanced when its actual asset mix moves significantly above or below long term targets. He reported that staff transferred $160 million from bonds and cash to equities. He stated that most of the money was transferred into the index fund and some was transferred to active managers.

Mr. Bicker then referenced the 5.1 percent benefit increase generated from the Post Fund and the tentative schedule of IAC and Board meeting dates for calendar 1991.

ADMINISTRATIVE COMMITTEE REPORT

Mr. Bicker reported that the Committee had several information items. He stated that the Committee reviewed the SBI's fiscal 1992-1993 budget. He stated that staff submitted the biennial budget according to guidelines drawn by the Department of Finance. He stated that the SBI anticipates a reduction in budget as a result of the current legislative session but that the magnitude and the effect of the reduction is yet to be known.

He next reported that the Legislature transferred investment responsibility for the Workers Compensation Assigned Risk Plan from the Department of Commerce to the State Board of Investment effective May 1, 1991. He stated that the Plan's assets are currently managed by an outside vendor whose contract expires on that date. He stated that staff and the Administrative Committee recommend that the Board form a manager selection committee to make appropriate recommendations to the Board at its March 1991 meeting concerning potential investment managers to manage the $250 million portfolio. In response to a question from Ms. Yeomans, Mr. Bicker stated that at this time staff believes the portfolio should not be commingled with other moneys invested by the SBI because of the particular needs of the Assigned Risk Plan. He added that staff is reviewing a recently completed actuarial study of the Plan and will meet with individuals from the Commerce Department and the current portfolio manager to learn more about the Plan's needs. He stated that the Asset Allocation Committee will meet to establish an appropriate asset allocation and management structure for the portfolio.

Mr. Bicker then reported that the Committee made two recommendations concerning the statewide Deferred Compensation Plan. He explained that there have been several administrative amendments to the contracts with Minnesota Mutual/Northwestern Life and with Great West Life. He stated that these amendments have not been signed by the Board but that legal counsel believes the Board must approve the changes. He stated that the second recommendation concerns a request by Minnesota Mutual to expand the number of investment options the company makes available to participants in the plan. In response to a question from Mr. Bohan, Mr. Bicker stated that the contracts with the outside vendors were unclear as to the responsibilities of the SBI and Minnesota State Retirement System. He stated that legal counsel believes the SBI has the responsibility to review investment options offered to plan participants, and that staff has been meeting with and evaluating the insurance companies. He stated that MSRS administers the plan and is responsible for communications with participants. He stated that he wants to have people understand the administrative cost and management fees of the deferred compensation products they are buying. He added that staff believes it makes sense to rewrite the contracts to make clear the responsibilities of the various parties involved. Mr. Groschen stated that he believed participants would not understand information concerning administrative costs of a fixed annuity product. He stated that the individual only wants and needs to know the stated rate on the fixed product just as if he or she were going to a bank to purchase a certificate of deposit. He stated that the individual understands the stated rate and does not need to know the financial institution's indirect administrative expenses. He stated he believed the Deferred Compensation Plan would suffer if the insurance companies were required to disclose their indirect administrative expenses. He said he felt that the vendors of the educational 403 (b) tax sheltered annuities would position their products as lower cost because they are not required to disclose such expenses.

INVESTMENT ADVISORY COUNCIL COMMITTEE REPORTS
EQUITY MANAGER COMMITTEE

Mr. Eckmann reported that the Equity Manager Committee reviewed the performance of the active managers. He stated that all the managers generated negative returns with the aggregate performance being slightly behind the benchmark and a bit below the Wilshire 5000. He stated that the aggregate manager performance for the five year period exceeded the aggregate benchmark but trailed the Wilshire 5000 slightly. Mr. Bicker stated that the underperformance relative to the Wilshire 5000 is the result of the small capitalization stock bias in the portfolio. He stated that the bias should be rectified with the implementation of the tilted index fund.

Mr. Eckmann reported that the implementation of the tilted index fund is proceeding as expected. He then reported that staff conducted an in-depth review of Forstmann-Leff. He stated that staff and the Committee found the firm to have a strong organization, to adhere to and consistently implement its investment strategy, and to add value to its benchmark. He stated that staff expressed one concern which related to the turnover of professional staff on the account. He stated that the concern has been addressed by having one of the firm's principals assume responsibility for it. He stated that staff and the Committee recommend that Forstmann-Leff be continued as a manager. In response to questions from Mr. McDonald and Mr. Vecellio, Mr. Eckmann explained that the tilted index fund is designed to eliminate the small capitalization stock bias so that when combining the index and active managers the value added may be attributed to active management rather than to an unforeseen sector bias. He stated that the tilted index fund would be adjusted from time to time when manager benchmarks change.

FIXED INCOME MANAGER COMMITTEE

Mr. Norstrem reported that the Committee reviewed the performance of the semi-passive managers and determined that the managers are performing about as expected. He stated that their performance is very close to the returns of the index. He stated that additional allotments given to the managers have dampened their performance somewhat. Mr. Norstrem stated that the Committee determined that the active managers in aggregate underperformed their benchmarks during the quarter but have matched the aggregate benchmark over the five year period.

Mr. Norstrem then reported that staff performed an in-depth review of Lehman Ark. He stated that staff and the Committee determined that Lehman Ark has underperformed its benchmark since inception. He stated that the Committee concurs with staff's conclusion that Lehman Ark be retained until a replacement is found which will occur only after staff reviews the entire active manager program. He stated that staff has begun the review process and is interviewing potential managers. He stated that it is likely that new or replacement managers will be recommended for Board approval before the end of fiscal year 1991. Mr. Bicker stated that when the Board initially hired external bond managers a primary objective was to provide portfolio diversification. He stated that investing in a bond index was not available as it is today. He explained that Lehman Ark essentially duplicates the role now played by the enhanced index managers. He stated that the SBI is now moving toward hiring specialty managers and controlling volatility with the enhanced index managers.

ALTERNATIVE INVESTMENT COMMITTEE

Mr. Gudorf reported that staff and the Committee conducted annual reviews of four venture capital managers. He stated that staff and the Committee have been most satisfied with Matrix Partners, have been less satisfied with Inman & Bowman and with Allied, and have been disappointed with the performance of DSV. He stated that DSV has drawn down the SBI's entire commitment, but has been very slow to invest the moneys in venture capital investments. He stated that the Committee continues to pursue with other limited partner investors the return of cash not committed to venture investments.

Mr. Gudorf then reported that the Committee recommends two investments for approval. He stated the first is the Zell/Merrill Lynch Real Estate Opportunity Partners II Limited Partnership, a new fund of between $250 million and $1 billion. He stated that the fund objective is to invest in troubled real estate. He stated that the Committee believes Sam Zell has a unique background and ability in real estate to make these investments. He stated the Committee recommends the SBI invest up to $100 million. He then stated that the second recommendation is a follow-on investment of $30 million in Heitman Fund V. He stated that the SBI has invested $70 million in total in Heitman Funds I, II, and III and that the Committee believes Heitman's performance to be the best of the SBI's real estate managers. Mr. Gudorf then stated that the Basic Funds' commitments to real estate remain less than the target allocation and that these two investments would still not bring the total up to the allocation target. He stated that he believed the overall performance of the real estate portfolio has met the basic objective of providing an inflation hedge. He stated that he believed with the exception of one Apache investment the overall performance of oil and gas has been successful and that the venture capital portfolio has been performing as expected. Ms. Yeomans then requested a motion to approve the Committee recommendations. Mr. McDonald moved approval. Mr. Hutchinson seconded. The motion was approved.

The meeting adjourned at 2:55 P.M.

Respectfully submitted,

Howard J. Bicker

Howard J. Bicker
Executive Director

Tab A

RETURN OBJECTIVES

Basic Retirement Funds

$6.9 Billion Market Value

Total Return	Period Ending 12/31/90 Actual	Compared to Objective
Total Fund over 10 years	12.0%	7.5 percentage points above
■ Exceed inflation by 3-5 percentage points		
Total Fund over 5 years	10.1%	0.4 percentage points below
■ Exceed composite market index		
Stocks, Bonds, Cash over 5 years	10.5%	0.3 percentage points below
■ Exceed median fund		

Post Retirement Fund

$5.6 Billion Market Value

Realized Earnings	Actual	Benefit Increase Provided
Earnings over 1 year (Fiscal Year 1990)	10.1%	5.1% effective Jan. 1, 1991
Earnings over 5 years (Fiscal Years 1986-1990)	11.7%	6.7% annualized

ACTUARIAL VALUATIONS

MSRS, TRA, PERA General Plans

June 30, 1990

	Active (Basics)	Retired (Post)	Total (Basics & Post)
Liability Measures			
1) Current and Future Benefit Obligation	$13.3 billion	$4.6 billion	$17.9 billion
2) Accrued Liabilities	9.3	4.6	13.9
Asset Measures			
3) Current and Future Actuarial Value	$12.9 billion	$4.6 billion	$17.5 billion
4) Current Actuarial Value	5.9	4.6	10.5
Funding Ratios			
Future Obligations vs. Future Assets (3 ÷ 1)	97%	100%	98%
Accrued Liabilities vs. Current Actuarial Value (4 ÷ 2)*	64	100	75*

* Ratio most frequently used by the Legislature and Retirement Systems.

The funding ratio required by Governmental Standard Accounting Board Statement No. 5 compares Cost Value of assets to the Current Benefit Obligation. This calculation provides funded ratios of 74% for the Basics, 100% for the Post and 84% for the Total, respectively.

Notes:
1) Present value of projected benefits that will be due to all current participants.
2) Liabilities attributed to past service calculated using entry age normal cost method.
3) Present value of future statutory contributions plus current actuarial value.
4) Same as required reserves for Post. Cost plus one-third of the difference between cost and market value for Basics.

Actuarial Assumptions:

Salary Growth: 6.5%
Interest/Discount Rate: 8.5% Basics, 5.0% Post
Full Funding Target Date: 2020

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

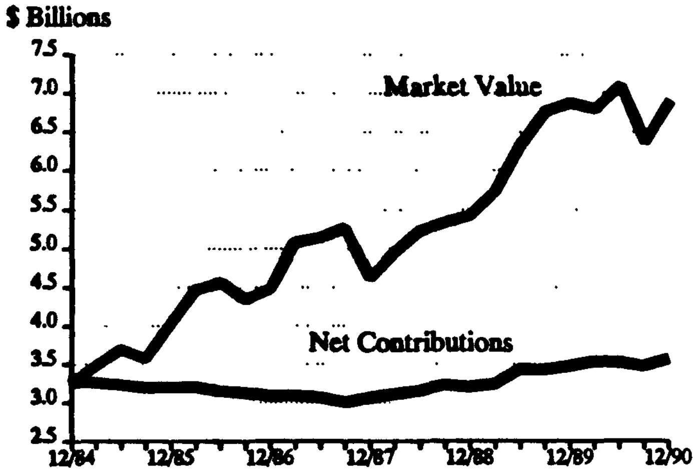
Basic Retirement Funds

Asset Growth

The market value of the Basic Funds increased 8.4% during the fourth quarter of 1990. The increase was due to strong positive performance in all asset classes.

Asset Growth
During Fourth Quarter 1990
(Millions)

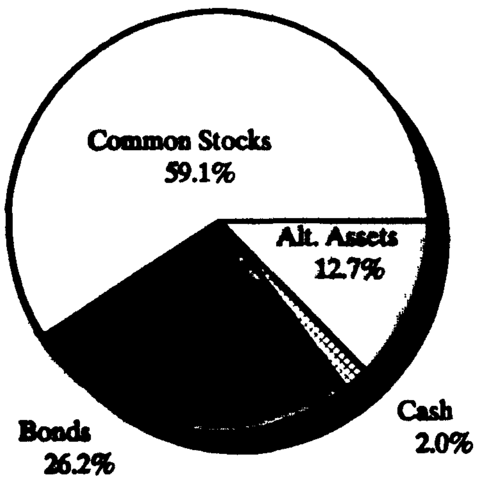
BeginBeginning Value	$6,382
Net Contributions	97
Investment Return	440
Ending Value	$6,919



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 fourth quarter staff instituted a $160 million rebalancing program that increased the stock allocation percentage and decreased the bond allocation.



Actual Asset Mix
12/31/90

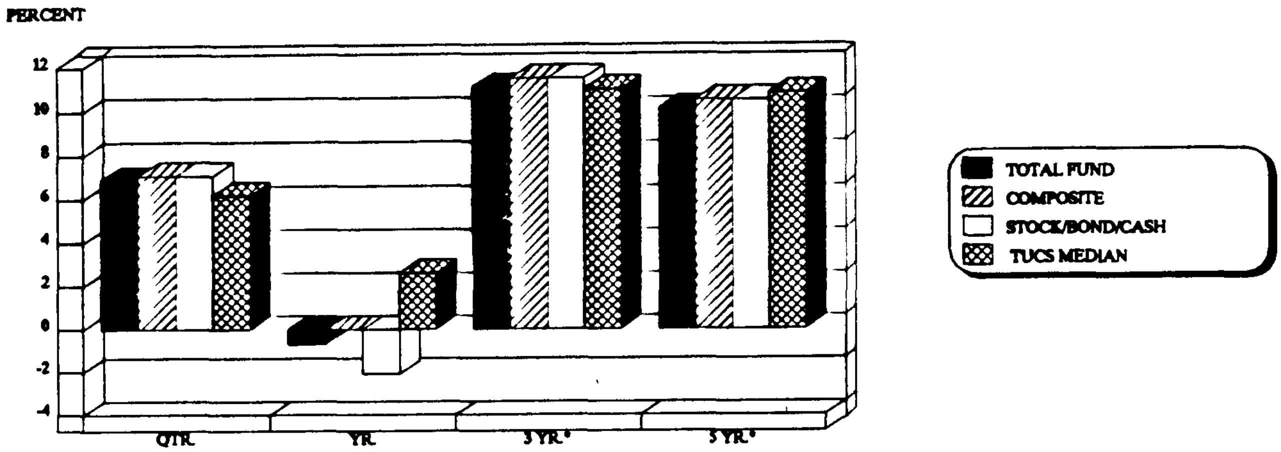
	Policy Asset Mix	Actual Mix 12/31/90	Actual Market Value (Millions)
Stocks	60.0%	59.1%	$4,092
Bonds	24.0	26.2	1,814
Alternative Assets	15.0	12.7	878
Unallocated Cash	1.0	2.0	135
	100.0%	100.0%	$6,919

Basic Funds (Con't.)

Total Fund Performance

For the quarter, the total fund without alternative assets exceeded the median fund while the total fund trailed the composite index. For the year, the total fund with and without alternative assets trailed their respective benchmarks.

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 12/31/90

	Qtr.	Yr.	*(Annualized) 3 Yr.	5 Yr.
Total Fund	**6.9%**	**-0.7%**	**11.1%**	**10.1%**
Composite Index **	7.1	0.0	11.5	10.5
Stocks, Bonds and Cash Only	**7.1**	**-2.1**	**11.5**	**10.5**
TUCS Median Balanced Fund***	6.2	2.6	11.0	10.8

** 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 trailed the performance of its target for the latest quarter and year.

	Qtr.	Yr.	(Annualized) 3 Yr.	5 Yr.
Stock Segment	7.9%	-7.1%	11.6%	10.5%
Wilshire 5000	8.7	-6.2	12.6	11.2

Bond Segment Performance

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

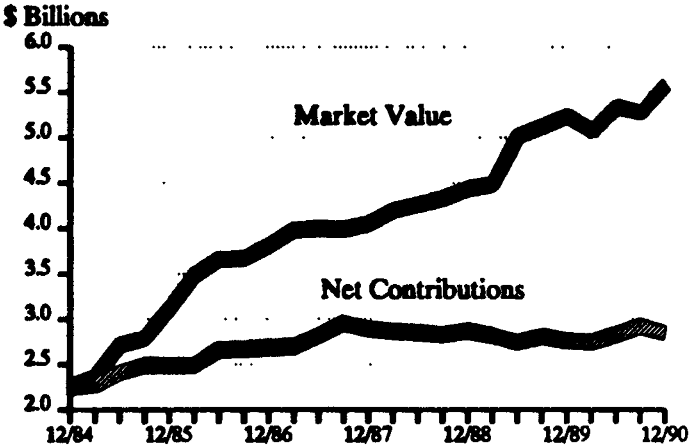
	Qtr.	Yr.	(Annualized) 3 Yr.	5 Yr.
Bond Segment	5.4%	8.7%	10.2%	9.6%
Salomon Broad Index	5.1	9.1	10.5	9.8

EXECUTIVE SUMMARY

Post Retirement Fund

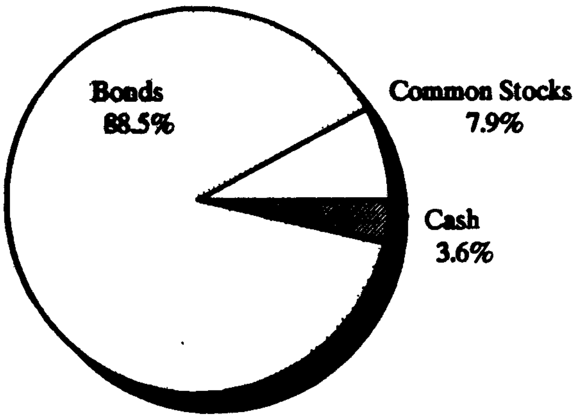
Asset Growth

The market value of the Post Fund increased by 5.9% during the fourth quarter of 1990. Assets increased due to strong positive performance in both the stock and bond markets.



Asset Growth During Fourth Quarter 1990 (Millions)	
Beginning Value	$5,278
Net Contributions	-72
Investment Return	384
Ending Value	$5,590

Asset Mix



Actual Asset Mix
12/31/90

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.

The asset mix for the Post Retirement Fund remained essentially unchanged for the quarter.

	Actual Market Value (Millions)	Asset Mix 12/31/90
Common Stocks	$442	7.9%
Bonds	4,948	88.5
Unallocated Cash	200	3.6
	$5,590	100.0%

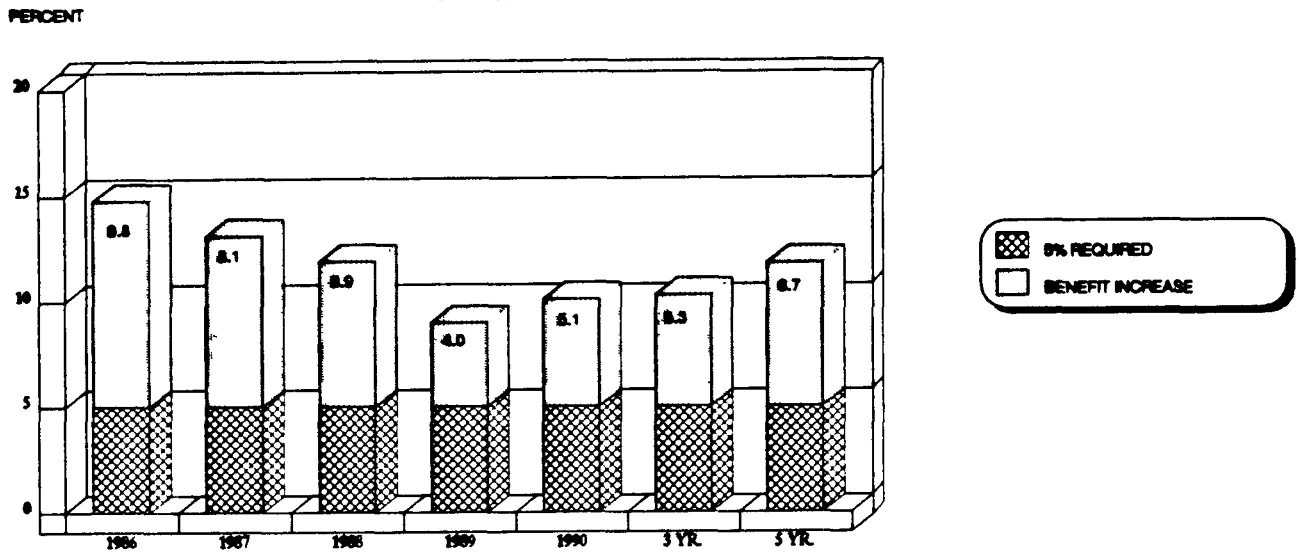
Post Fund (Con't.)

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.

Realized Earnings
Fiscal Years 1986 - 1990



	1986	1987	1988	1989	1990	(Annualized) 3 Yrs.	5 Yrs.
Realized Earnings*	14.8%	13.1%	11.9%	9.0%	10.1%	10.3%	11.7%
Benefit Increase**	**9.8**	**8.1**	**6.9**	**4.0**	**5.1**	**5.3**	**6.7**
Inflation	1.7	3.7	3.9	5.2	4.7	4.6	3.8

* Interest, dividends and net realized capital gains.
** Payable starting January 1 of the following calendar year.

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 12/31/90

	Qtr.	Yr.	(Annualized) 3 Yr.	5 Yr.
Stock Segment	9.4%	-13.8%	10.6%	6.1%
Post Fund Benchmark	9.4	-11.5	9.2	N.A.

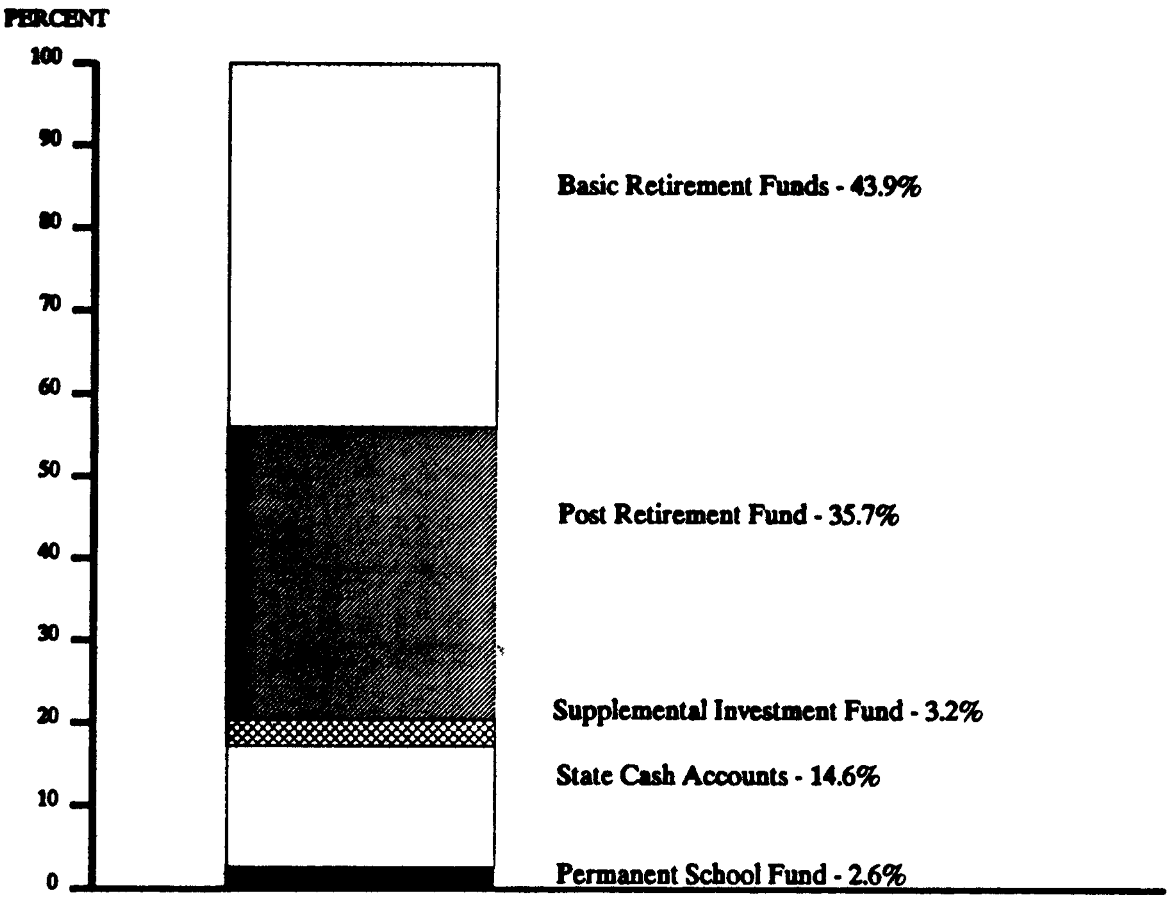
Bond Segment Performance

At the close of the quarter, the dedicated bond portfolio had a current yield of 7.70% and average duration of 7.77 years. The market value of the dedicated bond portfolio was $4.9 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 7.3% return for the quarter and a 6.9% return for the year. This is consistent with the design of the dedicated bond portfolio.

EXECUTIVE SUMMARY

Funds Under Management



	12/31/90 Market Value (Billions)
Basic Retirement Funds	$6.9
Post Retirement Fund	5.6
Supplemental Investment Fund	0.5
State Cash Accounts	2.3
Permanent School Fund	0.4
Total	$15.7

MINNESOTA STATE BOARD

OF INVESTMENT

QUARTERLY INVESTMENT REPORT

Fourth Quarter 1990

(October 1, 1990 - December 31, 1990)

Table of Contents

FINANCIAL MARKETS REVIEW

STOCK MARKET

Overall, stock prices increased during the fourth quarter. The market reacted positively once the federal government resolved the budget issue and the price of oil came down and stabilized at a level close to the price experienced prior to the invasion of Kuwait. Also, the market reacted favorably to the Federal Reserve's more accomodating monetary policy.

The Wilshire 5000 increased 8.7% for the quarter. Performance among the different Wilshire Style Indexes for the quarter varied widely and are shown below:

• Large Value	9.0%
• Small Value	6.0
• Large Growth	12.8
• Small Growth	12.4

Lastly, due to the downturn during the third quarter, the Wilshire 5000 lost 6.2% during the latest year.

BOND MARKET

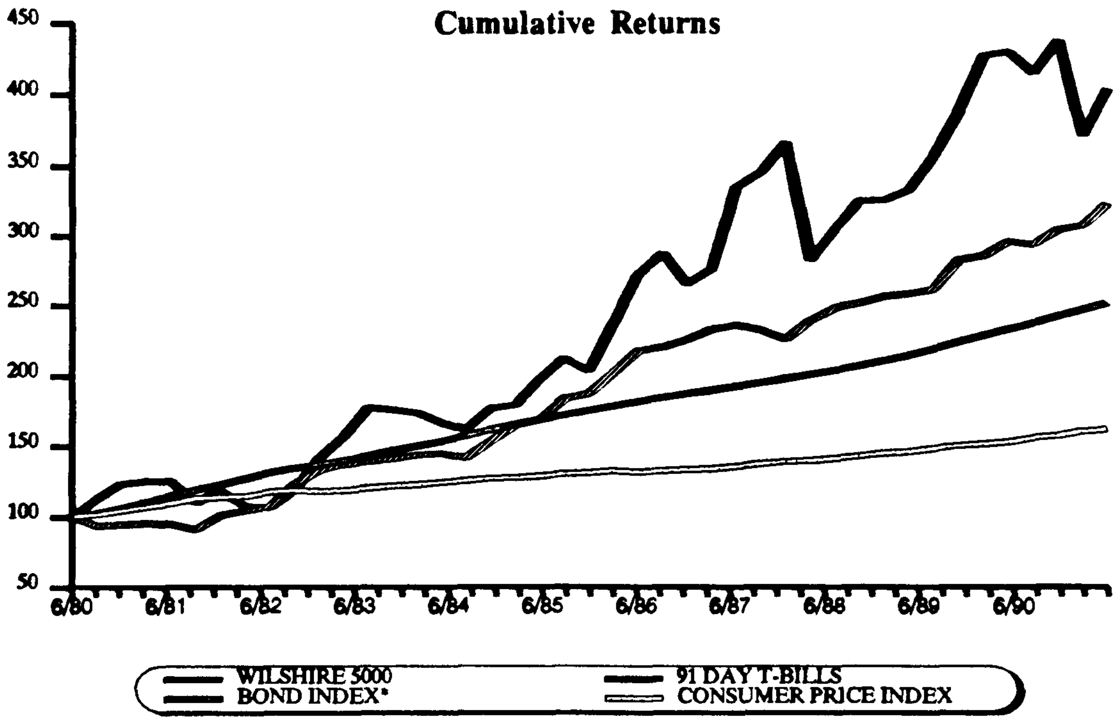
The bond market recorded a positive rate of return for the quarter. The primary reason for the bond market rally was the more accomodating monetary policy implemented by the Federal Reserve during the fourth quarter. Specifically, the Federal Reserve lowered its reserve requirement and discount rate. Both these measures reduce the interest rate charged by banks causing bond prices to rise.

Overall, the Salomon Brothers Broad Investment Grade (BIG) Index increased 5.1% for the quarter. The Salomon Big Index sector returns for the quarter were:

• Treasury/Agency	5.5%
• Corporates	4.0
• Mortgages	5.0

Lastly, the Salomon BIG Index gained 9.1% for the latest year.

PERFORMANCE OF CAPITAL MARKETS



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

FINANCIAL MARKETS REVIEW

REAL ESTATE

The real estate market still faces oversupply and slow demand. Regional malls, industrials and apartments are faring the best. Office (especially suburban), smaller retail, hotel and land are not doing well. 1990 census data indicate California, Florida, Texas and other warm weather states are market winners, mostly at the expense of northern industrial centers and rural areas.

VENTURE CAPITAL

According to the *Venture Capital Journal*, a preliminary look at venture capital disbursements for 1990 indicates that they will have a difficult time surpassing the $2 billion mark. This would be the first time since 1982 (when capital invested reached only $1.5 billion), that disbursements have been so low. Over the last five years, new capital investments have averaged approximately $3.4 billion annually.

RESOURCE FUNDS

Since the invasion of Kuwait by Iraq, spot prices of West Texas Intermediate oil jumped to as high as $41.15 per barrel in October 1990 compared to a low of $15.06 in June 1990. Currently, spot prices of oil are at $23 per barrel.

Spot prices of natural gas reached in October 1990 a high of approximately $2.00 per MCF (thousand cubic feet) compared to a recent price of $1.37 per MCF.

BASIC RETIREMENT FUNDS

Investment Objectives

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

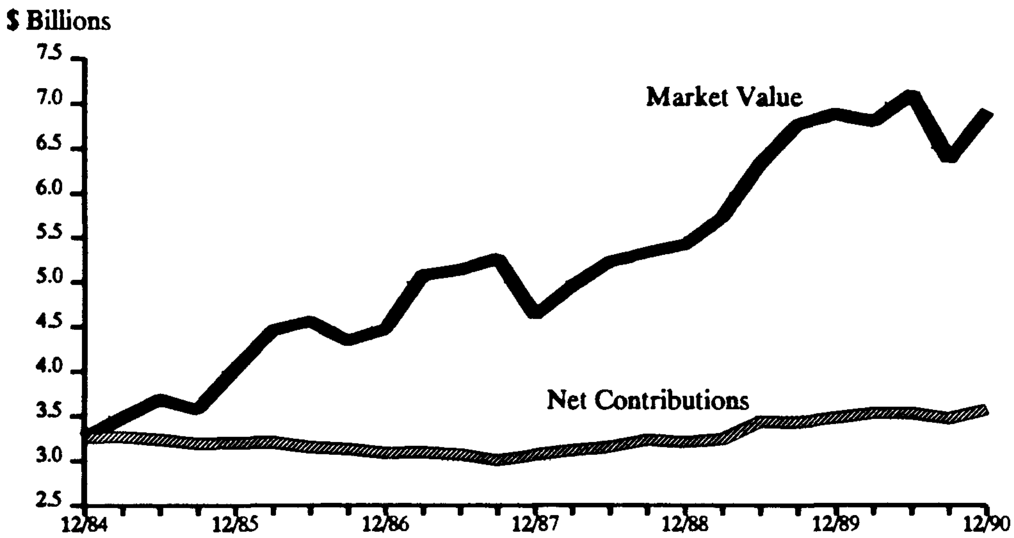
Based upon the Basic Funds' adequate funding levels and participant demographics, its investment time horizon is quite long. This extended time horizon permits the Board to take an aggressive, high expected return investment policy which incorporates a sizable equity component.

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 increased 8.4% during the fourth quarter of 1990. The increase was due to strong positive performance in all asset classes.



In Millions

	12/85	12/86	12/87	12/88	12/89	3/90	6/90	9/90	12/90
Beginning Value	$3,265	$4,030	$4,474	$4,628	$5,420	$6,875	$6,798	$7,106	$6,382
Net Contributions	-62	-113	-26	146	269	55	-5	-56	97
Investment Return	827	557	180	646	1,186	-132	313	-684	440
Ending Value	$4,030	$4,474	$4,628	$5,420	$6,875	$6,798	$7,106	$6,382	$6,919

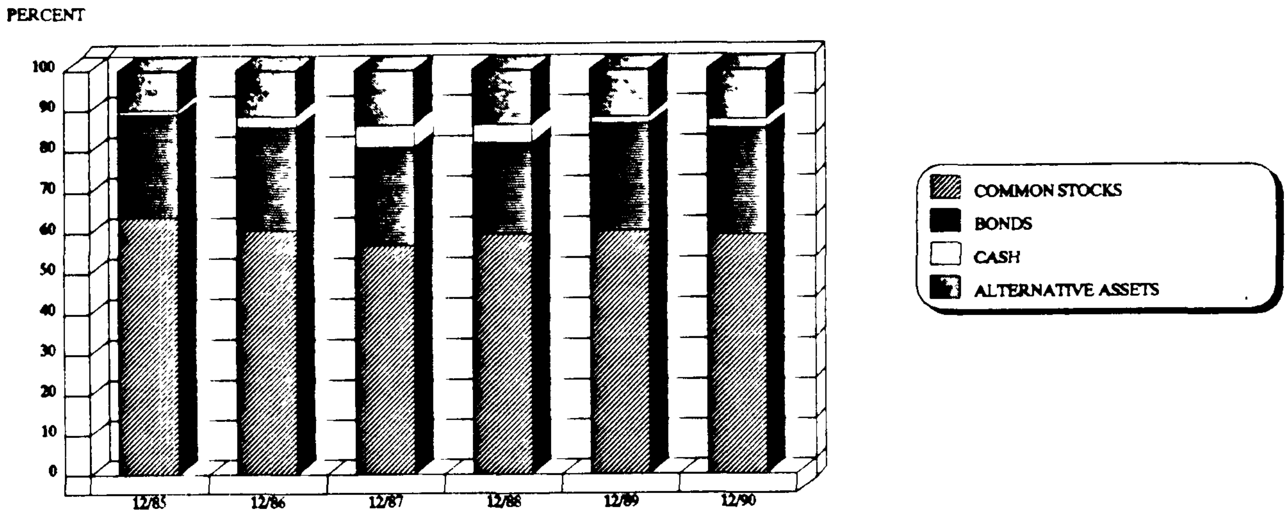
BASIC RETIREMENT FUNDS

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 staff instituted a $160 million rebalancing program that increased the equity allocation percentage and decreased the bond allocation.



	Last Five Years					Latest Qtrs.			
	12/85	12/86	12/87	12/88	12/89	3/90	6/90	9/90	12/90
Stocks	63.8%	60.6%	56.7%	59.5%	60.2%	61.3%	61.3%	56.8%	59.1%
Bonds	25.3	25.3	24.2	22.4	26.4	26.2	25.9	28.8	26.2
Real Estate	7.2	8.3	9.5	9.0	7.5	7.5	7.4	7.6	7.0
Venture Capital	1.3	1.8	2.8	3.1	2.8	2.9	3.4	4.0	4.2
Resource Funds	1.3	1.4	1.4	1.5	1.4	1.1	1.2	1.4	1.5
Unallocated Cash	1.1	2.6	5.4	4.5	1.7	1.0	0.8	1.4	2.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

BASIC RETIREMENT FUNDS

Total Fund Performance vs. Standards

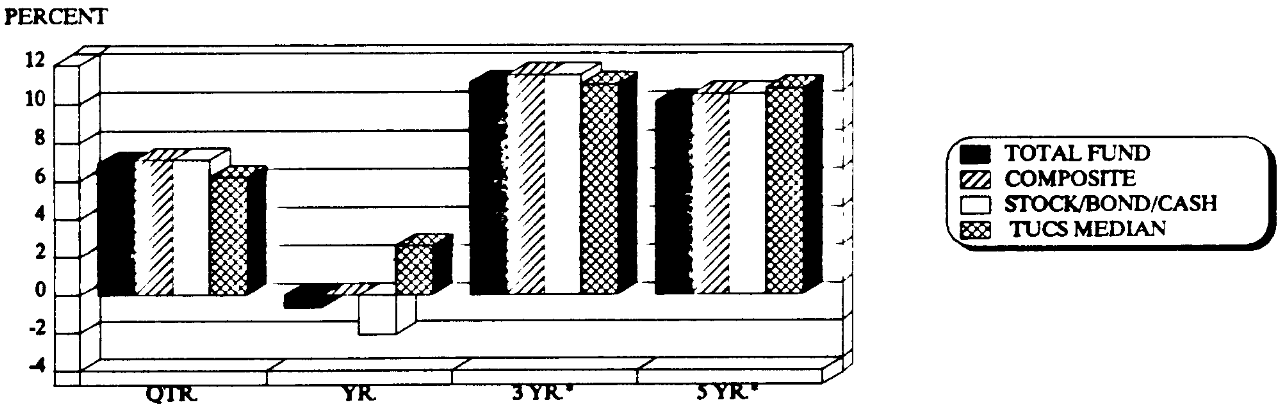
The Basic Funds' long-term rate of return performance is evaluated relative to two specific benchmarks:

- **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 trailed its composite index for the latest quarter and year. Because of the Basic Funds sizable stock allocation and performance of the stock market, the Basic Funds' exceeded the median balanced fund for the latest quarter but trailed it for the latest year. Excluding alternative assets, the Basic Funds ranked in the upper half (35th percentile) of the TUCS universe for the quarter. In addition, it ranked in the lowest quartile (85th percentile) for the latest year and the middle third (57th percentile) for the last five years.



	Qtr.	Yr.	3 Yr.	5 Yr.
		Period Ending 12/31/90	*(Annualized)	
Total Fund	6.9%	-0.7%	11.1%	10.1%
Composite Index	7.1	0.0	11.5	10.5
Stocks, Bonds and Cash Only	7.1	-2.1	11.5	10.5
TUCS Median Balanced Fund	6.2	2.6	11.0	10.8

BASIC RETIREMENT FUNDS

Segment Performance vs. Standards

Stock Segment

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

			Annualized	
	Qtr.	Yr.	3 Yrs.	5 Yrs.
Stock Segment	7.9%	-7.1%	11.6%	10.5%
Wilshire 5000	8.7	-6.2	12.6	11.2

Bond Segment

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

			Annualized	
	Qtr.	Yr.	3 Yrs.	5 Yrs.
Bond Segment	5.4	8.7	10.2	9.6
Salomon Bond Index	5.1	9.1	10.5	9.8

Real Estate Segment

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

			Annualized	
	Qtr.	Yr.	3 Yrs.	5 Yrs.
Real Estate Segment	-2.6%	0.9%	5.3%	6.0%
Real Estate Index	-2.5	-1.2	3.6	5.6
Inflation	0.8	6.1	5.1	4.1

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. Many of the investments, therefore, are relatively immature and returns may not be indicative of future results.

			Annualized	
	Qtr.	Yr.	3 Yrs.	5 Yrs.
Venture Capital Segment	12.8%	19.6%	16.1%	10.7%
Resource Fund Segment	21.8	5.6	5.6	1.4

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.

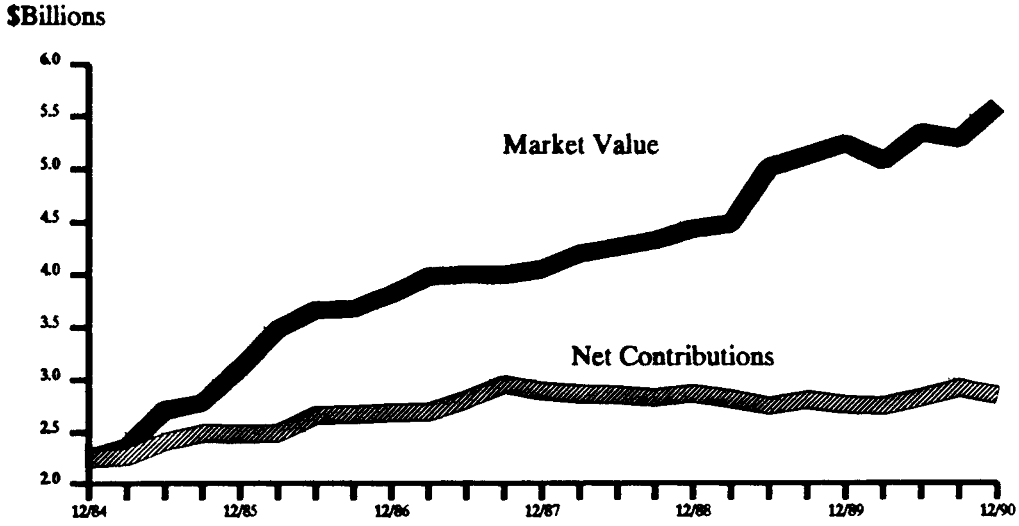
The Board has established two earnings objectives for the Post Fund:

- 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 Retirement Fund increased by 13.4% during the fourth quarter of 1990. Asset growth increased due to strong positive performance in both the stock and bond markets.



In Millions

	12/85	12/86	12/87	12/88	12/89	3/90	6/90	9/90	12/90
Beginning Value	$2,246	$3,107	$3,808	$4,047	$4,434	$5,238	$5,073	$5,339	$5,278
Net Contributions	239	199	207	-27	25	-11	77	94	-72
Investment Return	622	502	32	414	779	-154	189	-155	384
Ending Value	$3,107	$3,808	$4,047	$4,434	$5,238	$5,073	$5,339	$5,278	$5,590

POST RETIREMENT FUND

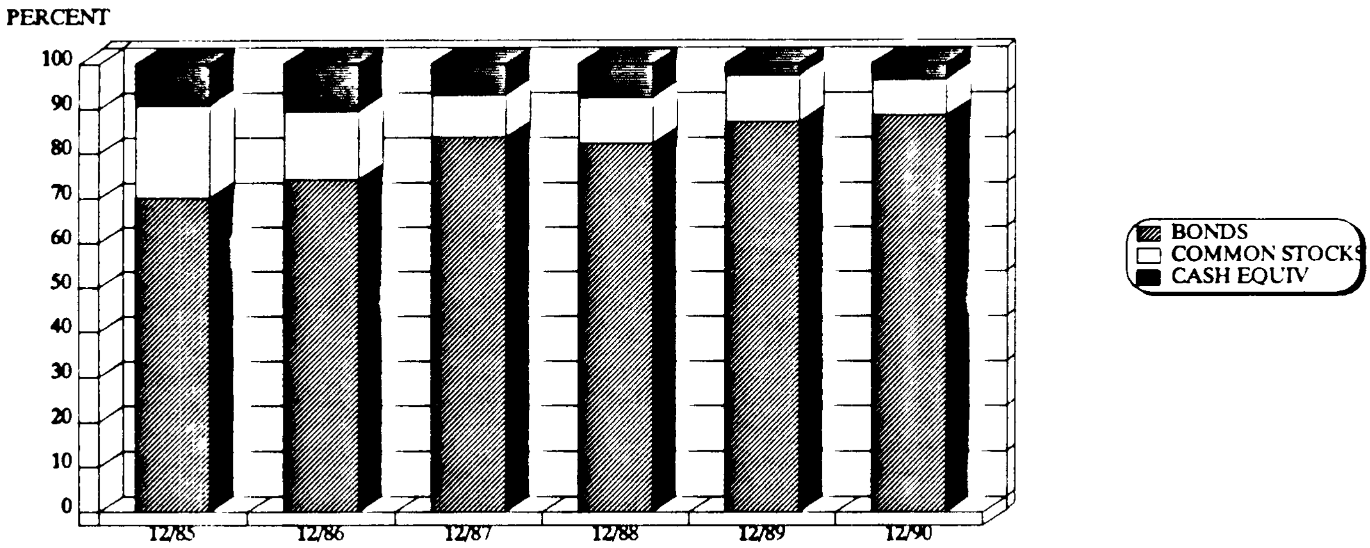
Asset Mix

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.

The asset mix for the Post Retirement Fund remained essentially unchanged for the quarter.



	Last Five Years					Latest Qtrs.			
	12/85	**12/86**	**12/87**	**12/88**	**12/89**	**3/90**	**6/90**	**9/90**	**12/90**
Bonds	70.2%	74.2%	83.7%	82.3%	87.1%	84.8%	84.5%	88.5%	88.5%
Stocks	20.5	15.1	9.3	10.1	10.2	10.1	9.6	7.6	7.9
Unallocated Cash	9.3	10.7	7.0	7.6	2.7	5.1	5.9	3.9	3.6
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

POST RETIREMENT FUND

Total Fund Performance

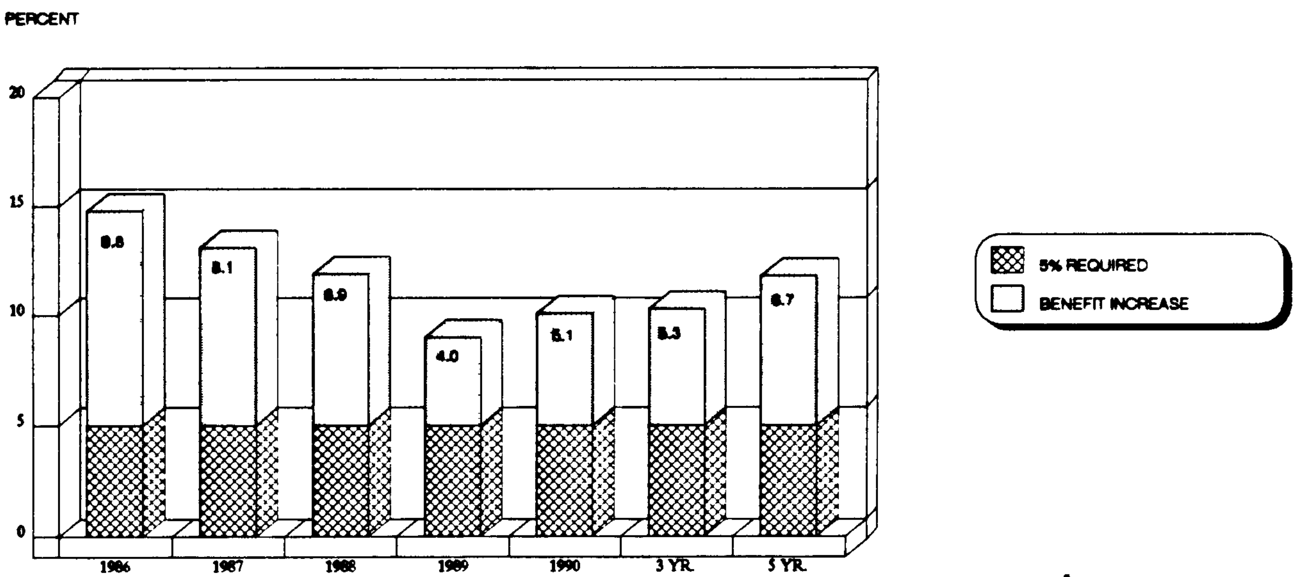
The ability of the Post Fund to maintain current benefit levels and provide future benefit increases depends upon its earnings. State statutes define earnings for the Post Fund as interest and dividend income as well as realized equity and fixed income capital gains (or losses). Unrealized capital gains (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.

Realized Earnings

Fiscal Years 1986 - 1990



	1986	1987	1988	1989	1990	(Annualized) 3 Yrs.	5 Yrs.
Realized Earnings*	14.8%	13.1%	11.9%	9.0%	10.1%	10.3%	11.7%
Benefit Increase**	**9.8**	**8.1**	**6.9**	**4.0**	**5.1**	**5.3**	**6.7**
Inflation	1.7	3.7	3.9	5.2	4.7	4.6	3.8

* Interest, dividends and net realized capital gains.

** Payable starting January 1 of the following calendar year.

POST RETIREMENT FUND

Segment Performance

Stock Segment Performance

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

Period Ending 12/31/90			(Annualized)	
	Qtr.	Yr.	3 Yrs.	5 Yrs.
Stock Segment	9.4%	-13.8%	10.6%	6.1%
Post Fund Benchmark	9.4	-11.5	9.2	N.A.

Bond Segment Performance

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

The Post Fund's bond portfolio provided a 7.3% total rate of return for the quarter and a 6.9% 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
12/31/90

Value at Market	$ 4,947,303,967
Value at Cost	4,594,263,238
Average Coupon	8.68%
Current Yield	7.70
Yield to Maturity	8.61
Current Yield at Cost	8.37
Time to Maturity	15.64 Years
Average Duration	7.77 Years
Average Quality Rating	AAA
Number of Issues	433

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 December 31, 1990 the market value of the entire fund was $473 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

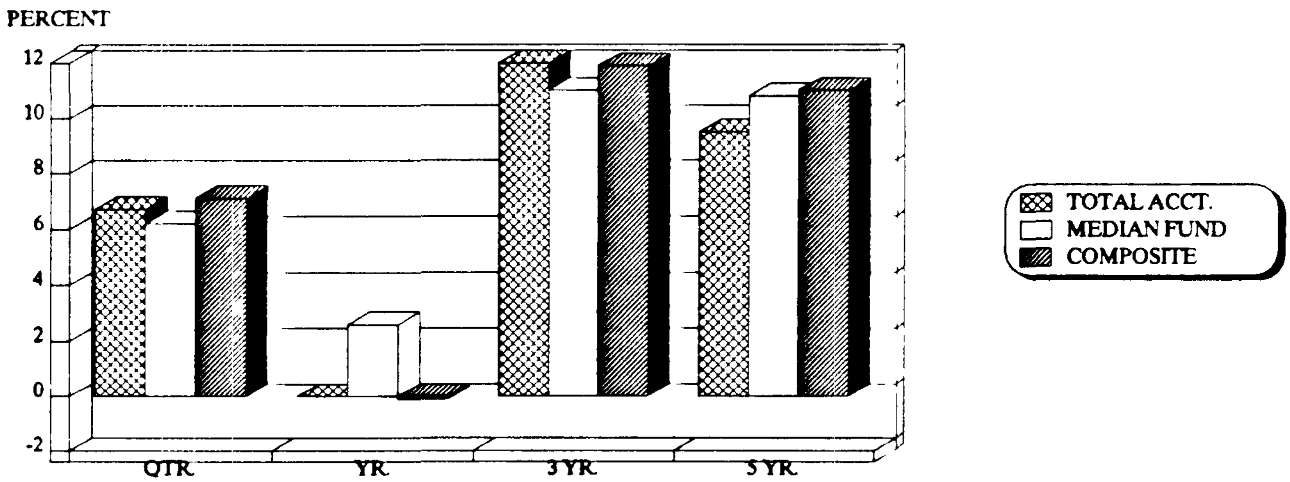
Investment Objective
The primary investment objective of the Income Share Account is similar to that of the Basic Retirement Funds. The Account seeks to maximize long-term real rates of return, while limiting short-run portfolio return volatility.

Asset Mix
The Income Share Account is invested in a balanced portfolio of common stocks and bonds. 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%	59.1%
Bonds	35.0	33.8
Unallocated Cash	5.0	7.1
	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 December 31, 1990 the market value of the Income Share Account was $241 million.



Period Ending 12/31/90

	Qtr.	Yr.	Annualized 3 Yr.	Annualized 5 Yr.
Total Account	6.7%	0.0%	12.0%	9.5%
Median Fund*	6.2	2.6	11.0	10.8
Composite**	7.1	-0.1	11.9	11.0
Equity Segment	8.3	-6.5	12.7	8.7
Wilshire 5000	8.7	-6.2	12.6	11.2
Bond Segment	5.2	9.4	10.5	10.0
Salomon Bond Index	5.1	9.1	10.5	9.8

* TUCS Median Balanced Portfolio

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

SUPPLEMENTAL INVESTMENT FUND

Growth Share Account

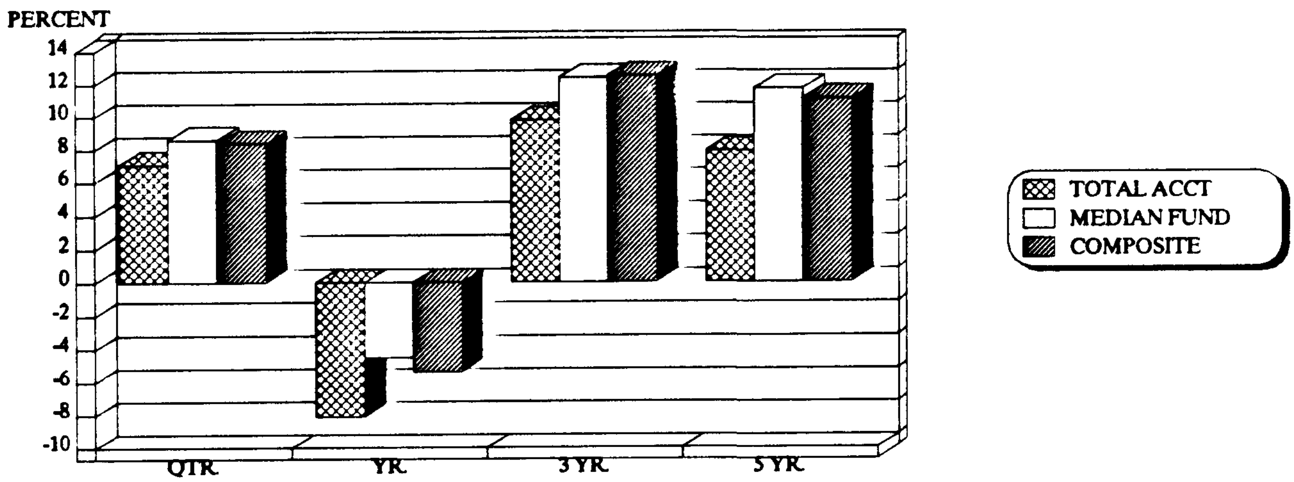
Investment Objective
The Growth Share Account's investment objective is to generate above-average returns from capital appreciation on common stocks.

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%	94.0%
Unallocated Cash	5.0	6.0
	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. Prior to April 1988, other active managers controlled a substantial portion of the account.

Market Value
On December 31, 1991 the market value of the Growth Share Account was $65 million.



Period Ending 12/31/90

	Qtr.	Yr.	Annualized 3 Yr.	Annualized 5 Yr.
Total Account	7.1%	-8.1%	9.8%	7.9%
Median Fund*	8.6	-4.5	12.4	11.7
Composite**	8.4	-5.4	12.5	11.1
Equity Segment	7.3	-8.1	9.8	8.0
Wilshire 5000	8.7	-6.2	12.6	11.2

* TUCS Median Managed Equity Portfolio

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

SUPPLEMENTAL INVESTMENT FUND

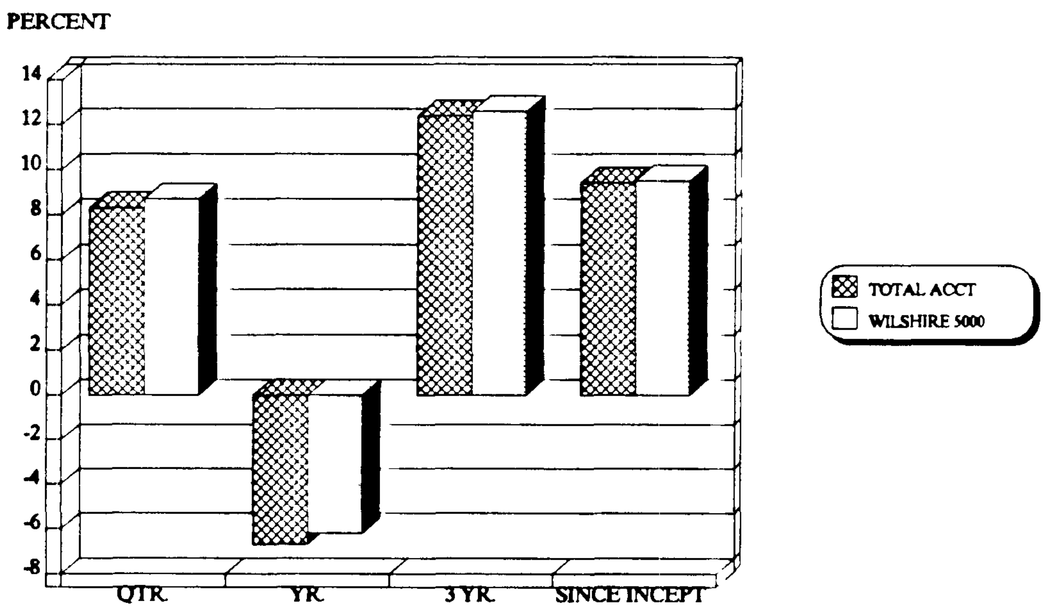
Common Stock Index Account

Investment Objective and Asset Mix
The investment objective of the Common Stock Index Account is to genefate 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 December 31, 1990 the market value of the Common Stock Index Account was $11 million.



Period Ending 12/31/90

	Qtr.	Yr.	3 Yrs. Annualized	Since Inception Annualized*
Total Account	8.3%	-6.7%	12.4%	9.4%
Wilshire 5000	8.7	-6.2	12.6	9.5

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

SUPPLEMENTAL INVESTMENT FUND

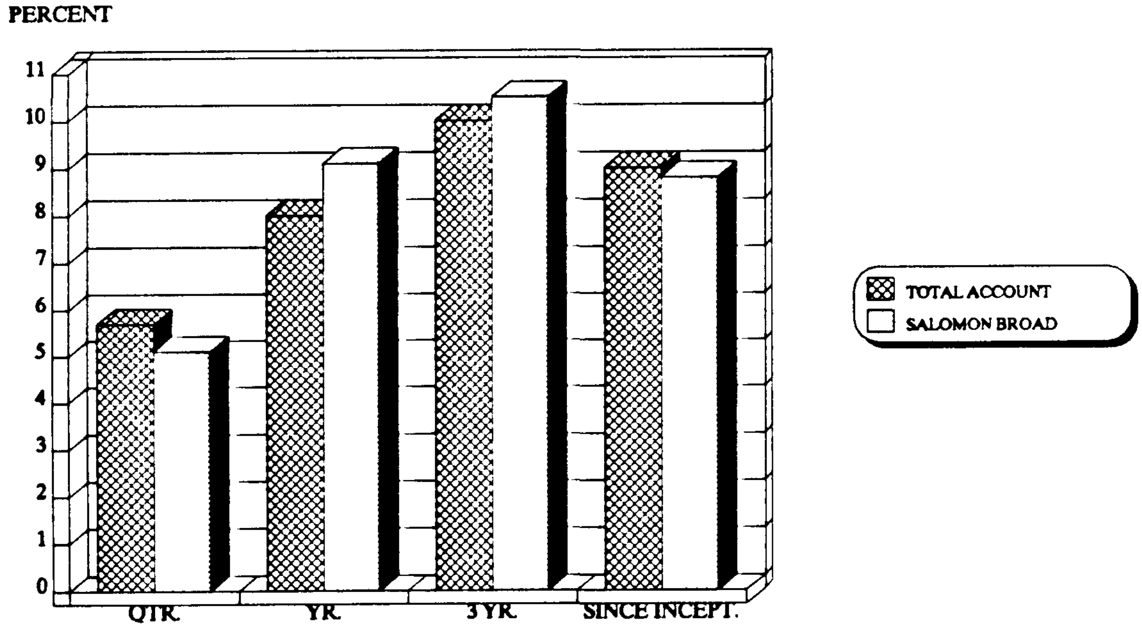
Bond Market Account

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.

Market Value
On December 31, 1990 the market value of the Bond Market Account was $8 million.



Period Ending 12/31/90

	Qtr.	Yr.	3 Yrs. Annualized	Since Inception Annualized*
Total Account	5.7%	8.0%	10.0%	9.0%
Salomon Broad	5.1	9.1	10.5	8.8

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

SUPPLEMENTAL INVESTMENT FUND

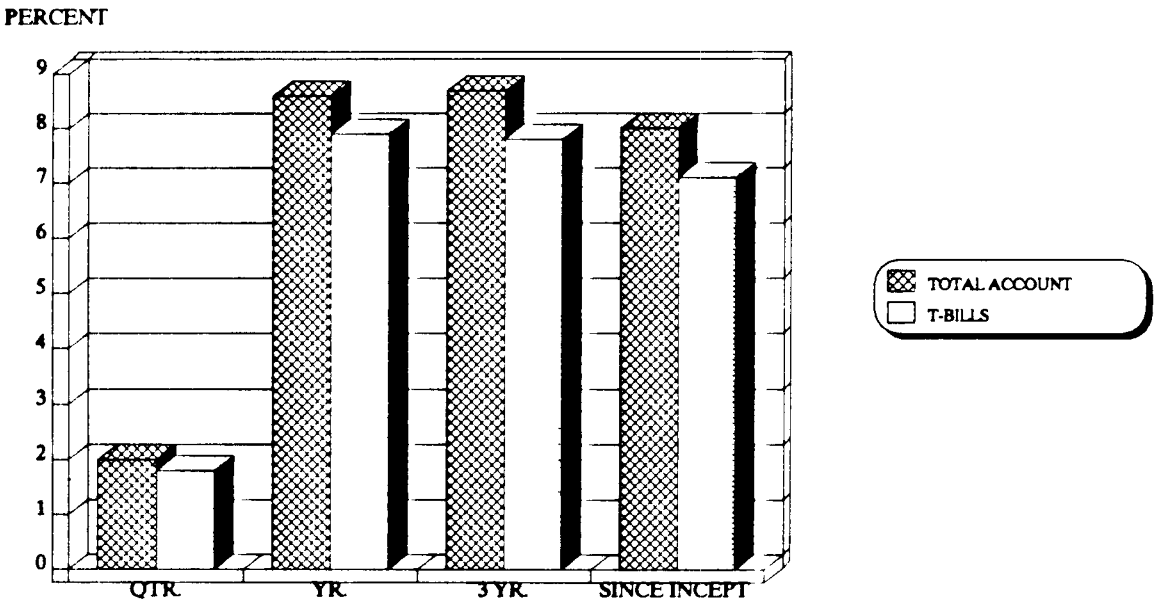
Money Market Account

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 December 31, 1990 the market value of the Money Market Account was $84 million.



Period Ending 12/31/90

	Qtr.	Yr.	3 Yrs. Annualized	Since Inception Annualized*
Total Account	2.0%	8.6%	8.7%	8.0%
91 Day T-Bills	1.8	7.9	7.8	7.1

* 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 December 31, 1990 the market value of the Guaranteed Return Account was $63 million.

Contract Period	Annual Effective Interest Rate	Manager
Nov. 1, 1988 - Oct. 31, 1991	9.010%	Mutual of America
Nov. 1, 1989 - Oct. 31, 1992	8.400%	John Hancock
Nov. 1, 1990 - Oct. 31, 1993	8.765%	Mutual of America/ Provident National (blended rate)

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 fourth 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%	97.5%
Unallocated Cash	5.0	2.5
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 increased 1.9% during the fourth quarter. The increase in assets was due primarily to a increase in bond prices.

Asset Growth During Fourth Quarter 1990 (Millions)

Beginning Value	$376.9
Net Contributions	-17.8
Investment Return	25.1
Ending Value	$384.2

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 8.86%, an average life of 7.33 years, and a AAA quality rating. The portfolio remains concentrated in Treasury and Agency issues with the remainder primarily distributed among mortgages, industrials and utilities.

Bond Portfolio Statistics 12/31/90

Value at Market	$374,506,239
Value at Cost	355,225,278
Average Coupon	9.17%
Current Yield	8.86
Yield to Maturity	8.68
Current Yield at Cost	9.03
Time to Maturity	15.35 Years
Average Duration	7.33 Years
Average Quality Rating	AAA
Number of Issues	134

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 12/31/90

	Market Value (Millions)	Qtr.	Yr.	3 Yrs. Annualized
Treasurer's Cash Pool	$2,052	2.2%	8.9%	8.7%
Trust Fund Cash Pool	206	2.1	8.7	8.6
91-Day T-Bills		1.8	7.9	7.8

Tab B

PORTFOLIO STATISTICS

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT
COMPOSITION OF STATE INVESTMENT PORTFOLIOS BY TYPE OF INVESTMENT
MARKET VALUE DECEMBER 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	$ 64,241	$ -0-	$ 827,670	$ -0-	$1,887,416	$398,938	$ 3,178,265
	2.02%		26.04%		59.39%	12.55%	100%
PUBLIC EMPLOYEES RETIRE. FUND	27,833	-0-	407,593	-0-	929,990	196,591	1,562,007
	1.78%		26.09%		59.54%	12.59%	100%
STATE EMPLOYEES RETIRE. FUND	28,181	-0-	345,844	-0-	789,191	166,724	1,329,940
	2.12%		26.00%		59.34%	12.54%	100%
PUBLIC EMP. POLICE & FIRE FUND	10,562	-0-	154,511	-0-	352,429	74,466	591,968
	1.78%		26.10%		59.54%	12.58%	100%
HIGHWAY PATROL RETIRE. FUND	1,815	-0-	25,802	-0-	58,771	12,450	98,838
	1.84%		26.10%		59.46%	12.60%	100%
JUDGES RETIREMENT FUND	112	-0-	1,641	-0-	3,746	791	6,290
	1.78%		26.09%		59.55%	12.58%	100%
PUBLIC EMP. P.F. CONSOLIDATED	1,432	20,627	12,473	5,672	25,292	5,346	70,842
	2.02%	29.12%	17.60%	8.01%	35.70%	7.55%	100%
CORRECTIONAL EMPLOYEES RETIREMENT	1,126	-0-	17,429	-0-	39,772	8,402	66,729
	1.69%		26.12%		59.60%	12.59%	100%
POST RETIREMENT FUND	200,655	4,947,304	-0-	442,054	-0-	-0-	5,590,013
	3.59%	88.50%		7.91%			100%
MINNESOTA SUPPLEMENTAL FUNDS:							
INCOME SHARE ACCOUNT	17,052	81,720	-0-	-0-	142,554	-0-	241,326
	7.07%	33.86%			59.07%		100%
GROWTH SHARE ACCOUNT	3,905	-0-	-0-	-0-	61,582	-0-	65,487
	5.96%				94.04%		100%
MONEY MARKET ACCOUNT	84,474	-0-	-0-	-0-	-0-	-0-	84,474
	100%						100%
COMMON STOCK INDEX ACCOUNT	-0-	-0-	-0-	-0-	11,228	-0-	11,228
					100%		100%
BOND MARKET ACCOUNT	-0-	-0-	7,570	-0-	-0-	-0-	7,570
			100%				100%
GUARANTEED RETURN ACCOUNT	-0-	-0-	62,829	-0-	-0-	-0-	62,829
			100%				100%

	CASH AND SHORT TERM SECURITIES	BONDS INTERNAL	BONDS EXTERNAL	STOCKS INTERNAL	STOCKS EXTERNAL	ALTERNATIVE ASSETS	TOTAL
TOTAL RETIREMENT FUNDS	$ 441,388	$5,049,651	$1,863,362	$447,726	$ 4,301,971	$863,708	$12,967,806
	3.40%	38.94%	14.37%	3.45%	33.18%	6.66%	100%
PERMANENT SCHOOL FUND	9,712	374,506	-0-	-0-	-0-	-0-	384,218
	2.53%	97.47%					100%
TREASURERS CASH	2,051,997	-0-	-0-	-0-	-0-	-0-	2,051,997
	100%						100%
HOUSING FINANCE AGENCY	183,767	-0-	-0-	-0-	-0-	-0-	183,767
	100%						100%
MINNESOTA DEBT SERVICE FUND	20,475	-0-	-0-	-0-	-0-	-0-	20,475
	100%						100%
MISCELLANEOUS ACCOUNTS	117,294	-0-	-0-	-0-	-0-	-0-	117,294
	100%						100%
GRAND TOTAL	$2,824,633	$5,424,157	$1,863,362	$447,726	$4,301,971	$863,708	$15,725,557
	17.96%	34.49%	11.85	2.85%	27.36%	5.49%	100%

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

For period of
October 1, 1990 - December 31, 1990

Teachers Retirement Fund	$ 36,000.000.00
Public Employees Retirement Fund	12,000,000.00
State Employees Retirement Fund	12,588,000.00
Public Employees Police & Fire	8,000,000.00
Highway Patrol Retirement Fund	(167,000.00)
Judges Retirement Fund	-0-
Public Emp. P & F Consolidated	29,013.368.33
Correctional Employees Retirement Fund	12,000.00
Post Retirement Fund	(71,678,767.88)
Supplemental Retirement Fund - Income	2,051,949.16
Supplemental Retirement Fund - Growth	338,563.37
Supplemental Retirement Fund - Money Market	(1,345,211.96)
Supplemental Retirement Fund - Index	1,092,373.17
Supplemental Retirement Fund - Bond Mkt.	219,347.11
Supplemental Retirement Fund - Guaranteed	168,904.51
Total Retirement Funds Net Cash Flow	$ 28,293,525.81
Permanent School Fund	(17,834,973.29)
Total Net Cash Flow	$ 10,458,552.52

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)
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
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
April	105	3	108	8	2.7	51.4	45.9	12070
May	(6)	27	21	52	2.8	50.0	47.2	12721
June	23	(22)	1	122	3.7	50.3	46.0	12916
July	130	3	133	65	3.1	51.6	45.3	12962
August	98	(38)	60	53	3.2	53.3	43.5	12293
September	61	(42)	19	13	3.2	55.1	41.7	12098
October	35	8	43	11	3.0	56.0	41.0	12103
November	(58)	61	3	106	3.7	54.2	42.1	12652
December	(59)	115	56	33	3.4	53.3	43.3	12967

Tab C

EXECUTIVE DIRECTOR'S REPORT

DATE: March 4, 1991

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

FROM: Howard J. Bicker

1) Budget and Travel Reports

A budget report for the period ending January 1991 is included as Attachment A.

A travel report for the period from November 16, 1990 - February 15, 1991 is included as Attachment B.

2) Legislative Report

To date, very few bills affecting pensions or investments have been introduced during the 1991 Legislative Session.

A summary of proposed legislation of interest to the SBI is contained in Attachment C. This summary is updated and sent to Board member designees on a regular basis.

3) Report on GIC Bid for the Public Facilities Authority

The SBI manages the cash balances in a variety of debt service and debt reserve funds for state agencies. These balances are invested separately from the Invested Treasurer's Cash Fund due to their unique cash flow requirements and arbitrage accounting rules.

The Public Facilities Authority (PFA) elected to have the SBI invest its bond proceeds and debt reserve funds in yield-restricted guaranteed investment contracts (GIC's). A yield restricted GIC is a relatively new investment vehicle that offers some clear advantages to bond issuers such as the PFA:

- it minimizes the arbitrage accounting requirements associated with tax exempt issues
- it can be structured to provide necessary liquidity
- it can be used to "lock-in" favorable interest rates

SBI staff and legal counsel assisted the PFA in structuring the GIC and preparing the bidding specifications.

SBI and PFA staff were pleased with the results of the bidding process and anticipate that this investment vehicle will be used again in the future.

4) Request to Authorize Great-West Life Assurance Company to Add Two Options to the State's Deferred Compensation Plan.

Great-West has requested the authority to add a Money Market Fund and a Bond Fund to its list of available options to the State's Deferred Compensation Plan. With the addition of the two new funds the range of options available from each vendor would be more comparable.

Great-West currently provides both options to other state deferred compensation plans.

RECOMMENDATION:

The SBI should authorize the executive director, with assistance from SBI's legal counsel, to negotiate and execute any necessary contract amendments with Great-West Life Assurance Company to add a money market fund and a bond fund to the investment options available in the State's Deferred Compensation Plan.

STATE BOARD OF INVESTMENT
FISCAL YEAR 1991 ADMINISTRATIVE BUDGET REPORT
GENERAL FUND APPROPRIATION
FISCAL YEAR TO-DATE THROUGH JANUARY 31,1991

ITEM	FISCAL YEAR 1991 BUDGET	FISCAL YEAR 1991 EXPENDITURES
PERSONAL SERVICES		
CLASSIFIED EMPLOYEES	$ 243,500	$ 136,157
UNCLASSIFIED EMPLOYEES	1,138,910	608,196
PART-TIME EMPLOYEES	0	0
WORKERS COMPENSATION INSURANCE	0	606
MISCELLANEOUS PAYROLL	0	-7
SUBTOTAL	**$ 1,382,410**	**$ 744,952**
EXPENSES & CONTRACTUAL SERVICES		
RENTS & LEASES	97,000	53,838
REPAIRS/ALTERATIONS/MAINTENANCE	9,000	5,588
PRINTING & BINDING	18,000	6,570
PROFESSIONAL/TECHNICAL SERVICES	5,000	3,294
DATA PROCESSING & SYSTEM SERVICES	162,000	81,000
PURCHASED SERVICES	20,000	15,174
SUBTOTAL	**$ 311,000**	**$ 165,464**
MISCELLANEOUS OPERATING EXPENSES		
COMMUNICATIONS	20,000	12,318
TRAVEL, IN-STATE	3,000	637
TRAVEL, OUT-STATE	40,000	20,980
FEES & OTHER FIXED CHARGES	7,000	2,557
SUBTOTAL	**$ 70,000**	**$ 36,492**
SUPPLIES/MATERIALS/PARTS	**15,000**	**24,507**
CAPITAL EQUIPMENT	**19,100**	**10,613**
TOTAL GENERAL FUND	**$ 1,797,510**	**$ 982,028**

ATTACHMENT B

STATE BOARD OF INVESTMENT

Travel Summary by Date
November 16, 1990 - February 15, 1991

Purpose	Name(s)	Destination and Date	Total Cost
Staff Education Barra Sponsor Consultation Seminar	H. Bicker	San Francisco 1/12-17	$446.00

ATTACHMENT C

BILLS OF INTEREST TO THE MINNESOTA STATE BOARD OF INVESTMENT
1991 LEGISLATIVE SESSION
Includes Action Through 3/1/91

DESCRIPTION OF BILL	HF/SF #	AUTHOR	CURRENT STATUS
Ambulance Service Personnel Plan "incentive plan" administered by PERA, assets to be invested by SBI	SF 112	Frederickson, D.J.	Referred to Committee on Commerce
Adding Vendors to State Deferred Compensation Plan	HF 323	Johnson, R.	Referred to Govt'l Operations
SBI would be required to contract with 5 insurance companies for options	SF 418	Waldorf	Referred to Govt'l Operations

Tab D

COMMITTEE REPORT

DATE: March 4, 1991

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

FROM: Asset Allocation Committee

The Asset Allocation Committee met on January 28, 1991 to review the following items:

- o Reporting format revisions
- o Preliminary investment policy statement for the Assigned Risk Plan
- o Staff position paper on the use of tactical asset allocation (TAA) in the Basic Retirement Funds

INFORMATION ITEMS:

1) Reporting Format Revisions.

The Committee reviewed the one-page reporting format on return objectives and funding status for the Basic and Post Funds. This format has been included as the first page of the Quarterly Investment Report (Tab A) since early 1989.

The Committee endorsed several minor changes which make the return objectives portion of the report more readable. In addition, the Committee recommended that the section on funding status be substantially changed and expanded to display actuarial valuation data on the Basic and Post Funds as separate entities.

The revised format has been incorporated in Tab A of this Board folder.

2) Preliminary Investment Policy Statement for the Assigned Risk Plan.

The Assigned Risk Plan provides worker compensation insurance coverage for employers who have unable to secure coverage through the private insurance market. The Plan is administered by the Department of Commerce. By law, responsibility for investment of plan assets transfers from the Department of Commerce to the SBI on May 1, 1991.

The Committee discussed and adopted the attached investment policy statement outline for the Plan (see Attachment A). It calls for a single investment manager whose primary objective will be to match the projected liabilities arising from insurance claims against the plan with the income stream provided by the portfolio.

A more detailed policy paper will be developed by staff in conjunction with the plan's actuary and the investment firm selected to manage the assets. The complete policy statement will be presented to the SBI for approval at its June 1991 meeting.

ACTION ITEM:

1) Position Paper on Tactical Asset Allocation.

The Committee reviewed a staff position paper on tactical asset allocation, a form of market timing. A copy of the paper is included as Attachment B.

Historically, market timing strategies have not been used in the Basic Retirement Funds. Rather, the SBI has focused on the selection of appropriate long term asset allocation targets and rebalanced the assets of the Basic Funds when market changes move the asset mix above or below those targets.

The paper re-examines this policy decision and concludes that tactical asset allocation (TAA) is not appropriate for the Basic Funds. While TAA can add value and enhance returns, staff cited several substantial risks:

- TAA strategies would have to improve their track records significantly in order to consistently outperform a constant rebalancing strategy on a risk/return basis.

- TAA would require a large commitment of the total assets to one, or relatively few, managers and TAA strategies.

- TAA would require a potentially longer evaluation time frame than other investment strategies to determine whether the results were due to skill or chance.

The Committee agreed that TAA is not well suited to the Basic Funds. However, the Committee urged staff to devote further study in the area of optimal rebalancing strategies.

RECOMMENDATION:

The Committee concurs that TAA is not appropriate for the Basic Retirement Funds and recommends that the SBI adopt the staff position paper as its policy statement on this issue.

ATTACHMENT A

ASSIGNED RISK PLAN
INVESTMENT POLICY STATEMENT
PRELIMINARY OUTLINE

I. Background/General Description

- MWCARP is the "insurer of last resort" for employer paid worker's compensation.
- MWCARP provides disability income, medical expenses, retraining expenses and death benefits. Payments may be lump sum or periodic. Some benefits increase with inflation.
- MWCARP is operated as a non-profit organization. Premium rates are set by the Department of Commerce and must be at least equal to rates of private insurers. Unfunded liabilities/deficiencies, if any, are funded through additional assessments to all private insurers.
- MWCARP is tax exempt.

II. Risk Tolerance

Plan has limited tolerance for risk due to:

- erratic cash flows
- no allowance for surplus
- generally short duration liabilities

III. Investment Objectives

- Asset/Liability Match

  Minimize mismatch between assets and liabilities.

- Liquidity

  Provide sufficient income/cash for payment of on-going claims as well as operating expenses.

IV. Asset Allocation

- o Present actuarial data indicates the following asset mix is appropriate. The actual mix will fluctuate in response to changes in the liability stream:

Common Stocks	20.0%
Bonds	75.0
Cash	5.0
	100.0%

- o Bonds should be used to minimize mismatches between plan assets and known liabilities. The most recent actuarial analysis indicates liabilities have a average duration of 4.9 years.

- o Stocks should be used to provide inflation hedge for longer liabilities (recurring medical costs and disability COLA's).

- o Cash is needed to provided sufficient liquidity for payment of claims and expenses.

V. Management Structure

- o A single "balanced manager" (i.e., firm that provides both stock and bond management) should be used. The asset/liability framework makes current SBI stock and bond manager pools inappropriate.

- o Primary goal is to manage the match between assets/liabilities.

- o Secondary goal is to provide return enhancement. Enhanced indexing or a highly structured active management approach is appropriate.

VI. Performance Evaluation

- o Qualitative

  The criteria in the SBI's Manager Continuation Policy for active managers are appropriate.

- o Quantitative

  - Primary concern is asset/liability match. Value of active management (VAM) analysis may not be relevant.

  - Performance of the total portfolio should be reviewed against a benchmark that reflects the asset allocation of the plan. This benchmark must change over time to reflect changes in the liability stream.

BASIC RETIREMENT FUNDS

Tactical Asset Allocation

Minnesota State Board of Investment
Staff Position Paper

March 1991

Executive Summary

The stock market crash of 1987 caused an increased interest in asset allocation, especially tactical asset allocation (TAA). The increased interest in TAA strategies originates from the high returns that can be produced through a successful TAA strategy that avoids the worst performing asset classes.

TAA and other forms of market timing have not been used in the Basic Retirement Funds. This paper re-examines that policy decision and discusses the expected risks and returns associated with TAA.

Current Rebalancing Strategy

The policy asset mix chosen for the Basic Funds incorporates a large commitment to common stocks in order to obtain higher rates of return over the long-term:

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

The SBI's present asset allocation strategy uses a constant rebalancing approach. Currently, staff must rebalance the Basic Retirement Fund if an asset class deviates by more than 10% from its policy allocation (e.g. for stocks 60% ± 6%). The policy gives staff discretion whether to rebalance for deviations in the 5-10% range.

Staff analysis indicates that this rebalancing strategy provides the highest risk-return ratio (i.e. the greatest additional return for the least additional risk) when compared to other deviation ranges. In effect, the SBI's current rebalancing guidelines impose a "buy low, sell high" discipline in the Basic Funds relative to its long-term asset mix policy.

TAA Strategies

TAA strategies try to generate excess return relative to a policy asset mix by increasing/reducing the exposure of an asset class depending on the expected future rate of return relative to the asset classes. Studies using both simulated and actual pension fund results show that a TAA strategy must achieve a significant degree of accuracy to generate any excess returns.

A study by Chua and Woodward indicates that both bull markets (upward movement in stock and bond prices) and bear markets (downward movements) must be correctly forecasted more than two-thirds of the time in order for TAA to produce any value added. Another study by Brinson, Beebower and Hood showed that the range of returns experienced by plan sponsors using explicit or implicit market timing are much more likely to be negative than positive. The study found that the "best case" reported added only 0.25% on an annualized basis over ten years and the average plan lost 0.66% annualized.

TAA Implementation

For a TAA strategy to have a significant impact on the Basic Funds' performance, at least 20% (currently $1.4 billion) would need to be committed to one or more TAA managers. If the SBI could identify three equally skillful managers to provide some diversification among TAA strategies, each manager would manage significantly more assets than the SBI has been willing to commit to a single active management approach.

Conclusion

Staff recommends that the Board retain its current rebalancing policy and not implement a TAA strategy for the Basic Retirement Funds. The hurdles that must be overcome in terms of forecasting accuracy to generate a positive excess return are substantial. In addition, the SBI would assume considerable risk if a TAA strategy were to be implemented. These risks are:

- TAA strategies have greater potential downside loss than upside gain relative to the current rebalancing strategy for the Basic Funds.

- TAA strategies would have to improve their track record significantly in order to consistently outperform a constant rebalancing strategy on a risk/return basis.
- TAA would require a large commitment of the total assets to one, or relatively few, managers and TAA strategies.
- TAA would require a potentially longer evaluation time frame than for other investment strategies to determine whether the results were due to skill or chance.

Additional analyses supporting each of these conclusions are contained in the body of the paper.

BASIC RETIREMENT FUNDS
Tactical Asset Allocation

The stock market crash of 1987 caused an increased interest in asset allocation, especially tactical asset allocation (TAA). The increased interest in TAA strategies originates from the high returns that can be produced through a successful TAA strategy that avoids the worst performing asset classes.

The first section of the paper describes the constant rebalancing strategy currently used by the Basic Retirement Funds. The second section of the paper provides a general description of TAA strategies and analyzes the risk and return that a plan sponsor must assume in implementing a TAA strategy. The last section discusses the appropriateness of implementing a TAA strategy for the Basic Retirement Funds.

Current Rebalancing Strategy

Asset Allocation Policy

The importance of the asset allocation decision cannot be overemphasized. Studies suggest that asset allocation policy explains approximately 90% of the variation in total plan performance among large U.S. pension plans.[1] Therefore, the most important decision made by a pension fund will be the determination of its asset allocation policy.

All asset allocation strategies start by defining a policy asset mix. A policy asset mix represents the desired long run allocation of a pension fund's assets among various broad asset classes, which in turn reflects the pension fund's investment objectives and risk tolerance. The two primary determinants typically used to derive the policy allocation among the various asset classes are the long-run historical risk-return and the correlation of return relationships between the different asset classes.

By definition, transitory market movements do not cause the policy asset mix to be adjusted. Only when the plan's investment objectives or risk tolerance change, or when asset classes are added or deleted, should the policy asset mix be adjusted. In addition, the policy asset mix could be adjusted in the rare event that significant changes occurred in the capital markets, affecting the long-run historical risk-return or correlation of return relationships between the different asset classes.

Once a plan sponsor designates a policy asset mix, an asset allocation strategy can be implemented incorporating the policy asset mix as the baseline. A constant rebalancing asset allocation strategy allows the policy asset mix to deviate due to market movements up to a specified maximum or minimum level at which time it then must be rebalanced back to the policy asset mix. On the other hand, in implementing a TAA strategy, a plan sponsor intentionally makes short term deviations from its policy asset mix to take advantage of a perceived mispricing between various asset classes. The magnitude of the deviations depends on the level of aggressiveness the plan sponsor desires.

Basic Funds Asset Mix

The policy asset mix chosen for the Basic Retirement Funds incorporates the fund's objectives of obtaining a high total rate of return while maintaining enough liquidity to meet the monthly transfer needs to the Post Retirement Fund. The following shows the Basic Retirement Fund's policy asset mix among the various asset classes:

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

Basic Fund's Rebalancing Strategy

The SBI's present asset allocation strategy uses a constant rebalancing approach. Currently, staff must rebalance the Basic Retirement Fund if an asset class deviates by more than 10% from its policy allocation (e.g. for stocks 60% ± 6%). The policy gives staff discretion whether to rebalance for deviations in the 5-10% range.

The trade-off between transaction costs and tracking error determined the Board's rebalancing guidelines. Transaction costs increase as the policy guidelines become tighter thereby reducing the rate of return. Conversely, tracking error decreases as the guidelines become tighter. Tracking error represents the short term risk that the actual return will deviate from the policy asset mix rate of return. In implementing a constant rebalancing strategy a plan sponsor must choose a rebalancing guideline that provides an acceptable rate of return, given a stated policy asset mix, while keeping short term return deviations from policy (tracking error) at a level acceptable to the plan sponsor.

Figure 1 shows the annualized rate of return and standard deviation of return for a stock/bond policy asset mix that approximates the asset mix of the Basic Retirement Funds using various rebalancing guidelines for the time period January 1926 - March 1990. In addition, the third column of Figure 1 shows the tracking error for each rebalancing guideline relative to the constant stock/bond asset mix. The final column provides a risk-return comparison by dividing the potential excess return over a constant policy mix by the potential tracking error incurred by implementing that rebalancing guideline. The chart shows that the annualized rate of return, standard deviation of return, and tracking error all increase as the guidelines become less restrictive. The optimal rebalancing guideline allows the fund to deviate from its policy asset mix by 10%. Allowing the policy asset mix to deviate up to 10% provides the highest risk-return ratio (i.e. the highest additional return for the least additional risk) relative to the constant stock/bond asset mix as shown in the last column. This data supports the SBI's choice of a 10% rebalancing guideline.

Figure 1.

Impact of Alternative Rebalancing Guidelines January 1926 - March 1990

	Annualized Rate of Return	Std. Dev. of Return	Tracking Error from Constant Policy	Risk/Return
Constant Policy	8.56%	13.45%	0.0%	N.A.
5% Deviation	9.46	13.46	0.82	1.09
10% Deviation	9.59	13.53	0.94	$\boxed{1.10}$
15% Deviation	9.75	13.74	1.20	0.99
No Rebalancing	10.22	14.84	4.24	0.39

Constant Policy: 62.5% Stocks/37.5% Bonds

Data Source: Ibbotson Associates. Transaction costs were assumed to be 1% of the assets transferred.

TAA Strategies

TAA strategies try to generate excess return relative to a policy asset mix by increasing/reducing the exposure of an asset class depending on the expected future rate of return of the various asset classes.

Study Results

Several studies have been done that provide evidence that market timing can generate an absolute rate of return greater than that obtained by a balanced portfolio or an all stock portfolio. A study by Jeremy Evnine and Roy Henriksson shows that a real time TAA strategy has generated almost a 5% annualized rate of return greater than a market capitalization weighted stock/bond portfolio over a 13 year period.(2) Another study by Roger C. Clarke, Michael T. FitzGerald, Phillip Berent, and Meir Statman demonstrates that if a manager can develop an asset allocation strategy that provides a certain level of valid information in predicting the better performing asset class, the model will generate value added returns relative to the broad stock market.(3)

Staff concurs that a TAA strategy can potentially add absolute excess returns over the current policy asset mix for the Basic Retirement Funds. However, to determine the appropriate asset allocation strategy for the Basic Retirement Fund, one must not only only look at excess returns, but also the risk assumed to generate those returns.

Return Potential

Any active investment strategy, including TAA strategies, generates excess return by the combination of the number of independent investment decisions made in a certain time period and the excess return that each independent decision generates. [4] For example, an investment strategy that can generate the same excess return for each investment decision can double the potential excess return if twice as many decisions can be made in the same time period. Also, if an investment strategy makes the same number of investment decisions but can increase the amount of excess return that each decision generates, the total excess return of the strategy will increase.

Because TAA decisions are based on major market moves rather than individual stock selections, TAA strategies tend to make relatively fewer investment decisions compared to other types of investment strategies. Therefore, TAA managers need to achieve a high degree of accuracy in their forecast so that their TAA strategy generates a higher level of excess return for each investment decision made relative to other investment strategies.

Additional Study Results

Studies using both simulated and actual pension fund results show that a TAA strategy must achieve a significant degree of accuracy to generate any excess returns. A study done by Jess Chua and Richard Woodward and summarized in Figures 2 and 3 provides a good picture of the accuracy needed in predicting bull and bear markets to add value using a TAA strategy. [5]

Figure 2 shows that a TAA strategy moving between stocks and cash needs at least a 90% accuracy in bear markets and a 60% accuracy in bull markets to generate positive returns of only 0.49% per year before transaction costs relative to common stock returns. Figure 2 also shows that a stock/cash TAA strategy needs to have at least an 80% accuracy in bull markets and 50% accuracy in bear markets to produce a positive return of 0.64% before transaction costs. If the stock/cash TAA strategy dropped from 80% to 70% accuracy for bull markets, it would produce a negative return of 0.79% per year.

Figure 3 shows that a TAA strategy moving between stocks and bonds that achieves a 100% accuracy in bear markets, needs at least a 60% accuracy in bull markets to produce a positive return of only 0.28% per year before transaction costs relative to common stock returns.

Figure 2.

TAA Strategy Using Stocks and T-Bills
Potential Value Added

Bull Market Accuracy		Bear Market Accuracy 50%	60%	70%	80%	90%	100%
	Mean	-3.41	-2.69	-2.08	-1.42	-0.78	-0.01
50%	S.D.	18.95	19.65	20.20	20.79	21.39	24.01
	Mean	-2.14	-1.42	-0.80	-0.15	0.49	1.26
60%	S.D.	17.90	18.58	19.12	19.71	20.29	23.00
	Mean	-0.79	-0.07	0.54	1.20	1.83	2.61
70%	S.D.	16.54	17.23	17.76	18.34	18.92	21.75
	Mean	0.64	1.36	1.98	2.63	3.27	4.04
80%	S.D.	14.89	15.59	16.12	16.70	17.28	20.29
	Mean	1.95	2.67	3.29	3.94	4.58	5.35
90%	S.D.	13.07	13.78	14.32	14.92	15.51	18.75
	Mean	3.25	3.98	4.59	5.24	5.88	6.65
100%	S.D.	10.68	11.46	12.04	12.68	13.31	16.91

S.D. = Standard Deviation

Source: J.H. Chua and R.S. Woodward, "Gains from Stock Market Timing," *Monograph Series in Finance and Economics*, Salomon Brothers, Monograph 1986-2.

Assumes no transaction costs.

Figure 3.

TAA Strategy Using Stocks and Bonds
Potential Value Added

Bull Market Accuracy		Bear Market Accuracy 50%	60%	70%	80%	90%	100%
	Mean	-3.64	-3.02	-2.51	-1.97	-1.46	-0.94
50%	S.D.	16.49	17.04	17.44	17.83	18.18	18.52
	Mean	-2.41	-1.79	-1.28	-0.74	-0.23	0.28
60%	S.D.	15.41	15.94	16.34	16.71	17.05	17.38
	Mean	-1.17	-0.55	-0.04	0.50	1.01	1.52
70%	S.D.	14.07	14.60	14.99	15.35	15.68	16.00
	Mean	0.22	0.83	1.34	1.89	2.40	2.91
80%	S.D.	12.30	12.84	13.22	13.57	13.90	14.20
	Mean	1.48	2.09	2.60	3.15	3.66	4.17
90%	S.D.	10.21	10.78	11.17	11.53	11.86	12.16
	Mean	2.72	3.34	3.85	4.39	4.90	5.41
100%	S.D.	7.36	8.03	8.48	8.87	9.22	9.54

S.D. = Standard Deviation

Source: J.H. Chua and R.S. Woodward, "Gains from Stock Market Timing," *Monograph Series in Finance and Economics*, Salomon Brothers, Monograph 1986-2.

Assumes no transaction costs.

A Brinson, Beebower, and Hood study looked at actual returns to analyze the explicit or implicit market timing results of 91 corporate pension funds. (6) The results of their study showed that over a ten year period the corporate pension funds lost, on average, 0.66% per year due to market timing relative to their average asset allocation. Over the ten year period the individual plan results ranged from a positive 0.25% to a negative 2.68% per year. This study shows that market timing by plan sponsors, whether intended or not, usually reduced performance. In addition, the study shows that the range of returns are much more likely to be negative than positive and the "best case" result was barely positive.

Risk vs. Return

In evaluating any investment strategy, a plan sponsor must not only look at the potential excess return that can be generated, but also the risk that must be taken to generate that potential excess return. The risk incurred in implementing a TAA strategy to achieve an excess return relative to a policy asset mix can be quite high. The Chua and Woodward study showed that, on average, the standard deviation of the excess return was about 10 times that of the excess return generated by the TAA strategy.(7)

Information Ratio

To put this into perspective relative to other investment strategies, an information ratio should be calculated. The information ratio takes the value added relative to a given benchmark and divides it by a measure of variability (e.g. standard deviation). The information ratio provides a good measurement of the risk/return relationship of an investment strategy or manager. In addition, the information ratio allows a plan sponsor to evaluate the risk/return relationship of various investment strategies relative to each other. By using the information ratio, a plan sponsor can evaluate which investment strategies will provide the highest value added relative to the risk the plan sponsor must take to generate that return. Since the Chua and Woodward study showed a standard deviation of about 10 times that of the corresponding value added return generated by a TAA strategy, the information ratio would be about 0.1 before management fees. In comparison, the SBI investment guidelines for its active equity managers strives to retain and hire new managers that can provide an information ratio of 0.5.

As discussed previously in this section, a TAA manager needs to achieve a high degree of accuracy in their forecast to generate a high level of excess return for each investment decision relative to other investment strategies that make more investment decisions in a given time frame. If a TAA strategy does not achieve a high degree of forecasting accuracy, the TAA strategy will generate a lower information ratio and require a substantially longer time frame to statistically prove within a certain confidence level that the TAA strategy can generate excess return. The following table shows the number of years it would take to have a 90% confidence level that a manager can add value given a certain information ratio:

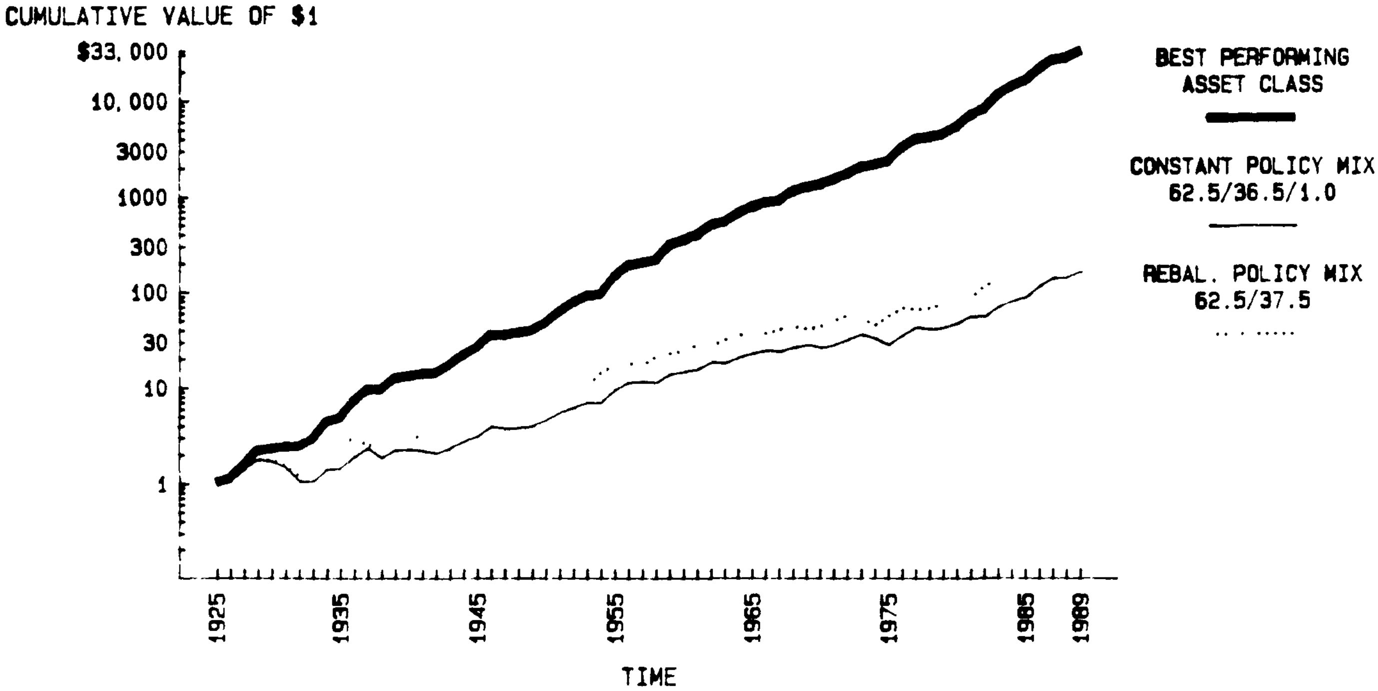
Information Ratio	**Years**
.10	164.0
.20	41.0
.30	18.2
.40	10.2
.50	6.6
.75	2.9
1.00	1.6

The Chua and Woodward study showed that TAA strategies on average have an information ratio of 0.1 before transaction costs. Therefore, a plan sponsor would have to implement a TAA strategy for a very long period of time before they could be reasonably confident that it can add value. (In comparison, the SBI's active managers' information ratios range from 0.2 to 1.2.) The long time frame required to confirm the accuracy of a TAA strategy constitutes an additional risk that a plan sponsor must assume in implementing a TAA strategy.

Best and Worst Cases

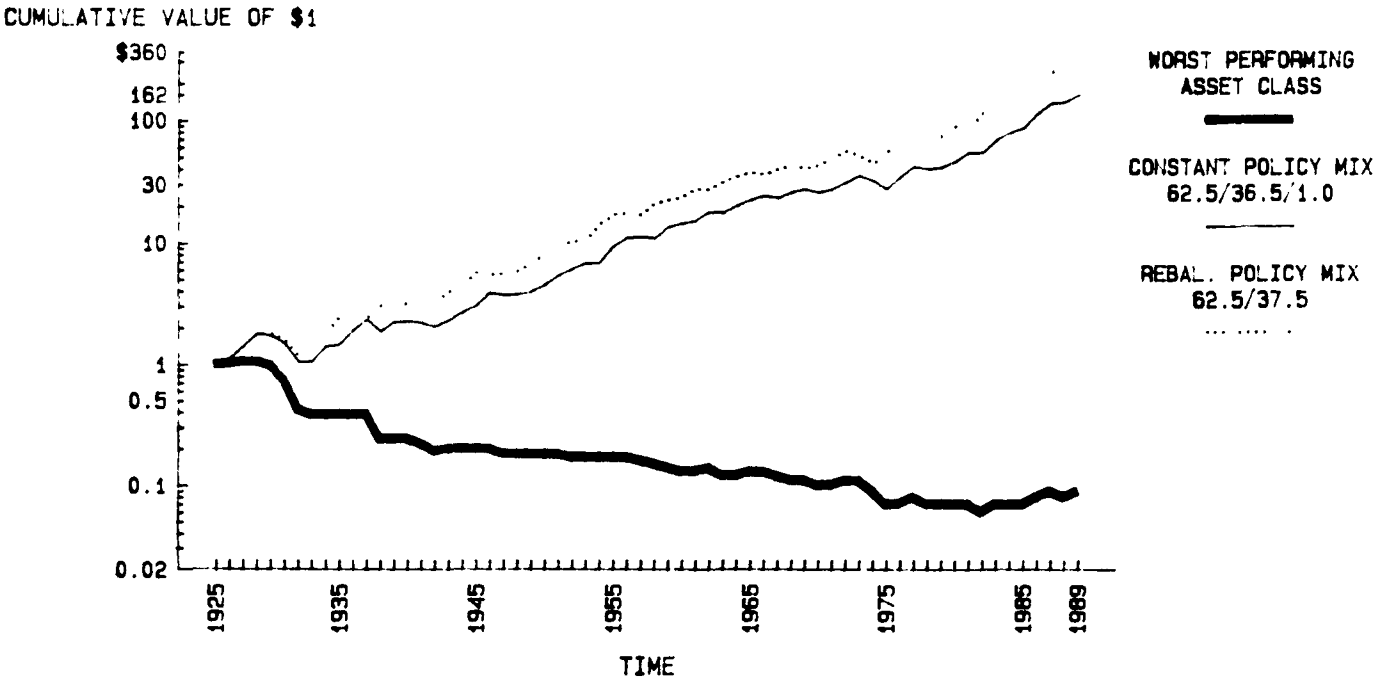
Staff has analyzed the risk of applying a TAA strategy relative to the current constant rebalancing policy. The study resembles a similar analysis presented in the Basic Retirement Funds Investment Policy, Part II, staff position paper dated February 1987. Figures 4 and 5 show the potential rate of return for successful and unsuccessful TAA strategies by plotting the cumulative values of an investment in the best and worst performing asset classes for each year since 1926. In addition, the figures show the cumulative value of an investment in an asset mix that approximates the Basic Funds policy weights and rebalanced under the SBI's current rebalancing guidelines.

FIGURE 4
POTENTIAL BENEFITS OF SUCCESSFUL MARKET TIMING
BEST PERFORMING ASSET CLASS VS POLICY ASSET MIX



SOURCE: IBBOTSON ASSOCIATES

FIGURE 5
POTENTIAL COSTS OF UNSUCCESSFUL MARKET TIMING
WORST PERFORMING ASSET CLASS VS POLICY ASSET MIX



SOURCE: IBBOTSON ASSOCIATES

One dollar initially invested in the best performing asset class grows to almost $42,468 from 1926-89, or an 18.1% average annual compounded rate of return. One dollar initially invested in an asset mix similar to the Basic Funds and rebalanced under current guidelines grows to $337, or a 9.6% average annual compounded rate of return over the same time period. This demonstrates that a successful TAA strategy can offer superior performance, outperforming the policy asset mix by 8.6 percentage points per year. However, one dollar initially invested in the worst performing asset class shrinks to $0.10 during the 1926-89 time period, or a -3.6% average annual compounded rate of return. Thus the worst performing asset class strategy underperformed the rebalanced asset mix by 13.1 percentage points per year.

Compared to the baseline asset mix, two-thirds of the potential returns from a TAA strategy are less than the rate of return generated by the baseline asset mix using a constant rebalancing policy. This skewness towards negative returns also occurred in the Brinson, Beebower, and Hood study on corporate pension funds discussed earlier in this section.

Figures 4 and 5 represent unrealistic examples in that plan sponsors or investment managers do not possess perfect foresight. In addition, transaction costs are not included in the analysis. However, the analysis does show that a TAA strategy needs to achieve a fairly high degree of accuracy to outperform the Basic Retirement Funds policy asset mix.

TAA Implementation

Potential Impact on the Basic Funds

For a TAA strategy to have a significant impact on the Basic Retirement Funds' performance, a substantial portion of the assets would need to be assigned to the TAA strategy. If a TAA strategy with perfect forecasting ability received 20% of the total Basic Retirement

Funds, it could expect to add 4.1% annually with a standard deviation of 2.6% relative to the constant rebalancing strategy before transactions costs. As noted earlier, however, assuming perfect forecasting ability is not realistic. The Chua and Woodward study showed that, on average, a TAA strategy achieves an information ratio of 0.1 before transaction costs. Using this information ratio, a TAA strategy would more likely add only 0.26% incremental return before transaction costs to the total fund return if 20% of the Basic Funds were committed to the strategy. A TAA strategy would need an information ratio of 0.4 to equal the 1.0% excess return generated by the current Basic Retirement Funds' rebalancing policy.

TAA Management Structure

Given that the Basic Funds' assets total $7.1 billion, at least $1.4 billion (20%) would need to be allocated to a TAA strategy in order to have a material influence on the Basic Retirement Funds' total rate of return. This would require a substantial commitment of assets to one TAA manager or strategy. It should be noted that a study by Roger Clarke, Michael FitzGerald, Philip Berent and Meir Statman shows that hiring more than one TAA manager can potentially reduce a plan sponsor's risk by diversifying among different TAA strategies. Below are two examples from that article. [8]

Equal Ability	Expected Return	Std. Dev.	Risk/ Return
Manager A	3.4%	17.8%	.191
Manager B	3.4%	17.8%	.191
50% A/50% B	3.4%	16.1%	.211
Unequal Ability			
Manager A	4.9%	17.3%	.283
Manager B	2.2%	18.2%	.120
50% A/50% B	3.4%	16.2%	.207

Depending on the expected returns, standard deviations, and the correlation of returns between the managers various TAA strategies, the study suggests that it may be advantageous to hire more than one TAA manager. The first example shows that a plan sponsor would gain by diversifying between the two managers of equal ability. The plan sponsor would receive the same expected return but have a lower total portfolio standard deviation. However, the second example shows that the plan sponsor might prefer to hire only manager A. Depending on the plan sponsors risk tolerance, the diversification gained by hiring manager B might not offset the lower expected return. Given the size of the Basic Funds, even if the SBI could find three equally good managers to provide TAA diversification, each manager would be managing significantly more assets than any of the SBI's current active managers.

Conclusion

Staff recommends that the Board retain its current constant rebalancing policy and not implement a TAA strategy for the Basic Retirement Funds. The hurdles that must be overcome in terms of forecasting accuracy to generate a positive excess return are substantial. In addition, the SBI would assume considerable risk if a TAA strategy were to be implemented. These risks are:

- TAA strategies have greater potential downside loss than upside gain relative to the current constant rebalancing strategy for the Basic Funds.
- TAA strategies would have to improve their track record significantly in order to consistently outperform a constant rebalancing strategy on a risk/return basis.
- TAA would require a large commitment of the total assets to one, or relatively few, managers and TAA strategies.
- TAA would require a potentially longer evaluation time frame than for other investment strategies to determine whether the results were due to skill or chance.

FOOTNOTES

1) G.P. Brinson, G. Beebower, and L.B. Hood, " The Determinants of Portfolio Volatility," *Financial Analyst Journal* (July/August, 1986), pp. 39-44.

2) Jeremy Eunine and Roy Henriksson, "Asset Allocation and Options" *The Journal of Portfolio Management* (Fall 1987), pp. 56-61.

3) Roger G. Clarke, Michael T. FitzGerald, Phillip Berent, and Heir Statman, "Market Timing with Imperfect Information," *Financial Analyst Journal* (Nov.-Dec., 1989), pp. 27-36.

4) R. C. Grinold, "The Fundamental Law of Active Management," *The Journal of Portfolio Management* (Spring 1989), pp. 30-37.

5) J.H. Chua and R.S. Woodward, " Gains from Stock Market Timing," *Monograph Series in Finance and Economics*, Salomon Brothers, Monograph 1986-2, p. 19.

6) Brinson, pp. 39-44.

7) Chua, p. 15.

8) Roger G. Clarke, Michael T. FitzGerald, Philip Berent, and Meir Statman, "Diversifying Among Asset Allocators," *The Journal of Portfolio Management* (Spring 1990), pp. 9-14.

Tab E

COMMITTEE REPORT

DATE: March 4, 1991

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

FROM: Equity Manager Committee

The IAC Equity Manager Committee met on February 22, 1991, to review the following agenda:

- o Review of Manager Performance
- o In-Depth Review of IDS
- o Contract Renewals

INFORMATIONAL ITEMS:

1) Review of Manager Performance

For the quarter ending December 31, 1990, the Basic Fund's domestic equity program underperformed both its aggregate benchmark and the Wilshire 5000 (Equity Program 7.9% vs. Aggregate Benchmark 8.6% vs. Wilshire 5000 8.7%). For the latest five year period, the current equity managers in the Basic Funds have outperformed their aggregate benchmark but underperformed the Wilshire 5000.

The evaluation reports for each manager are attached at the end of this tab section.

2) In-Depth Review of IDS

Last quarter the committee requested that staff conduct a formal review of IDS as part of the regular 3-year review cycle. A copy of staff's full report on IDS is attached. A summary of staff findings follows:

- o IDS maintains a strong, stable organization that has consistently implemented its investment style over a variety of market environments.
- o IDS's investment process has generated a small cumulative positive value added return relative to its benchmark.
- o Staff has some concerns about the ability of the IDS's benchmark to explain the returns generated by IDS. Recent

changes by IDS have improved the benchmark but some areas may need further work to more accurately reflect IDS's investment style. Specifically, the current benchmark does not adequately reflect the growth bias that IDS incorporates into its investment process. In addition, the current benchmark may not satisfactorily reflect the average utility sector weighting. The sector weighting discrepancy also reflects the current benchmark's inadequacy in reflecting IDS's growth bias.

Staff concludes that IDS should continue to be retained as an equity manager for the SBI. The issues cited with respect to the benchmark do not warrant probation status. To date IDS has worked diligently to improve its benchmark and has expressed their willingness to continue to work with staff to resolve the remaining concerns as soon as possible. Upon review, the committee concurs with the staff's conclusion concerning IDS.

The Committee requested that staff provide an in-depth review of Sasco Capital at its next quarterly meeting.

ACTION ITEM:

1) Contract Renewals

Current contracts for five of the active stock managers expire on March 31, 1991:

- o Concord, Franklin, Rosenberg and Sasco were retained on April 1, 1989.
- o GeoCapital was retained on April 1, 1990.

At present, each manager meets the qualitative criteria set forth in the SBI's Manager Continuation Policy. Given the short period of time these managers have been under contract, it is difficult to draw firm conclusion about their performance.

RECOMMENDATION:

The Committee recommends that the SBI authorize the executive director, with assistance from SBI's legal counsel to negotiate and execute one year contract extensions with the following firms subject to the standard 30-day termination provision:

- o Concord Capital Management
- o Franklin Portfolio Associates Trust
- o GeoCapital Corporation
- o Rosenberg Institutional Equity Management
- o Sasco Capital, Inc.

Detailed Review of

IDS Equity Advisors

I. ORGANIZATION DETAIL

A. Ownership

B. Portfolio Management Responsibilities

C. Assets Under Management

D. Personnel Turnover

II. INVESTMENT APPROACH

A. Investment Philosophy

B. Prominent Characteristics

III. PERFORMANCE ANALYSIS

A. Benchmark Explanatory Power

B. Performance Relative to the Wilshire 5000

C. Portfolio Performance Attribution

IV. SUMMARY OF BOARD/IAC ACTIONS TO DATE

V. CONCLUSION

EXHIBITS

1- Risk Analysis Summary
2- Sector Weights
3- Historical Return Data
4- Performance Attribution
5- Performance Attribution Analysis - Sector Allocation
6- Performance Attribution Analysis - Stock Selection
7- Quarterly Sector Weights
8- Benchmark Comparisons
9- VAM Analysis

EXTERNAL MANAGER DETAIL

IDS EQUITY ADVISORS

I. ORGANIZATION DETAIL

A. Ownership

IDS Equity Advisors is a member of IDS Advisory Group, a consortium of five investment management firms owned by IDS Financial Corporation. Initially IDS Financial Corporation was a wholly owned subsidiary of Alleghany Corporation, a publicly-held company. In 1984 Shearson Lehman, a subsidiary of American Express Company, purchased IDS Financial Corporation from Alleghany.

B. Portfolio Management Responsibilities

At the inception of the relationship in March 1983, Peter Anderson managed the SBI account. However, in 1984 Peter Anderson requested that the SBI account be transferred to Mitzi Malevich due to her greater familiarity with the SBI's investment process. Staff had no objections to the request and Ms. Malevich has managed the account since 1984.

C. Assets Under Management

Equity Assets Under Management

	Equity only Accounts	Equity only Market Value (In Millions)
Dec. 1983	41	$2,299.9
Dec. 1984	25	1,664.5
Dec. 1985	23	1,825.5
Dec. 1986	25	2,161.1
Dec. 1987	26	2,223.1
Dec. 1988	23	2,017.1
Dec. 1989	25	2,612.4
Dec. 1990	25	2,747.8

	Balanced Accounts	Equity Portion Balanced Accounts Market Value (In Millions)	Total Equity (In Millions)
Dec. 1983	27	$571.3	$2,871.2
Dec. 1984	29	601.5	2,266.0
Dec. 1985	24	700.6	2,526.1
Dec. 1986	24	547.2	2,708.3
Dec. 1987	25	708.6	2,931.7
Dec. 1988	28	866.8	2,883.9
Dec. 1999	28	935.3	3,547.7
Dec. 1990	32	743.8	3,491.6

During 1984 IDS suffered a large reduction in equity only accounts under management mainly due to poor performance during 1983 and early 1984. Since 1984 the number of equity only accounts has remained fairly stable. Since the inception of the SBI account, IDS's balanced accounts (portfolios with both stocks and bonds) have increased at a modest rate.

D. Personnel Turnover

IDS's turnover among its professional staff, historically, has been low. Most of the portfolio managers that left IDS resigned to set up their own firm or to work for another investment firm. A significant portion of IDS's analyst turnover occurs because IDS fills a majority of their portfolio manager openings internally by promoting their best analysts who express an interest in portfolio management. Other analysts have left IDS for other reasons, but not at a level to cause the SBI staff to be concerned.

II. INVESTMENT APPROACH

A. Investment Philosophy

IDS uses an economic and market analysis approach in its investment process. Sector allocations receives the greatest emphasis. However, IDS considers its stock selection process that concentrates on medium and large capitalization growth stocks also to be important. Asset allocation decisions (stocks vs. cash) are less important than either sector allocation or stock selection.

Asset Allocation

IDS's equity strategy begins with an economic and market overview. IDS's Investment Policy Committee (IPC) consisting of its senior equity and fix income managers conducts the analysis. Based on input provided by brokerage houses, IDS economics staff, and portfolio managers, the IPC attempts to identify the key characteristics of the current economic cycle. From this discussion, the IPC sets the cash and equity allocation ranges for the portfolio managers. IDS does not implement an aggressive asset allocation strategy. IDS will shift their cash allocation from 0-20% and changes tend to be gradual over the course of a market cycle.

Sector Weighting

Utilizing the IPC's economic analysis the Common Stock Committee (CSC), composed of the equity portfolio managers, determines the relative attractiveness of its nine market sectors in terms of interest rates, earnings momentum, and current position in the business cycle. IDS also evaluates the sector attractiveness relative to various macro-economic trends predicted by IDS's economic analysis. IDS's portfolio managers provide their own input but also use their economics and research staffs to provide additional information unique to each sector. The CSC meets at least weekly and establishes sector weighting ranges for the portfolio managers. The nine market sectors that IDS uses to classify individual securities are:

1. Technology
2. Industrial Intermediate Growth
3. Industrial Intermediate Cyclical
4. Industrial Basic
5. Consumer Cyclical
6. Consumer Stable
7. Utilities
8. Financial
9. Energy

Stock Selection

The CSC also selects the list of stocks that the portfolio managers can purchase from and which ones will be removed and consequently must be sold. The CSC categorizes each approved stock into one of three tiers depending on its relative attractiveness and liquidity. IDS defines attractiveness based on the stocks potential earnings growth and its earnings momentum. IDS also looks at value by using factors such as relative price-to-earnings and relative price-to-book. In addition to conducting earnings growth and value analysis, IDS's analysts also conduct other analysis such as balance sheet strength, new products, management strength, production efficiencies, and research and development.

The tier structures are designed such that the portfolio managers must include tier one stocks in their portfolio. The portfolio managers have more discretion in what they include from tiers two and three. The tier structure also restricts the size of each stock holding. For tier one the individual security investment must be between 4.5% to 6.0% of the total portfolio. For tiers two and three the ranges are 3.0% to 4.5% and 1.5% to 3.0% respectively. Stocks that do not appear in one of the tiers can not be purchased by a portfolio manager. If portfolio managers want to include such a stock in their portfolios, they must first get approval from the other equity managers in a CSC meeting.

B. Prominent Characteristics

An analysis of the firm's past portfolios reveals a number of prominent risk factors and sector exposure highlights. The following risk and sector exposure highlights were derived from Exhibits 1 and 2.

Risk Exposure Highlights

IDS's portfolios relative to the BARRA Hicap Universe show a consistent bias towards a higher exposure to beta, growth, and variability in markets and lower exposure to book-to-price and yield. This confirms IDS's stated orientation towards growth stock investing. The range between IDS's maximum and minimum positions indicates that IDS will take moderate bets over time but will not let its portfolios be exposed to any aggressive risk factor bets.

Sector Exposure Highlights

IDS's portfolios relative to the S&P 500 show an overweighting in basic materials and transportation and an underweighting in energy and utilities. The maximum and minimum positions show that IDS will make fairly substantial bets in most sectors over time in its sector allocation decision process. This confirms the firm's rotational style.

Benchmark Construction

Initially IDS's benchmark used the SBI asset class target (Wilshire 5000). Given the sector rotational aspect of IDS's approach, a broad market benchmark seemed appropriate.

In 1987, SBI staff revisited IDS's benchmark and made modifications to better reflect the market capitalization and weighting structure of IDS's research universe. Also the new benchmark took into account SBI's South Africa and liquor and tobacco restrictions. In addition the benchmark included a 10% cash allocation to reflect IDS's willingness to shift its cash allocation from 0 to 20%. IDS implemented the benchmark in the third quarter of 1987 and it remained in effect through the first quarter of 1990.

In 1989 IDS decided to refine the benchmark and assumed the responsibility of constructing the benchmark on an ongoing basis. The construction process implemented as of the second quarter 1990 uses the following criteria to build the benchmark portfolio:

1. Only include securities in IDS's research universe.

2. Eliminate securities with a market capitalization less than $500 million.

3. Eliminate all SBI restricted stocks.

4. Weight remaining stocks in the following manner:

Mkt Cap Tier $ Millions	Weight (%)
500 - 999	5
1000 - 1999	10
2000 - 4999	25
5000 - 9999	25
10000+	35

5. Equal weight of all stocks within each tier.

6. Weight cash at a 10% based on IDS's willingness to shift its cash allocation from 0 to 20%

Benchmark Risk Factor and Profile

A valid benchmark should exhibit risk factor and sector exposures similar in direction and magnitude to historical portfolio exposures.

As can be seen from Exhibit 1, IDS's average benchmark risk factor profile does not show a reasonably close similarity to the average (mean) of IDS's past actual portfolios. The risk factors that show the largest differences include variability in markets, beta, growth, yield, and book-to-price. The benchmark average risk characteristics actually show a much closer match to the S&P 500 than to IDS's historical average. In general, IDS's benchmark does not reflect the growth bias that IDS incorporates into its investment process. Exhibit 8 shows an analysis comparing the current benchmark to the previous one. The analysis, based on a small set of data points, shows that the new benchmark provides some improvement but still does not adequately reflect IDS's growth bias.

With respect to sector weights, Exhibit 7 also indicates that the historical benchmark average does not always show a close similarity to the average of IDS's actual portfolios. The largest deviations occur in the utility, financial, and energy sectors. However, Exhibit 8 shows that the current benchmark showed improvement with respect to the weights for the energy and financial sectors but the utility sector still shows a large deviation between the benchmark and historical average.

The above risk factor and sector profile show that the benchmark represents an improvement over using a broad market index (e.g. size, energy and financial sector weightings are more representative). However, a number of areas should be reviewed to improve the benchmark and make it a more accurate representation of IDS's investment style. Specifically, the variability in markets, growth, beta, yield, and book-to-price risk factors and the utility sector weight need to be revisted.

Benchmark Coverage and Turnover

Benchmark coverage measures the extent to which the benchmark contains securities actually held by the manager. Coverage will vary depending on the level of discipline exhibited in a manager's definition and implementation of its investment process. A valid benchmark should produce a coverage ratio in the range of 80-100%. In addition, a stock held in the actual portfolio implies that the manager believes that particular stock will do well relative to the other stocks in the manager's benchmark. Therefore, the weighting of each of the holdings in the active portfolio should exceed the corresponding weights assigned to the same securities in the benchmark.

Benchmark turnover measures the proportion of the benchmark's total market value that represents either the purchase of new securities or additions or reductions to existing positions at each rebalancing period. A valid and investable benchmark should experience reasonable levels of turnover. However, a realistic passive management implementation of a manager's benchmark should not incur a semi-annual turnover greater than 15%.

Table I shows a summary of IDS's benchmark coverage and turnover results.

Table I

1/87-9/90 Semi-Annual Data	Benchmark Coverage	Actual Portfolio Weights Greater Than Benchmark Weights	Semi-Annual Benchmark Turnover
Average	90.47%	99.65%	17.66%
Minimum	83.49	97.88	11.56
Maximum	95.80	100.00	26.71

In terms of coverage, IDS's benchmark, on average, captured 90% of the IDS actual portfolio since July of 1987. In addition, Table I shows that nearly all the actual portfolio weights exceeded their corresponding benchmark weights. Both of these measures support the validity of using IDS's benchmark as a baseline from which to conduct performance attribution analysis.

In regards to benchmark turnover, IDS's benchmark maintained a moderately low turnover rate. The average turnover of IDS's benchmark does produce a slightly higher turnover rate than the preferred level of 15%. However, eliminating the two periods when the benchmark was changed reduces the average turnover to 14.8%. This provides an additional indication that IDS's benchmark represents a valid and investable benchmark.

III. PERFORMANCE ANALYSIS

A. Benchmark Explanatory Power

Because the manager's benchmark more accurately represents the manager's investment style than the broad market, it should do a better job of explaining the returns generated by the manager. Calculating an information ratio (IR) provides an useful analytical measure to determine the benchmark's explanatory power. The IR compares the Value of Active Management (VAM) to the standard deviation of the VAM. Holding everything else constant, a valid benchmark should reduce the VAM standard deviation and produce a larger IR than a broad market index (e.g. Wilshire 5000). Table II summarizes an IR analysis of IDS's actual returns relative to their benchmark and the Wilshire 5000.

Table II

For the Time Period 7/1/87 to 6/30/90	IDS Actual vs. IDS Benchmark	Actual vs. W5000
Cumulative Annualized VAM	-1.47	-1.24
Annualized Standard Deviation of VAM	6.19	5.67
Information Ratio	-0.24	-0.22
Information Ratio T-Statistic	-0.43	-0.40
Percentage of months VAM > 0	56.41%	53.85%

The IDS benchmark does not reduce the VAM standard deviation relative to using the Wilshire 5000 as a benchmark. Given the VAM standard deviation, IR, and IR t-statistic, the IDS benchmarks over this time period did not do a better job of explaining the returns generated by IDS than the Wilshire 5000. This result provides additional evidence to the risk factors and sector allocations results discussed earlier that the IDS benchmark looks more like a broad market index than the IDS historical average.

The explanatory power of the manager's benchmark can also be derived from correlations using residual returns based on the manager's actual portfolio returns versus those of the market (EXM), and the manager's VAM, and the manager's benchmark returns versus those of the market (MFT). A valid benchmark should exhibit a positive correlation between EXM and MFT. Intuitively the correlation should be positive because when the manager's benchmark (or investment style) performs well relative to the market, one would expect the manager's portfolio will also do well relative to the market. On the other hand, a valid benchmark should over time produce a roughly zero correlation between MFT and VAM, because the manager's ability to add value relative to the benchmark should not be affected by the performance of the benchmark (i.e. style) relative to the market. Table III displays IDS's correlation analysis.

Table III

IDS Equity Advisors
Residual Correlation Matrix

	EXM	MFT	VAM
Portfolio vs. Market (EXM)	1.00		
Benchmark vs. Market (MFT)	0.04	1.00	
Portfolio vs. Benchmark (VAM)	0.90	-0.40	1.00

The IDS benchmark does not yield either a strong positive correlation between EXM and MFT nor a zero correlation between MFT and VAM. This analysis again shows that IDS's benchmark does not provide additional explanatory power relative to a broad capitalization weighted index. As with the IR analysis, this analysis incorporates both the current and previous benchmark.

It should be noted that the analysis time frame covers two benchmarks. IDS modified the original benchmark because staff analysis showed that it did not provide a better baseline than the Wilshire 5000. IDS implemented the new benchmark in the second quarter of 1990. As discussed earlier, Exhibit 8 shows that the new benchmark provided improvement in the sector weights (i.e. energy and financial) over the previous benchmark. However, large deviations in various risk factors (e.g. beta, growth, yield, and variability in markets) and the utility sector weighting still remain.

B. Performance Relative To The Wilshire 5000

Exhibit 3 shows that on a cumulative basis since January 1984, IDS's equity only benchmark return (109.8%) slightly underperformed the broad market return (113.3%). This again supports the previous conclusion that the IDS's benchmark reflects the broad market.

C. Portfolio Performance Attribution

IDS computes a performance attribution report that breaks value added returns relative to IDS's benchmark into four components: 1) market timing; 2) sector allocation; 3) stock selection and 4) residual. However, IDS's performance attribution analysis only goes back to July 1989. Staff provides some additional analysis by looking at total portfolio and equity-only returns since January 1984.

<u>Market Timing</u>

IDS's market timing detracted from total portfolio performance. Exhibit 4 shows that market timing generated value added of -0.46% for the time period July 1989 through December 1990 on a cumulative basis.

Since January 1984, IDS's market timing decisions generated a small negative value added. Exhibit 3 shows that IDS's total portfolio return slightly underperformed relative to its equity only return while IDS's benchmark total return slightly outperformed its equity only return.

Given the short time frame and minimal impact on value added returns it is not possible at a reasonable confidence level to determine whether IDS's economic and market analysis can add value through market timing. However, the low volatility of IDS's market timing value added returns remains consistent with its philosophy to not make large asset allocation bets.

<u>Sector Allocation</u>

Exhibit 4 shows that since July 1989, sector allocation contributed positive value added returns of 1.94% relative to IDS's benchmark on a cumulative basis.

When broken down by sector (see Exhibit 5), all the sectors were positive on a cumulative basis except for consumer stable. Of the sectors showing positive value added, industrial basic and industrial intermediate cyclical provided the majority of the 1.94% cumulative value added. Given the short time frame firm conclusions can not be drawn, but it may signal that IDS can generate consistent value added returns through its sector allocation portion of its investment process.

Stock Selection

Exhibit 4 shows that since July 1989 stock selection provided the greatest value added among the four sources of return contributing a 2.60% on a cumulative basis. Exhibit 6 provides more detail by breaking down the stock selection by sector. The majority of IDS's value added occurred in the consumer cyclical and energy sectors. The majority of the negative value added took place in the financial, utilities, and industrial intermediate growth. The stock selection area of IDS's investment process currently generates the highest volatility and has the highest potential impact on IDS's value added returns. However, the short time frame analyzed does not provide enough data to determine at a reasonable confidence level what IDS's stock selection process contributes to IDS's total value added return.

In addition, Exhibit 3 shows that IDS's equity investment decisions (sector and stock selection) generated value added returns from January 1984 through September 1990 relative to its benchmark. IDS recorded 5.8% (133.6 vs. 127.8) cumulative value added (.94% annualized) during this time period.

Residual/Trading Effects

The residual results include value added returns that can not be captured in the other three areas due to IDS's performance attribution construction process. The performance attribution calculations are based on buy and hold percentages calculated at the beginning of each month. Any changes that occur during the month due to trading or market movements will show up in this category. Exhibit 4 shows that these items contributed a negative 0.91% value added since July 1989.

VAM Analysis

The VAM graph (Exhibit 9) shows that IDS has accomplished a modest value added return since January 1984 relative to its current and historical benchmarks. The graph shows that IDS does not provide a consistent value added but instead goes through cyclical periods of positive and negative performance with the net effect being slightly positive.

IV. SUMMARY OF BOARD/IAC ACTIONS TO DATE

In January 1983 the Board approved a recommendation to hire IDS Equity Advisors. The firm received $50 million in March 1983.

In January 1988 IDS received an additional $30 million of SBI assets due to rebalancing activity in the Basic Retirement Funds.

V. CONCLUSION

IDS maintains a strong, stable organization that consistently implements its investment style over a variety of market environments. IDS's investment process has generated a small cumulative positive value added return relative to its benchmark.

Staff has some concerns about the ability of the IDS's benchmark to explain the returns generated by IDS. Recent changes by IDS have improved the benchmark but some areas may need further work to more accurately reflect IDS's investment style. Specifically, the current benchmark does not adequately reflect the growth bias that IDS incorporates into its investment process. In addition, the current benchmark may not satisfactorily reflect the average utility sector weighting. The sector weighting discrepancy also reflects the current benchmarks inadequacy in reflecting IDS's growth bias.

Staff concludes that IDS should continue to be retained as an equity manager for the SBI. The issues cited with respect to the benchmark do not warrant probation status. To date IDS has worked diligently to improve its benchmark and has expressed that they will continue to work with staff to resolve the remaining concerns as soon as possible.

EXHIBIT 1

RISK ANALYSIS SUMMARY
IDS EQUITY ADVISORS

DATE	# STKS	SPEC RISK	EQ. BETA	VAR. MKTS	EAR. VAR	BOOK/ PRICE	SIZE RISK	GROWTH RISK	EAR./ PRICE	YIELD	FIN. RISK
01/01/80	51	0.83	1.15	0.37	-0.17	0.38	-0.27	-0.25	0.07	-0.26	0.02
04/01/80	50	0.87	1.19	0.49	-0.13	0.39	-0.24	-0.21	0.12	-0.25	0.01
07/01/80	56	0.74	1.09	0.17	-0.24	0.33	-0.14	-0.19	0.06	-0.69	0.01
10/01/80	46	0.83	1.17	0.52	-0.22	0.54	-0.20	-0.37	0.09	-0.97	-0.05
01/01/81	50	0.74	1.19	0.42	0.05	0.56	-0.41	-0.42	0.06	-0.52	0.02
04/01/81	54	0.70	1.12	0.24	0.02	0.39	-0.28	-0.16	0.02	-0.45	0.06
07/01/81	49	0.73	1.13	0.20	-0.04	0.25	-0.08	-0.12	0.01	-0.29	0.06
10/01/81	42	0.82	1.01	-0.13	0.18	0.13	-0.03	-0.06	-0.17	-0.14	0.06
01/01/82	43	0.75	1.03	-0.14	0.28	0.22	-0.09	-0.23	-0.26	-0.26	-0.17
04/01/82	42	0.78	0.98	-0.22	0.38	0.09	-0.19	-0.24	-0.30	-0.14	-0.10
07/01/82	43	0.72	0.97	-0.28	0.40	0.08	-0.18	-0.23	-0.27	-0.13	-0.02
10/01/82	51	0.78	1.07	0.08	-0.01	0.44	-0.35	-0.30	-0.04	-0.50	0.07
01/01/83	51	0.81	1.12	0.28	0.09	0.43	-0.36	-0.27	0.14	-0.50	0.13
04/01/83	47	0.83	1.12	0.30	0.23	0.29	-0.29	-0.07	0.09	-0.41	0.13
07/01/83	52	0.81	1.18	0.47	0.08	0.52	-0.28	-0.27	0.24	-0.56	0.28
10/01/83	42	0.88	1.13	0.25	0.09	0.39	-0.25	-0.28	0.12	-0.47	0.07
01/01/84	36	0.93	1.13	0.36	0.40	-0.10	-0.37	0.38	-0.09	-0.36	0.08
04/01/84	38	0.86	1.04	0.08	0.30	-0.11	-0.08	0.18	0.15	-0.14	-0.03
07/01/84	43	0.81	0.98	-0.07	0.07	-0.22	-0.16	-0.01	0.12	0.11	-0.07
10/01/84	44	0.76	0.98	-0.10	0.08	-0.13	0.08	-0.03	0.13	0.12	-0.16
01/01/85	44	0.75	0.99	-0.02	0.09	-0.09	0.05	0.00	0.08	0.13	-0.06
04/01/85	42	0.78	1.03	0.11	0.20	-0.17	0.01	0.12	-0.01	0.06	-0.09
07/01/85	50	0.72	1.07	0.22	0.17	-0.22	0.01	0.20	0.00	-0.09	-0.09
10/01/85	47	0.76	1.11	0.26	0.17	-0.25	-0.07	0.31	-0.05	-0.25	-0.01
01/01/86	48	0.80	1.13	0.40	0.13	-0.31	-0.27	0.41	-0.02	-0.38	-0.02
04/01/86	42	0.83	1.14	0.44	0.12	-0.28	-0.25	0.39	-0.05	-0.37	-0.12
07/01/86	41	0.86	1.14	0.49	0.02	-0.35	-0.25	0.29	-0.05	-0.37	-0.15
10/01/86	45	0.85	1.14	0.55	0.04	-0.21	-0.44	0.30	-0.01	-0.36	-0.10
01/01/87	49	0.77	1.11	0.32	0.00	-0.25	-0.29	0.33	-0.01	-0.39	-0.10
04/01/87	49	0.82	1.14	0.45	0.02	-0.34	-0.10	0.37	-0.12	-0.52	-0.16
07/01/87	53	0.79	1.13	0.39	0.09	-0.29	-0.02	0.37	-0.17	-0.46	-0.11
10/01/87	39	0.88	1.11	0.32	0.10	-0.31	0.11	0.36	-0.18	-0.48	-0.17
01/01/88	42	0.85	1.11	0.27	0.08	-0.25	0.12	0.38	-0.22	-0.50	-0.09
04/01/88	50	0.78	1.09	0.21	0.27	-0.20	-0.04	0.33	-0.11	-0.43	0.07
07/01/88	47	0.82	1.13	0.40	0.27	-0.16	-0.16	0.38	-0.11	-0.50	-0.08
10/01/88	46	0.82	1.15	0.36	0.15	-0.15	-0.22	0.38	-0.08	-0.52	-0.09
01/01/89	47	0.81	1.14	0.27	0.21	-0.16	-0.16	0.35	0.02	-0.46	0.16
04/01/89	54	0.76	1.15	0.32	0.23	-0.17	-0.12	0.30	0.06	-0.38	0.10
07/01/89	53	0.76	1.13	0.33	0.26	-0.20	-0.13	0.34	0.03	-0.49	0.04
10/01/89	49	0.79	1.13	0.42	0.21	-0.17	-0.15	0.30	0.04	-0.50	0.16
01/01/90	43	0.82	1.09	0.26	0.19	-0.27	-0.06	0.32	-0.05	-0.49	0.05
04/01/90	41	0.88	1.10	0.26	0.20	-0.30	0.00	0.38	-0.07	-0.53	-0.02
07/01/90	44	0.83	1.13	0.35	0.12	-0.24	-0.04	0.38	-0.08	-0.50	-0.16
MEAN	46	0.80	1.10	0.25	-0.06	0.31	-0.10	-0.21	0.11	-0.01	-0.36
MIN	36	0.70	0.97	-0.28	-0.71	-0.03	-0.41	-0.42	-0.30	-0.17	-0.97
MAX	56	0.93	1.19	0.55	0.40	0.56	0.16	0.02	0.53	0.28	0.13
STD DEV	5	0.05	0.06	0.20	0.20	0.14	0.14	0.09	0.16	0.10	0.22
BNMK AVG	--	--	1.02	0.05	0.03	0.03	-0.16	0.04	0.01	-0.04	-0.02

EXHIBIT 2

SECTOR WEIGHTS

ACTUAL PORTFOLIO WEIGHT LESS BENCHMARK PORTFOLIO
July 1987 - September 1990

	CONS NON-DUR	CONS DURABLE	BASIC MATERIALS	CAPITAL GOODS	ENERGY	TECH.	TRANS.	UTIL.	FIN.
MINIMUM PORTFOLIO	-7.86	-2.59	5.25	-1.92	-1.41	-5.43	-2.87	-14.81	-13.21
PORTFOLIO AVERAGE	-1.61	0.70	11.23	5.62	1.35	-0.10	1.08	-10.84	-7.43
MAXIMUM PORTFOLIO	2.91	6.74	19.66	9.62	3.18	7.42	5.04	-6.19	1.72
BENCHMARK AVERAGE	29.54	4.17	11.09	6.04	7.72	9.55	2.79	15.55	13.54

SECTOR WEIGHTS

ACTUAL PORTFOLIO WEIGHT LESS S&P 500
January 1984 - September 1990

	CONS NON-DUR	CONS DURABLE	BASIC MATERIALS	CAPITAL GOODS	ENERGY	TECH.	TRANS.	UTIL.	FIN.
MINIMUM PORTFOLIO	-9.25	-3.19	-3.44	-5.54	-17.39	-7.99	-1.79	-12.50	-8.22
PORTFOLIO AVERAGE	-0.87	0.65	8.24	1.63	-5.97	-1.39	2.97	-5.38	0.11
MAXIMUM PORTFOLIO	5.82	7.65	20.04	7.17	-0.57	6.64	9.50	11.98	9.44
MARKET AVERAGE (S&P 500)	30.33	5.17	10.17	7.72	13.66	9.78	2.31	13.04	7.83

EXHIBIT 3

IDS EQUITY ADVISORS

Comparison of Actual Portfolio Performance with Customized Benchmark and Wilshire 5000

(all figures are percentages)

QUARTER		T-BILLS	EQUITY-ONLY ACTUAL	EQUITY-ONLY BENCHMARK	TOTAL PORTFOLIO ACTUAL	TOTAL PORTFOLIO BENCHMARK	WILSHIRE 5000
1984	1Q	2.4	-8.3	-4.2	-7.1	-4.0	-4.2
	2Q	2.6	-0.2	-2.8	0.3	-2.6	-2.8
	3Q	2.7	10.9	9.2	10.2	9.0	9.2
	4Q	2.3	3.3	1.3	3.0	1.4	1.3
		10.4	4.8	3.0	5.8	3.3	3.1
1985	1Q	2.1	9.4	10.3	8.5	10.1	10.3
	2Q	1.9	10.6	7.5	10.1	7.3	7.5
	3Q	1.9	-5.9	-4.3	-5.9	-4.1	-4.3
	4Q	1.8	20.4	16.8	19.7	16.2	16.8
		7.9	37.0	32.5	34.6	31.7	32.6
1986	1Q	1.8	18.0	14.4	17.2	13.9	14.4
	2Q	1.6	8.1	5.8	7.5	5.7	5.8
	3Q	1.4	-10.6	-7.7	-10.1	-7.4	-7.7
	4Q	1.3	4.8	4.0	4.5	3.9	4.0
		6.3	19.5	16.2	18.3	15.8	16.1
1987	1Q	1.4	23.1	21.2	22.4	20.5	21.2
	2Q	1.4	3.9	3.4	3.7	3.2	3.4
	3Q	1.5	6.0	5.6	5.9	5.2	6.2
	4Q	1.5	-22.8	-21.8	-20.7	-19.5	-23.1
		5.9	4.7	3.5	6.7	5.4	2.3
1988	1Q	1.4	0.6	8.2	0.6	7.5	8.0
	2Q	1.5	7.3	5.7	7.1	5.3	6.5
	3Q	1.7	-3.7	0.1	-3.7	0.3	0.2
	4Q	1.9	1.7	2.3	1.6	2.3	2.3
		6.8	5.7	17.1	5.3	16.2	17.9
1989	1Q	2.1	8.4	7.1	8.2	6.6	7.4
	2Q	2.2	7.7	9.3	7.5	8.6	8.6
	3Q	2.0	16.2	9.6	15.8	8.8	10.1
	4Q	2.0	-0.4	-0.6	-0.5	-0.3	0.6
		8.6	35.1	27.5	33.9	25.5	29.2
1990	1Q	2.0	-0.0	-3.2	0.3	-2.7	-3.5
	2Q	2.0	8.0	5.8	7.6	5.5	5.6
	3Q	1.9	-19.6	-16.4	-19.4	-14.7	-15.2
	4Q	1.8	4.9	8.6	4.7	7.9	8.7
CUMULATIVE		67.9	133.6	127.8	131.1	128.6	131.9

EXHIBIT 4

IDS EQUITY ADVISORS
PERFORMANCE ATTRIBUTION

JULY 1989 - DECEMBER 1990

	MARKET TIMING	SECTOR ALLOCATION	STOCK SELECTION	RESIDUAL	TOTAL
7/1/89 - 12/31/89	0.30	1.97	4.26	-0.07	6.56
1/1/90 - 12/31/90	-0.76	-0.03	-1.59	-0.84	-3.19
CUMULATIVE	-0.46%	1.94%	2.60%	-0.91	3.16%

EXHIBIT 5

IDS EQUITY ADVISORS
PERFORMANCE ATTRIBUTION ANALYSIS
SECTOR ALLOCATION

JULY 1989 - DECEMBER 1990

SECTOR	1989	1990	CUMM.
CONSUMER CYCLICAL	0.15%	-0.05%	0.10%
CONSUMER STABLE	0.20	-0.39	-0.19
ENERGY	0.17	0.10	0.27
FINANCIAL	-0.26	0.43	0.17
INDUSTRIAL BASIC	0.40	0.35	0.75
INDUSTRIAL INTER. CYCLICAL	0.45	0.07	0.52
TECHNOLOGY	-0.02	0.06	0.04
INDUSTRIAL INTER. GROWTH	0.80	-0.70	0.09
UTILITIES	0.05	0.15	0.20

EXHIBIT 6

IDS EQUITY ADVISORS
PERFORMANCE ATTRIBUTION ANALYSIS
STOCK SELECTION

JULY 1989 - DECEMBER 1990

SECTOR	1989	1990	CUMM.
CONSUMER CYCLICAL	1.99%	0.11%	2.10%
CONSUMER STABLE	1.41	-0.62	0.78
ENERGY	1.53	1.13	2.68
FINANICAL	-0.58	-0.56	-1.14
INDUSTRIAL BASIC	0.16	-0.38	-0.22
INDUSTRIAL INTER. CYCLICAL	-0.58	0.63	0.05
TECHNOLOGY	0.80	0.19	0.99
INDUSTRIAL INTER. GROWTH	-1.11	-0.02	-1.13
UTILITIES	0.65	-2.15	-1.51

EXHIBIT 7

IDS EQUITY ADVISORS
QUARTERLY SECTOR WEIGHTS

	CON NDUR	CONS DUR	BA MAT	CAP GOOD	ENERGY	TECH	TRANS	UTIL	FIN
8001	15.20	0.00	7.70	12.15	29.96	11.25	7.69	9.26	6.78
8004	18.00	0.00	8.23	11.86	32.91	10.79	4.69	5.69	7.83
8007	23.24	0.80	5.92	7.48	25.79	10.57	3.15	7.33	15.72
8010	23.34	2.01	6.94	10.09	29.68	13.96	4.08	0.00	9.90
8101	21.08	1.90	9.20	6.05	33.29	13.45	5.33	1.94	7.76
8104	25.54	3.45	14.41	2.16	17.92	16.81	8.59	1.73	9.39
8107	27.03	6.02	17.76	3.13	15.15	12.49	4.30	2.33	11.78
8110	31.96	3.03	7.72	1.85	12.96	8.98	4.21	15.07	14.22
8201	27.49	4.57	9.49	5.87	15.09	15.37	2.59	8.21	11.32
8204	39.64	3.21	2.69	6.97	7.05	11.36	2.83	12.71	13.54
8207	41.70	4.22	2.47	5.95	10.39	11.65	3.75	13.39	6.48
8210	50.69	4.77	2.51	5.82	6.55	14.94	3.10	4.20	7.41
8301	40.18	5.62	6.06	8.47	6.33	16.64	1.47	6.76	8.48
8304	26.60	6.53	8.42	16.51	8.27	16.63	2.03	6.66	8.35
8307	30.29	11.57	11.36	9.28	7.66	15.96	4.53	1.88	7.46
8310	29.50	7.41	15.86	10.13	7.89	21.62	3.39	1.89	2.33
8401	24.71	13.70	13.53	6.60	0.00	16.28	6.63	12.59	5.96
8404	19.59	9.14	9.63	5.41	7.66	13.45	9.21	18.23	7.69
8407	29.96	7.23	7.52	6.86	5.51	12.12	3.52	23.12	4.17
8410	24.33	10.81	6.89	8.25	6.95	13.65	3.92	19.41	5.79
8501	27.85	6.40	6.24	6.65	3.79	11.98	5.82	25.03	6.24
8504	28.81	5.21	7.42	7.39	10.64	5.82	6.09	17.60	11.01
8507	29.42	6.06	6.49	9.17	8.96	3.56	6.96	15.69	13.70
8510	27.79	5.19	9.61	8.88	6.51	6.66	11.22	10.29	13.86
8601	30.87	5.41	8.08	5.68	3.05	7.74	11.96	11.92	15.28
8604	31.74	5.78	12.93	2.47	1.12	6.25	10.76	10.76	18.17
8607	38.28	6.41	14.60	2.76	2.08	3.24	4.95	10.84	16.84
8610	34.65	9.38	15.10	4.14	4.78	1.78	5.00	14.63	10.53
8701	33.22	7.88	14.94	5.60	5.41	1.66	7.16	13.13	11.00
8704	32.55	10.10	19.24	5.29	9.39	10.38	5.25	1.88	5.93
8707	33.04	11.01	18.32	4.46	9.85	13.65	7.20	2.04	0.42
8710	27.17	9.57	22.95	5.78	8.40	16.83	4.33	4.49	0.48
8801	31.31	3.99	23.45	7.14	8.71	13.69	4.08	4.76	2.87
8804	31.26	5.89	20.12	11.82	10.63	6.99	7.56	3.81	1.92
8807	28.14	6.48	24.72	12.04	10.21	9.60	6.14	2.49	0.20
8810	29.52	4.56	26.65	14.70	6.50	11.36	6.01	0.49	0.21
8901	26.44	4.22	30.73	12.83	7.27	9.23	5.00	2.64	1.64
8904	22.89	2.47	29.51	13.35	8.26	7.54	3.84	2.07	10.06
8907	25.86	1.78	24.87	12.58	9.50	5.29	4.79	5.74	9.60
8910	24.75	2.63	24.15	12.90	7.53	7.26	4.81	7.06	8.91
9001	26.52	3.73	18.26	14.03	8.89	7.70	0.57	9.73	10.57
9004	26.77	2.63	16.14	14.86	11.91	10.39	0.00	7.54	9.78
9007	28.85	3.64	16.66	14.59	9.95	7.73	0.00	6.93	11.64
9010	32.05	5.11	18.29	14.13	10.15	4.55	0.21	3.62	11.90
AVG	29.09	5.49	13.72	8.50	10.69	10.66	4.97	8.35	8.52
MIN	15.20	0.00	2.47	1.85	0.00	1.66	0.00	0.00	0.20
MAX	50.69	13.70	30.73	16.51	33.29	21.62	11.96	25.03	18.17
STD DEV	6.32	3.10	7.43	3.93	7.86	4.49	2.73	6.20	4.59
BNMK AVG (7/87-9/90)	29.54	4.17	11.09	6.04	7.72	9.55	2.79	15.55	13.54
S&P 500									
AVERAGE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

EXHIBIT 8

IDS EQUITY ADVISORS
BENCHMARK COMPARISONS

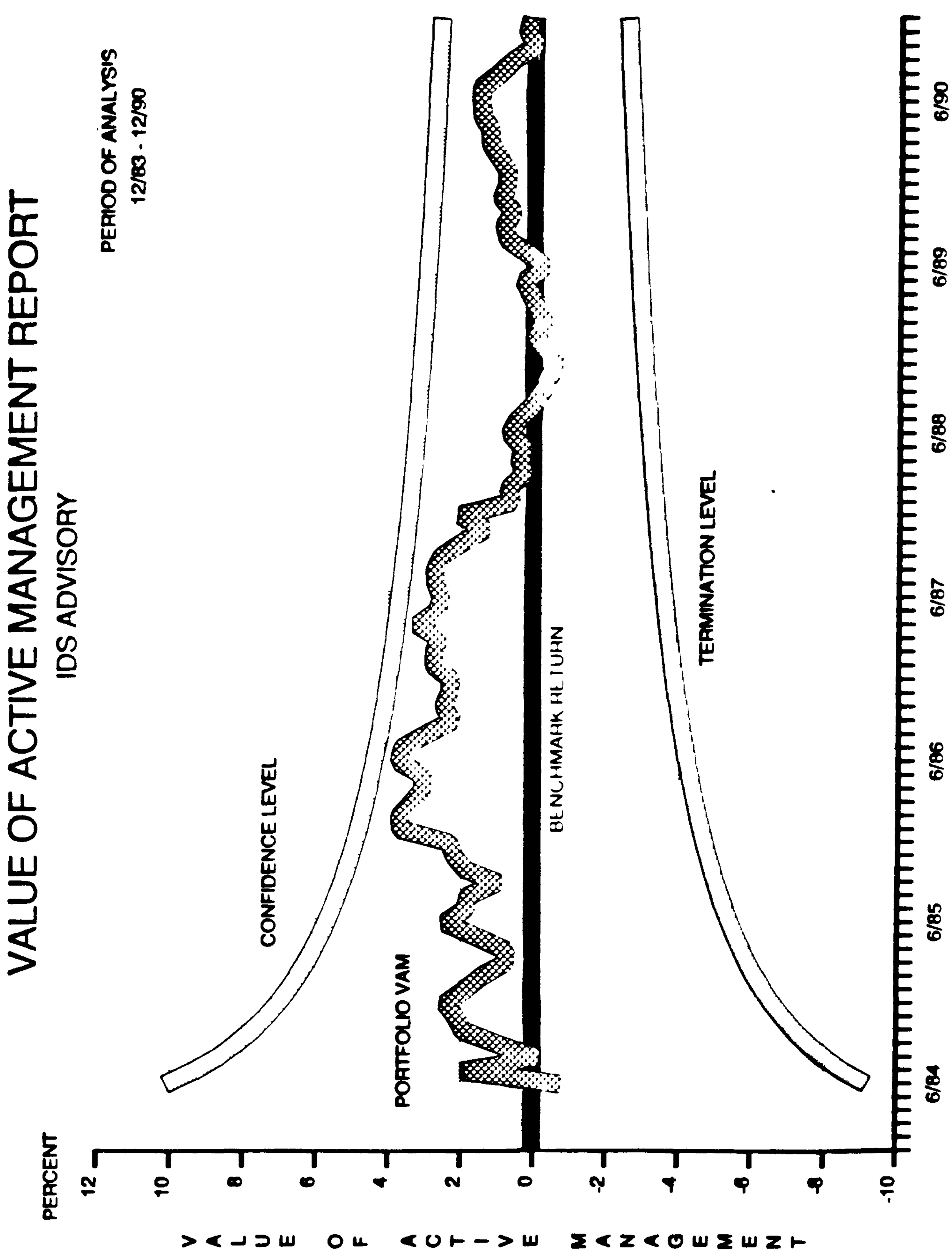
RISK EXPOSURES

BENCHMARK	EQ BETA	MARK VAR	SIZE	GROWTH	E/P	B/P	EARN VAR	FIN RISK	YIELD
8707	1.02	0.04	-0.23	0.06	0.03	0.01	0.04	0.04	-0.02
8801	1.00	0.03	-0.11	0.04	0.02	-0.01	0.02	0.01	-0.04
8807	1.00	0.01	-0.15	0.02	0.03	0.02	0.02	0.01	-0.02
8901	1.01	0.02	-0.14	0.02	0.00	0.04	0.01	0.00	-0.03
8907	1.02	0.08	-0.24	0.06	0.01	0.05	0.03	-0.05	-0.06
8910	1.02	0.06	-0.26	0.05	0.01	0.07	0.04	-0.06	-0.04
9001	1.02	0.06	-0.26	0.04	0.03	0.07	0.05	-0.06	-0.01
9004	1.04	0.06	0.01	0.07	-0.03	-0.01	0.01	-0.02	-0.07
9007	1.03	0.07	-0.01	0.04	-0.01	0.01	0.02	-0.02	-0.03
PREVIOUS BNMK AVG	1.01	0.04	-0.20	0.04	0.02	0.04	0.03	-0.01	-0.03
CURRENT BNMK AVG	1.03	0.06	0.00	0.06	-0.02	0.00	0.01	-0.02	-0.05
IDS HISTORICAL AVG	1.10	0.25	-0.06	0.31	-0.10	-0.21	0.11	-0.01	-0.36

SECTOR EXPOSURES

BENCHMARK	CONS NDUR	CONS DUR	BASIC MAT	CAPITAL	ENERGY	TECH	TRANS	UTILI	FIN
8707	30.14	4.27	11.13	6.38	6.70	9.41	3.27	15.08	13.63
8801	29.34	4.13	12.13	7.00	7.94	10.30	2.53	14.80	11.83
8807	28.83	3.45	12.79	6.94	7.90	9.32	2.66	15.30	12.81
8901	30.76	3.63	11.08	6.45	6.59	8.26	3.09	16.26	13.89
8907	28.44	4.37	10.53	6.26	6.31	8.84	2.96	16.51	15.80
8910	27.60	4.07	10.59	5.45	6.43	10.17	2.71	16.27	16.71
9001	27.16	4.09	10.02	5.29	6.86	9.52	2.35	18.20	16.50
9004	31.29	4.76	10.88	5.24	10.56	10.13	2.87	13.73	10.55
9007	32.26	4.81	10.68	5.35	10.22	9.98	2.71	13.80	10.18
PREVIOUS BNMK AVG	28.89	4.00	11.18	6.25	6.96	9.40	2.80	16.06	14.45
CURRENT BNMK AVG	31.78	4.78	10.78	5.30	10.39	10.06	2.79	13.76	10.36
IDS HISTORICAL AVG	29.09	5.49	13.72	8.50	10.69	10.66	4.97	8.35	8.52

EXHIBIT 9


VALUE OF ACTIVE MANAGEMENT REPORT
IDS ADVISORY
PERIOD OF ANALYSIS
12/83 - 12/90
CONFIDENCE LEVEL
PORTFOLIO VAM
BENCHMARK RETURN
TERMINATION LEVEL
PERCENT
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
6/84
6/85
6/86
6/87
6/88
6/89
6/90
VALUE OF ACTIVE MANAGEMENT

EQUITY MANAGERS

Fourth 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 standards 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 annual contracts for Concord, Franklin, GeoCapital, Rosenberg and Sasco.

Current Managers	Total Market Value 12/31/90 (Thousands)	Quarter Ending 12/31/90 Actual	Quarter Ending 12/31/90 Bmrk	Year Ending 12/31/90 Actual	Year Ending 12/31/90 Bmrk	Annualized Five Years Ending 12/31/90 Actual	Annualized Five Years Ending 12/31/90 Bmrk	Percent of Stock Segment 12/31/90 Basic Funds
Alliance	$ 410,326	9.7%	10.3%	-1.9%	-3.2	15.9%	8.7%	9.9%
Concord	98,350	5.1	9.8	-12.0	-9.7			2.4
Forstmann	190,810	2.2	8.0	-6.1	-4.5	9.8	8.8	4.6
Franklin	127,901	11.7	9.8	-10.1	-8.5			3.1
GeoCapital	90,796	25.8	10.8					2.2
IDS	164,052	4.7	7.9	-9.0	-5.5	10.1	10.9	4.0
IAI	89,678	5.8	8.1	-6.9	-2.9	9.8	11.8	2.1
Lieber & Co.	126,552	11.8	7.1	-11.6	-16.6	6.7	4.7	3.0
Rosenberg	270,497	8.0	8.7	-9.2	-7.5			6.5
Sasco	98,279	-0.9	3.3	-23.3	-12.5			2.4
Waddell & Reed	165,771	3.3	6.9	-7.8	-8.5	9.7	8.1	4.0
Wilshire Assoc.*	2,315,277	8.4	8.7	-6.5	-6.0	10.9	11.1	55.8
Aggregate **		7.9	8.6	-7.0	-6.6	10.8	10.5	100.0
Wilshire 5000		8.7%		-6.2%		11.2%		

* Passive Manager/Custom Tilt Index only
** Historical performance reflects composite of current managers only.

Notes: GeoCapital retained 4/90. Concord, Franklin, Rosenberg, Sasco retained 4/89.
Wilshire Assoc. began custom tilt phase-in in October 1990.

ALLIANCE CAPITAL MANAGEMENT

PORTFOLIO MANAGER: Jack Koltes **ASSETS UNDER MANAGEMENT: $410,325,588**

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.

QUALITATIVE EVALUATION (Reported By Exception)

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.

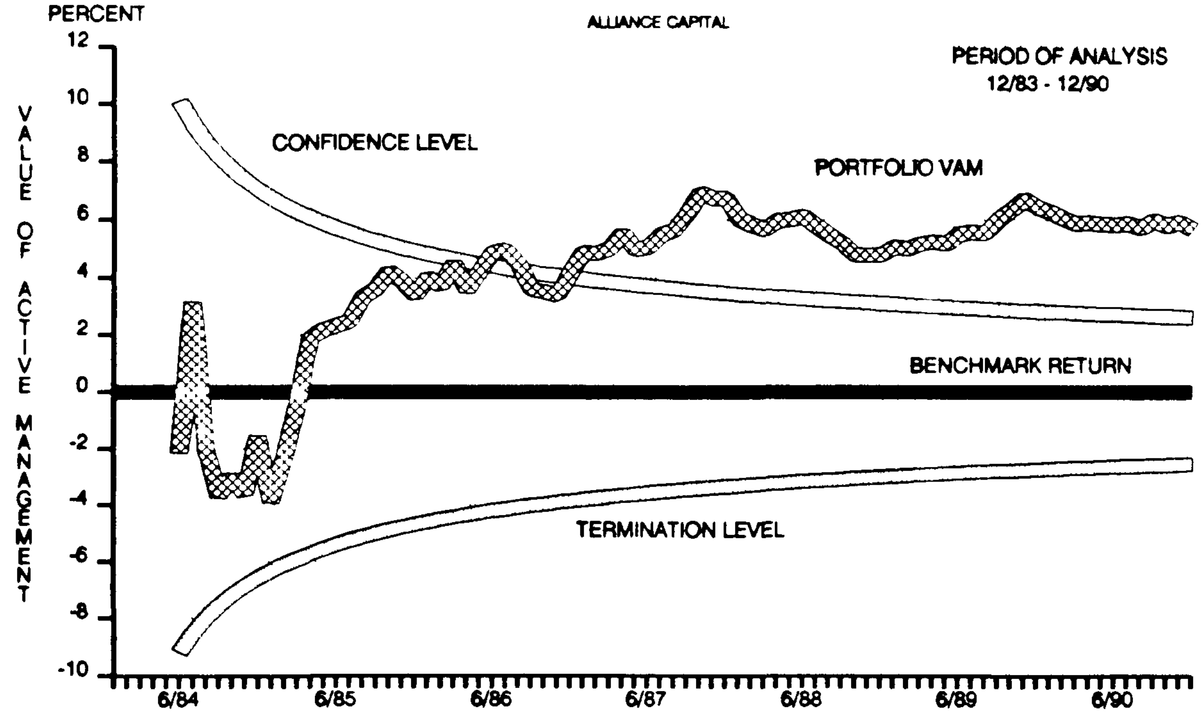
QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	9.7%	-1.9%	15.9%	16.7%
Benchmark	10.3	-3.2	8.7	10.4

STAFF RECOMMENDATIONS

No action required.

VALUE OF ACTIVE MANAGEMENT REPORT



Performance Report **Fourth Quarter 1990**

CONCORD CAPITAL MANAGEMENT

PORTFOLIO MANAGER: Bob Boldt **ASSETS UNDER MANAGEMENT: $98,350,062**

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)

Exceptional strengths are:

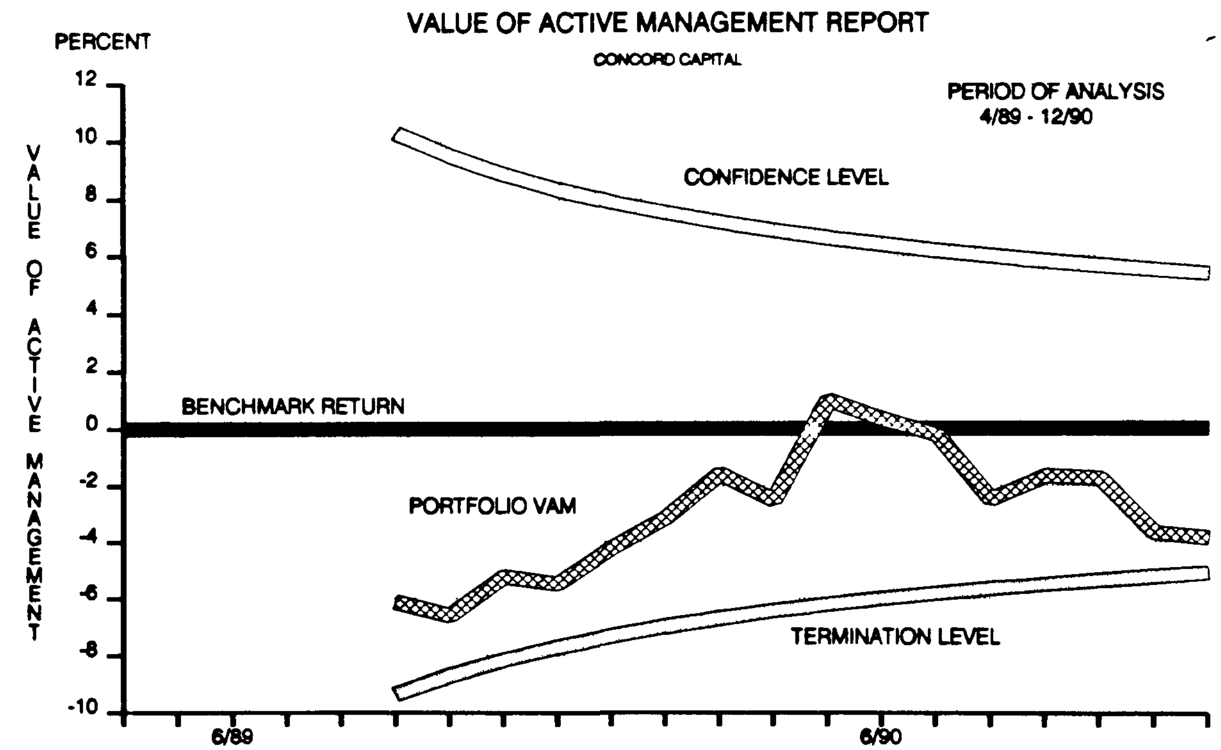
- Highly successful and experienced professionals.
- Investment style consistently and successfully applied over a variety of market environments.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 4/1/89
Actual Return	5.1%	-12.0%	N.A.	-1.0%
Benchmark	9.8	-9.7	N.A.	3.0

STAFF RECOMMENDATIONS

Renew annual contract for period beginning 4/1/91.



FORSTMANN LEFF ASSOCIATES

PORTFOLIO MANAGER: Joel Leff **ASSETS UNDER MANAGEMENT: $190,809,739**

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.

QUALITATIVE EVALUATION
(Reported By Exception)

Current concerns are:

- Relatively high turnover among firm's professionals. This issue, while not serious, remains outstanding.

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.

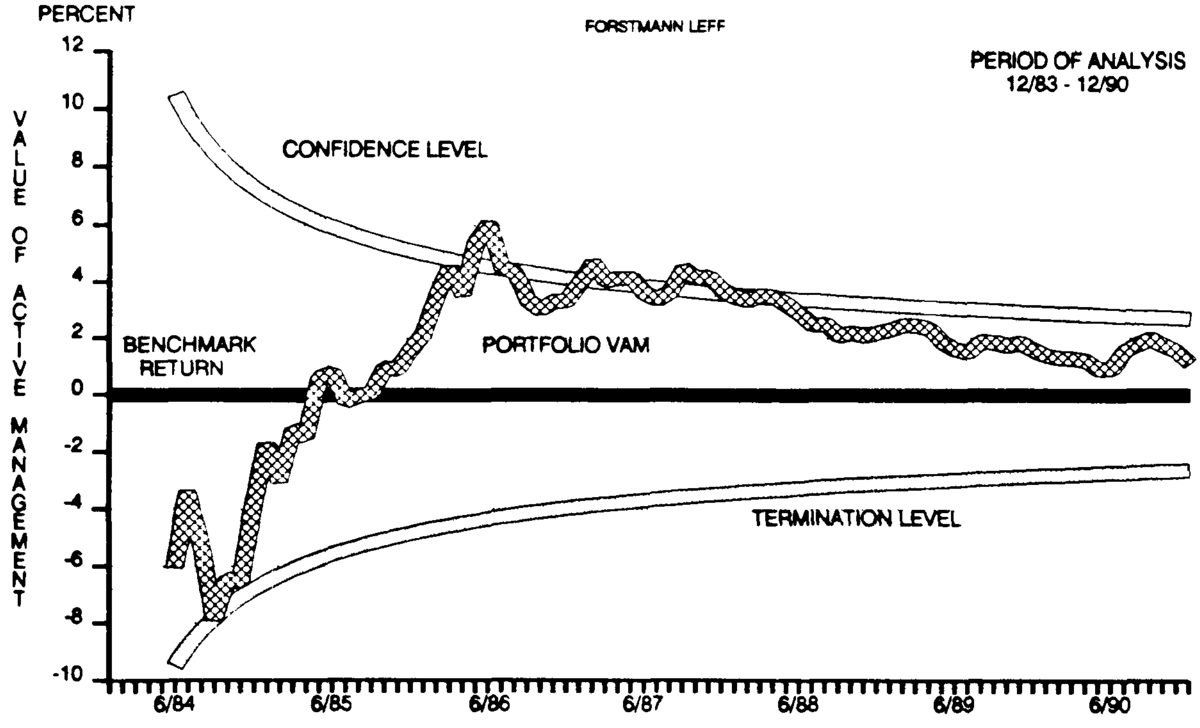
QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	2.2%	-6.1%	9.8%	11.4%
Benchmark	8.0	-4.5	8.8	10.2

STAFF RECOMMENDATIONS

No action required.

VALUE OF ACTIVE MANAGEMENT REPORT



FRANKLIN PORTFOLIO ASSOCIATES

PORTFOLIO MANAGER: John Nagorniak **ASSETS UNDER MANAGEMENT: $127,900,708**

INVESTMENT PHILOSOPHY

Franklin's investment decisions are quantitatively driven and controlled. The firm's stock selection model uses 30 valuation measures covering the following factors: 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. 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 remains fully invested at all times.

QUALITATIVE EVALUATION
(Reported by Exception)

Exceptional strengths are:

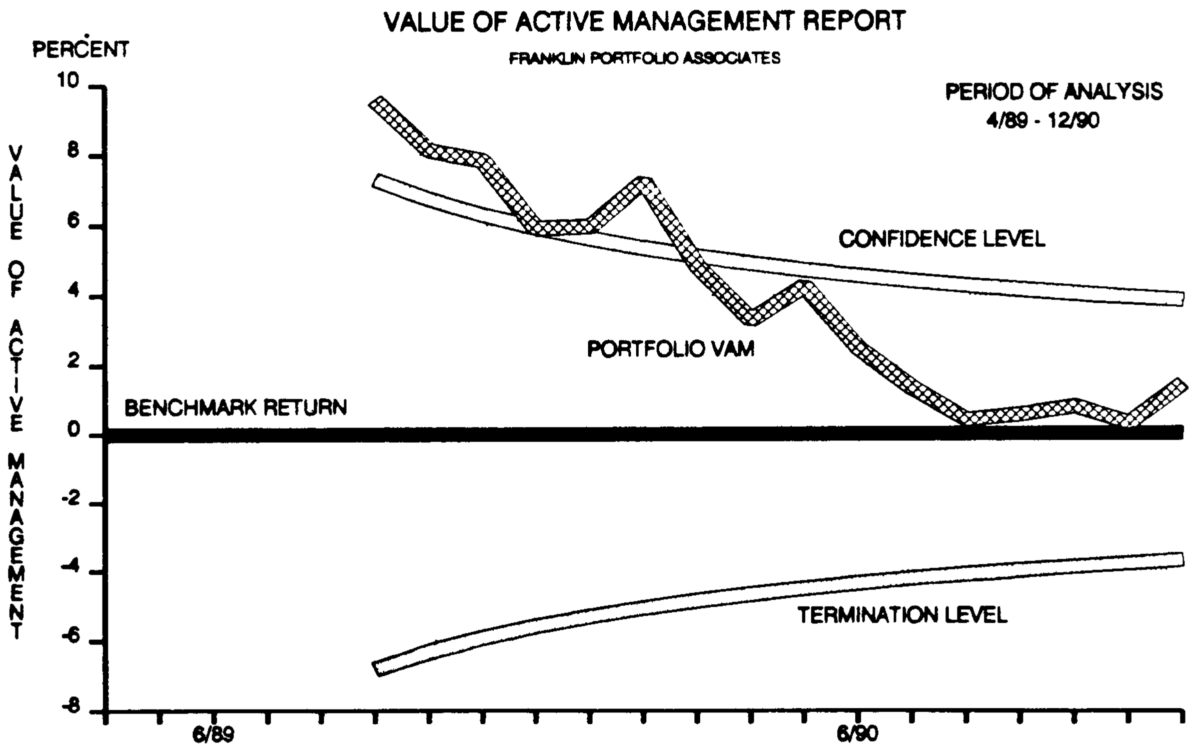
- Familiar with the needs of large institutional clients.
- Firm's investment approach has been consistently applied over a number of market cycles.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 4/1/89
Actual Return	11.7%	-10.1%	N.A.	3.9%
Benchmark	9.8	-8.5	N.A.	2.4

STAFF RECOMMENDATIONS

Renew annual contract for period beginning 4/1/91.



GEOCAPITAL CORP.

PORTFOLIO MANAGER: Barry Fingerhut **ASSETS UNDER MANAGEMENT: $90,796,482**

INVESTMENT PHILOSOPHY

GeoCapital invests primarily in small capitalization equities with the intent to hold them as they grow into medium and large capitalization companies. The firm uses a theme approach and an individual stock selection analysis to invest in the growth/technology and intrinsic value areas of the market. In the growth/technology area GeoCapital looks for companies that will have above average growth due to a good product development program and limited competition. In the intrinsic value area, the key factors in this analysis are the corporate assets, free cash flow, and a catalyst that will cause a positive change in the company. The firm generally stays fully invested, with any cash positions due to the lack of attractive investment opportunities.

QUALITATIVE EVALUATION
(Reported by Exception)

Exceptional strengths are:

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

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 4/1/90
Actual Return	25.8%	N.A.	N.A.	-6.8%
Benchmark	10.8	N.A.	N.A.	-8.7

STAFF RECOMMENDATIONS

Renew annual contract for period beginning 4/1/91.

(Vam graph will be provided for period ending 9/30/91.)

IDS ADVISORY

PORTFOLIO MANAGER: Mitzi Malevich **ASSETS UNDER MANAGEMENT: $164,051,571**

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.

QUALITATIVE EVALUATION
(Reported By Exception)

Current concerns are:

- Benchmark does not adequately reflect the growth bias that IDS incorporates into their investment process.

Exceptional strengths are:

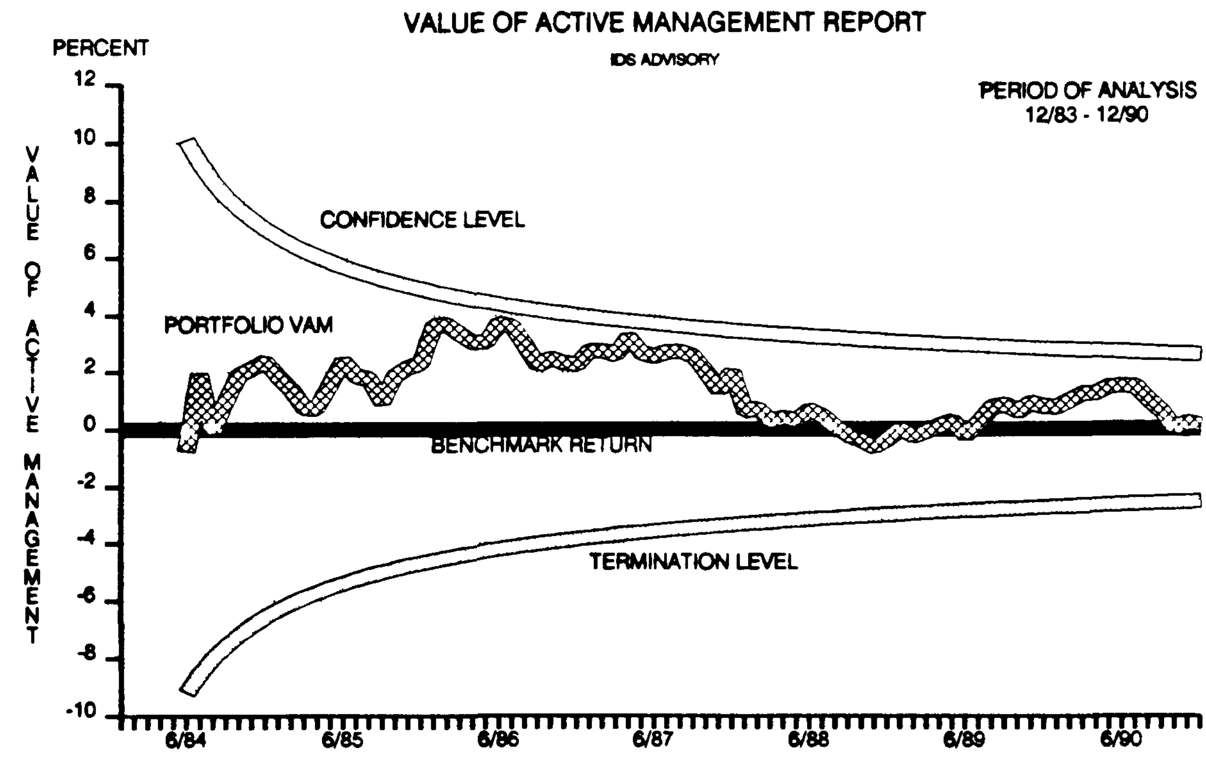
- Investment style consistently and successfully applied over a variety of market environments.

STAFF RECOMMENDATIONS

No action required.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	4.7%	-9.0%	10.1%	12.7%
Benchmark	7.9	-5.5	10.9	12.5



INVESTMENT ADVISERS

PORTFOLIO MANAGER: Charles Webster **ASSETS UNDER MANAGEMENT: $89,677,801**

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.

QUALITATIVE EVALUATION
(Reported By Exception)

Current concerns are:

- Growth plan not in place.
- Slow response to administrative information requests from SBI staff

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

Exceptional strengths are:

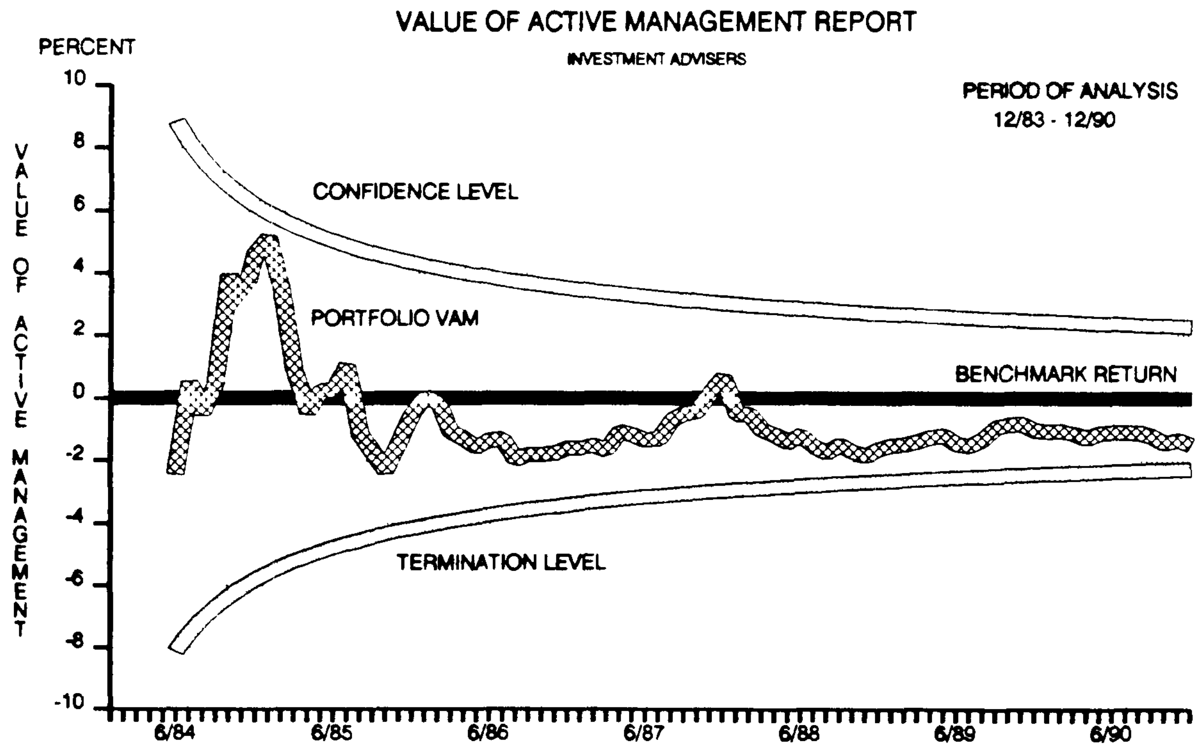
- Investment style consistently applied over a variety of market environments.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	5.8%	-6.9%	9.8%	11.5%
Benchmark	8.1	-2.9	11.8	13.2

STAFF RECOMMENDATIONS

No action required.



LIEBER & COMPANY

PORTFOLIO MANAGER: Stephen Lieber, Nola Falcone **ASSETS UNDER MANAGEMENT: $126,552,224**

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 firm focuses on macroeconomic trends and specific product developments within particular industries or companies. Stock selection concentrates on well-managed, small-to-medium sized companies with high growth and high return on equity. Particularly attractive to Lieber are takeover candidates or successful turn around situations. The firm generally is fully invested, with any cash positions the result of a lack of attractive investment concepts.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	11.8%	-11.6%	6.7%	9.2%
Benchmark	7.1	-16.6	4.7	7.1

QUALITATIVE EVALUATION
(Reported by Exception)

Current concerns are:

- Firm is unfamiliar with needs of large clients.

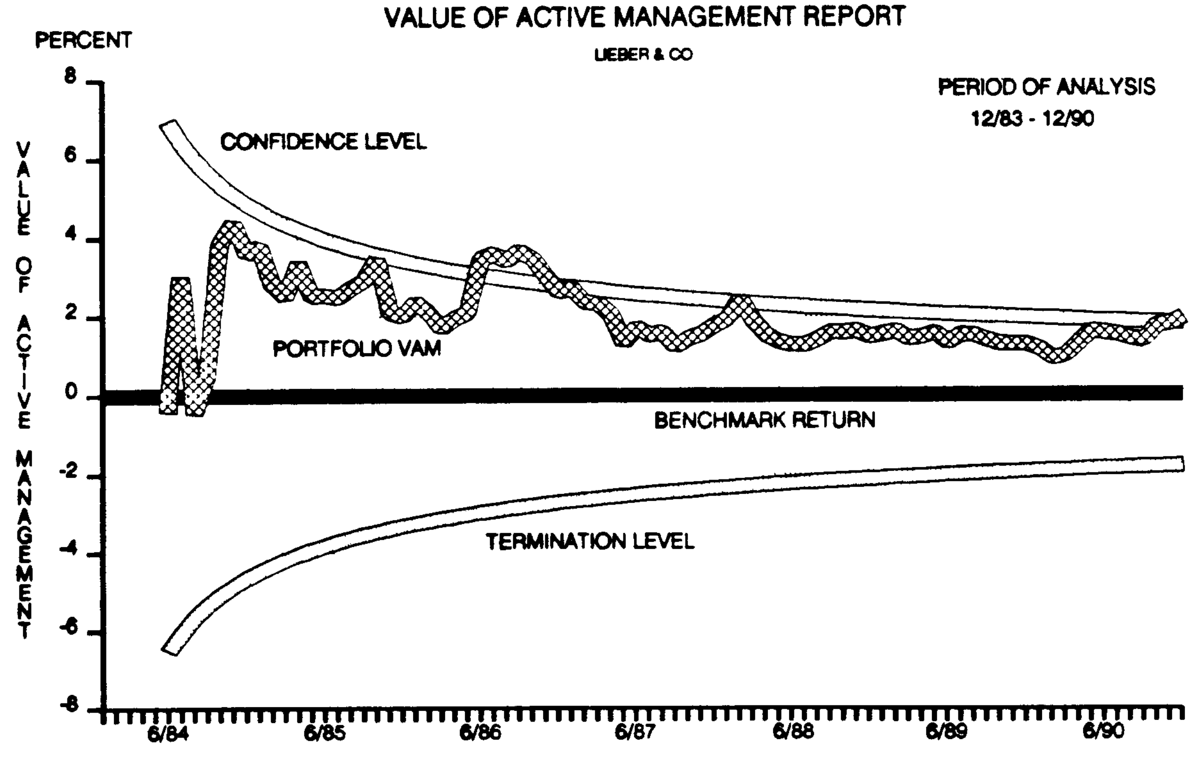
This item, while not serious, warrants additional monitoring.

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.

STAFF RECOMMENDATIONS

No action required.



Performance Report **Fourth Quarter 1990**

ROSENBERG INSTITUTIONAL EQUITY MANAGEMENT

PORTFOLIO MANAGER: Ken Reid **ASSETS UNDER MANAGEMENT: $270,497,063**

INVESTMENT PHILOSOPHY

Rosenberg uses quantitative techniques to identify stocks that are undervalued relative to other similar companies. The firm's computerized valuation system analyzes accounting data on over 3,500 companies. Each company's separate business segments are compared to similar business operations of other companies. These separate valuations are then integrated into a single valuation for the total company. Stocks with valuations that are significantly below their current market price are candidates for purchase. The firm remains fully invested at all times.

QUALITATIVE EVALUATION
(Reported by Exception)

Exceptional strengths are:

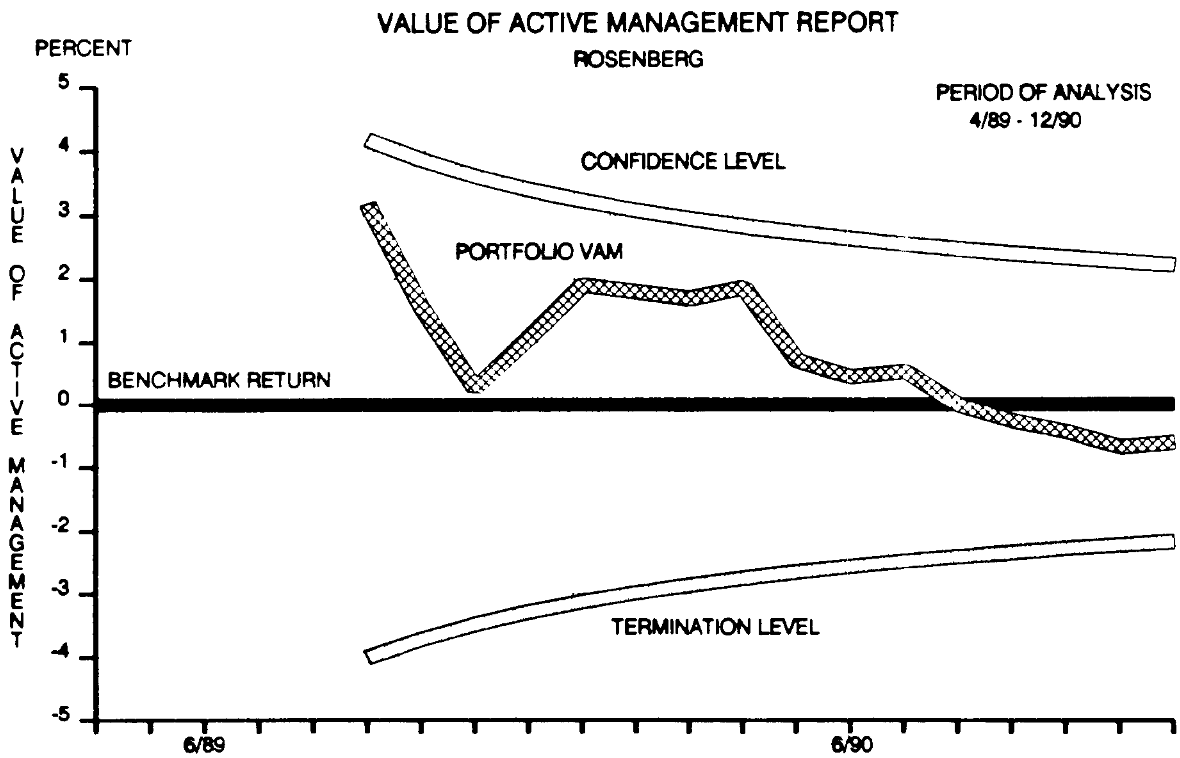
- Attractive, unique investment approach.
- Highly successful and strong leadership.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 4/1/89
Actual Return	8.0%	-9.2%	N.A.	4.8%
Benchmark	8.7	-7.5	N.A.	5.5

STAFF RECOMMENDATIONS

Renew annual contract for period beginning 4/1/91.



SASCO CAPITAL INC.

PORTFOLIO MANAGER: Bruce Bottomley **ASSETS UNDER MANAGEMENT: $98,278,925**

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)

Exceptional strengths are:

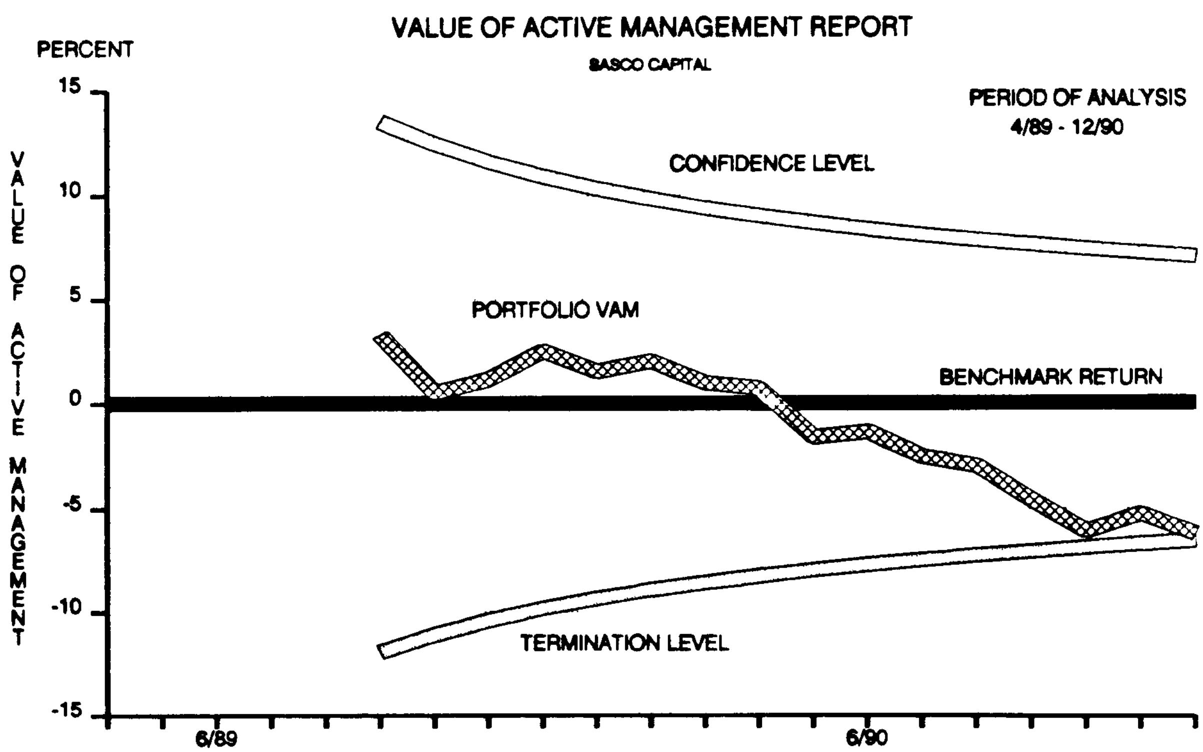
- Investment style consistently and successfully applied over a variety of market environments.
- Attractive, unique investment approach.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 4/1/89
Actual Return	-0.9%	-23.3%	N.A.	-6.9%
Benchmark	3.3	-12.5	N.A.	-0.7

STAFF RECOMMENDATIONS

Renew annual contract for period beginning 4/1/91.



WADDELL & REED

PORTFOLIO MANAGER: Henry Herrman **ASSETS UNDER MANAGEMENT: $165,771,146**

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)

Exceptional strengths are:

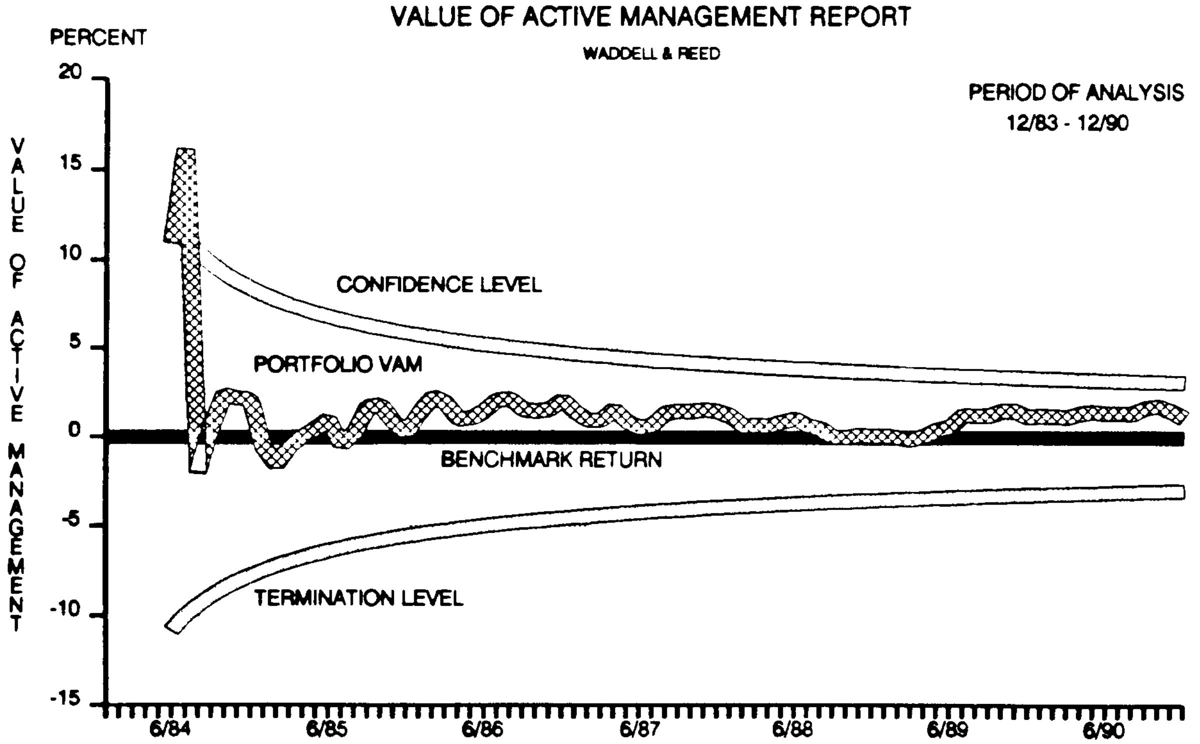
- Highly successful and experienced professionals.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	3.3%	-7.8%	9.7%	9.8%
Benchmark	6.9	-8.5	8.1	8.6

STAFF RECOMMENDATIONS

No action required.



POST FUND STOCK SEGMENT

PORTFOLIO MANAGER: SBI Staff **ASSETS UNDER MANAGEMENT: $442,054,436**

INVESTMENT PHILOSOPHY

The Post Fund Stock Segment utilizes a disciplined portfolio management process which relies on quantitative measures of investment characteristics to screen for investment opportunities. Two distinct methodologies are employed to moderate portfolio return volatility and provide diversification. Both methodologies emphasize traditional value criteria. One methodology, Abel Noser, emphasizes low price/earnings and low price/book ratios. The other, R.F. Fargo, focuses on high relative yield. Historically, these value characteristics have provided superior relative returns in down and early cycle markets. The portfolio maintains a fully invested position at all times.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 7/1/87
Actual Return	9.5%	-13.7%	6.1%	1.8%
Benchmark	9.4	-11.5	N.A.	2.2

QUALITATIVE EVALUATION
(Reported By Exception)

Current concerns are:

- The fund is using a relatively new benchmark.

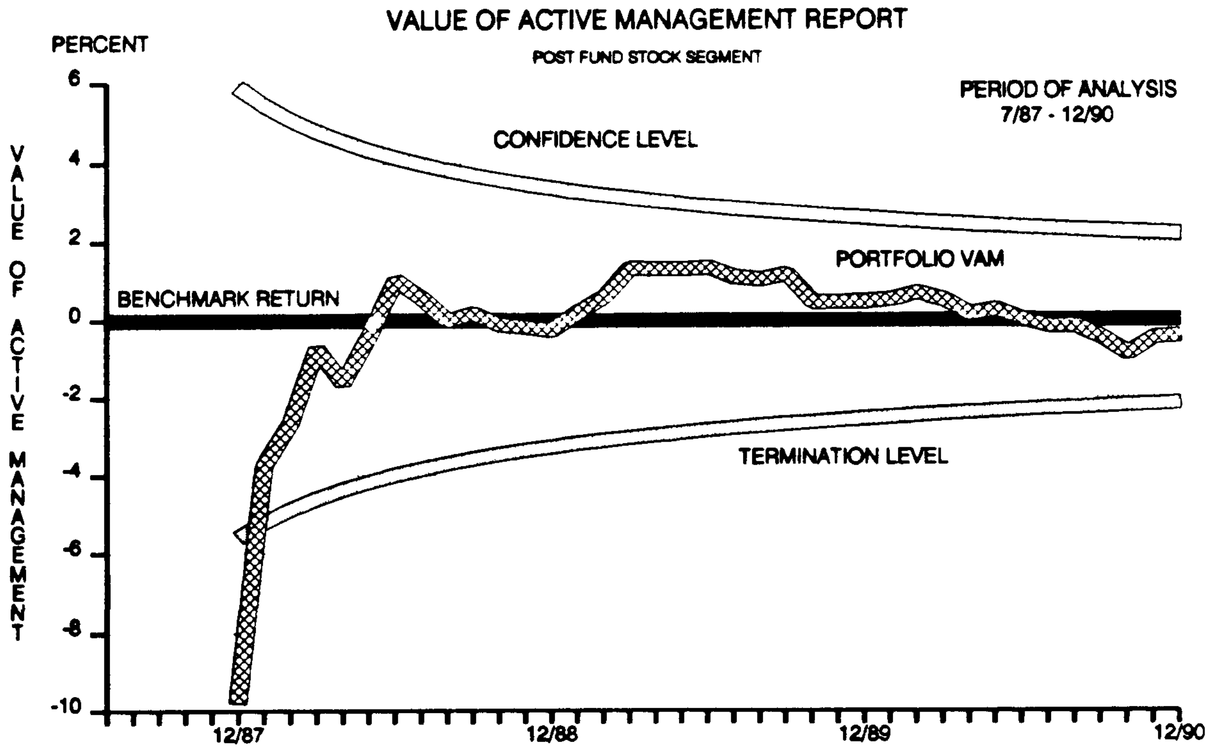
This item, while not serious, should continue to be monitored.

Exceptional strengths are:

- The investment methodologies used in the portfolio have been applied successfully over various market environments.

STAFF RECOMMENDATIONS

No action required.



Tab F

COMMITTEE REPORT

DATE: March 4, 1991

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

FROM: Fixed Income Manager Committee

The IAC Fixed Income Manager Committee met on February 28, 1991 with the following agenda:

- o In-depth Review of Investment Advisers
- o Review of Manager Performance
- o Renewal of BEA Contract
- o Proposal to Restructure the Bond Program in the Basic Funds

INFORMATION ITEM:

1) In-Depth Review of IAI

Staff conducted an in-depth review of IAI as part of the regular 3-year review cycle. A copy of the review is attached. The Committee concurred with staff's conclusion that IAI should be retained as a manager until the fixed income segment of the Basic Funds is restructured. When this occurs, staff will determine if IAI's management style is compatible with the new structure.

The review showed that:

- o IAI's style features duration shifts in an attempt to anticipate interest rate direction.
- o IAI uses the credit cycle to position the portfolio in terms of duration, quality and sectors. IAI develops portfolio strategy by anticipating economic changes due to credit flows and the Federal Reserve's response to these changes. Once the credit cycle stage is determined, IAI makes moderate duration and sector shifts. IAI has generally followed this investment philosophy.

- o IAI's benchmark is overweighted in governments and underweighted in corporates and mortgages with a duration longer than the market. Staff believes the benchmark is appropriate for the firm.
- o Since IAI was hired, they have outperformed their benchmark and matched market returns (IAI 13.5%, Benchmark 13.4%, Salomon BIG 13.5%). IAI did this by varying the duration from 3.2 to 7.0 years. The duration moves were sometimes correct and sometimes incorrect. That is why portfolio returns have not been much greater than benchmark returns.

ACTION ITEMS:

1) Review of Manager Performance

Manager performance during the quarter was favorable. Each active and semi-passive manager exceeded or equaled its benchmark for the quarter. Overall, the manager exceeded their aggregate benchmarks and the broad market for the period (Managers 5.4%, Aggregate Benchmarks 5.0%, Salomon BIG 5.1%). The current manager group trailed the aggregate benchmark and the market for the past year but outperformed both standards for the last five years.

The value of active management (VAM) reports for the active bond managers are at the end of this tab section. In aggregate, the active managers had a longer duration than the market over a period when interest rates fell. This accounted for the above market returns during the quarter.

Staff informed the Committee that Ed Robie, the SBI's portfolio manager at Western Asset Management, has left the firm. In accordance with the SBI's Manager Continuation Policy, staff recommended that Western be placed on probation until the impact of the personnel change can be determined.

RECOMMENDATION:

The Committee recommends that Western Asset Management be placed on probation due to the departure of the SBI's portfolio manager.

2) Renewal of BEA Contract

BEA has managed a cash enhancement portfolio for the Post Retirement Fund since April 1987. Its goal is to outperform short term cash returns through the use of low risk, fully hedged futures and options strategies. To date, BEA has provided a return of 10.02% annualized and has outperformed its benchmark by 1.82 percentage points annualized.

A review of BEA's investment approach and performance is in Attachment A.

BEA has suggested that it could provide additional returns through the use of currency hedging strategies. The firm uses currency hedges with a number of other clients at present. Staff has reviewed BEA's performance with this strategy and concluded that it is appropriate for the cash enhancement portfolio.

RECOMMENDATION:

The Committee recommends that the SBI authorize the executive director, with assistance from SBI's legal counsel, to negotiate and execute a contract extension with BEA Associates for a period of one year. Further, the Committee recommends that BEA be authorized to use currency hedges as one of its cash enhancement strategies.

3) Proposal to Restructure the Bond Segment of the Basic Funds

The Committee reviewed a proposal by staff to restructure the active manager program within the bond segment of the Basic Funds. Staff believes that the dual role of bonds as both deflation hedge and diversifier/ volatility dampener are better served by:

- o Changing the asset class target for the bond segment from the Salomon Broad Investment Grade Index to the Salomon Targeted Index Matrix, representing a 5 year constant option-adjusted duration.

- o Limiting the duration decisions of the active managers.

Staff's proposal for restructuring the Basic Funds' bond segment is provided in Attachment B.

RECOMMENDATION:

The Committee recommends the SBI adopt the proposed changes to the structure of the Basic Funds' bond segment.

ATTACHMENT A

ANNUAL REVIEW OF BEA ASSOCIATES CONTRACT

ANNUAL REVIEW OF BEA ASSOCIATES CONTRACT

I. Overview

In April 1987, BEA Associates was retained by the SBI to manage a cash enhancement program utilizing low risk index futures and options strategies. The purpose of the program is two-fold. The first objective is to improve the rate of return earned on cash equivalent investments in the Post Retirement as represented by the State Street Bank Short Term Investment Fund (STIF). Secondly, BEA provides the SBI with a window to the derivatives market.

II. Investment Approach

The cash enhancement strategies utilized by BEA all involve "hedged positions", the simultaneous purchase and sale of two different index futures and listed options contracts. The purchase/sale combinations are constructed to capture a perceived mispricing between the different contracts without incurring market risk. Although there is no market risk, there is the risk that mispricings do not realign as expected and that returns fall short of the STIF benchmark.

Mispricing opportunities are not always present and usually last only a period of weeks. Once the mispricings have been corrected by the market, BEA profits by closing out its futures and options positions thereby withdrawing from the financial futures market. When not committed to enhancement strategies, assets are invested in short term money market securities subject to the same guidelines as the State Street STIF.

The current strategies used by BEA and approved for use in the SBI account are:

- o Hedged Puts
- o Market Spreads
- o Box Spreads

<u>Hedged puts</u> involve the simultaneous purchase (sale) of listed index options offset by the sale (purchase) of index futures. The decision to purchase the listed option or future is determined by market volatility. If future volatility is likely to fall (rise), the value of the listed option will also fall (rise) relative to that of the future contract. In this case BEA would purchase (sell) the future and sell (purchase) the listed option in amounts necessary to eliminate or "hedge" market risk. The perceived mispricing results from the difference between BEA's estimate of future volatility and that which is implied in the current market price of the option. If BEA

is correct, the market's re-evaluation of volatility will result in a profit on the hedged position.

Market spreads capture mispricings between market indices of differing composition (intermarket spread) or with different time to expiration (calendar spread). Again, the strategy calls for the simultaneous purchase and sale of two similar index future or option contracts.

Box spreads are the simultaneous purchase and sale of multiple index options. The intent is to provide liquidity to options dealers for the period defined by the term of the options. By providing liquidity, BEA earns a rate above that available on alternative short-term money market instruments with equivalent terms.

The assets committed to the enhancement strategies described above are expected to generate returns 100-200 basis points above the STIF rate of return over a reasonably long period of time.

III. Performance

Table I shows BEA's quarterly, calendar year, and cumulative performance relative to its benchmark since inception. For the full period covering April 1, 1987 to December 31, 1990 BEA has outperformed its benchmark by 1.82% annualized. This result is well within the BEA's expected range of 100 to 200 basis points value-added.

Table II breaks the full period into two nonoverlapping sub-periods. The period covering April 1, 1987 to March 31, 1989 (A) represents the period prior to a change in BEA's assignment effective April 1, 1989. This change, described in the section titled "Summary of Board Actions to Date" below, suggests that these periods be analyzed separately. BEA outperformed its benchmark for the sub-period covering April 1, 1987 to March 31, 1989 by 0.58% annualized. BEA outperformed its benchmark for the sub-period covering April 1, 1989 to December 31, 1990 (B) by a much greater margin. On an annualized basis, performance during this latter sub-period exceeded the benchmark by 3.25%. The higher level of outperformance produced during the latter sub-period was accomplished with a higher level of active risk (standard deviation) than during the earlier sub-period (0.64% versus 2.17% respectively). The increase in active risk over the latter sub-period is the direct result of the assignment change imposed by the SBI.

Table II also provides the information ratio for each sub-period covered. The information ratio is the ratio of active return to active risk and measures the efficiency of the manager's value-added process. The information ratio for the latter sub-period compares favorably to that of the earlier sub-period (1.49 versus 0.91), an indication that the higher risk level in the latter sub-period was rewarded.

TABLE I

BEA Associates
Comparison of Actual Portfolio Performance with
State Street STIF Benchmark

		Market Value $(000)	Total Portfolio (ROR %)	Benchmark (ROR %)	Value of Active Mgmt (ROR %)
1987	2Q	101,358	1.37	1.60	
	3Q	103,525	2.14	1.65	
	4Q	105,867	2.26	1.77	
1987 (9 mos.)			5.87%	5.10%	0.73%
1988	1Q	108,161	2.17	1.73	
	2Q	109,828	1.54	1.72	
	3Q	112,179	2.14	1.90	
	4Q	114,633	2.19	2.05	
1988			8.28%	7.60%	0.63%
1989*	1Q	21,393	2.06	2.26	
	2Q	21,806	1.99	2.36	
	3Q	22,253	2.05	2.18	
	4Q	23,402	5.16	2.11	
1989			11.71%	9.21%	2.29%
1990	1Q	24,233	3.55	2.04	
	2Q	25,039	3.33	2.03	
	3Q	25,480	1.76	1.98	
	4Q	26,138	2.58	1.95	
1990			11.69%	8.25%	3.18%
Cumulative			43.04%	33.70%	
Annualized			10.02	8.05	1.82%
Std. Dev.			1.62	0.25	1.58
Info Ratio					1.15
T-Stat					2.20**

* Approximately $96 million was withdrawn from BEA's account effective 3/31/89.

** Significant at the 5% level.

ATTACHMENT A (con't)

TABLE II

BEA Associates
Comparison of Sub-Period Cumulative Performance

	Total Portfolio (ROR %)	Benchmark (ROR %)	Value of Active Mgmt (ROR %)
A. For period 4/1/87 thru 3/31/89 (24 months)			
Cumulative	17.00%	15.65%	
Annualized	8.17	7.54	0.58%
Std. Dev.	0.65	0.25	0.64
Info Ratio			0.91
T-Stat			1.29
B. For period 4/1/89 thru 12/31/90 (21 months)			
Cumulative	22.26%	15.61%	
Annualized	12.17	8.64	3.25%
Std. Dev.	2.16	0.15	2.17
Info Ratio			1.49
T-Stat			1.94

Finally, Table III shows the source of BEA's value-added since inception by attributing returns to the various strategies implemented. This performance attribution analysis is not available prior to April 1, 1989.

Table III

Sources of Return by Strategy
Cumulative Inception to Date
4/1/89 to 12/31/90

Hedged Puts	5.92%
Market Spreads	0.00
Box Spread + Cash Management	16.34
	22.26%

Table III shows that the majority of the absolute return has come from a combination of cash management and box spreads (16.34%). This compares favorably to the State Street STIF return of 15.61% over the same period. The majority of the manager's value-added during this period has come from the hedged put positions. During this period no market spread positions were established.

IV. Summary of Board Actions to Date

In April 1987, BEA Associates was retained by the SBI to manage a $100 million enhanced cash program in the Post Retirement Fund.

Effective April 1989, BEA's portfolio was reduced from $117 million to $21 million. Of the $117 million under management with BEA in April 1989, approximately $100 million was in short-term money market instruments. These securities provided both return stability and necessary collateral for BEA's index future positions. Because the $100 million represented a two percent (2%) additional cash position for the Post Fund, it was decided that BEA's funding would be reduced to lower the Post Fund's cash allocation. It was determined that at any given time BEA would only require $20 million for collateral purposes related to its cash enhancement strategies. The collateral was changed from cash positions held in BEA's account to pledges of bonds held at State Street Bank, the SBI's custodian bank.

V. Conclusions

Staff recommends that the BEA Associates' contract be renewed for one year.

Further, staff recommends that the contract guidelines be amended to allow BEA to use hedged positions linked to currency markets. This enhancement strategy is market neutral and similar to the hedged put strategies using stock index options and futures. To implement currency hedging strategies, BEA would engage in listed and/or over-the-counter currency transactions, including forward foreign exchange contracts and currency options and futures.

BEA has used currency hedges successfully with other clients and has provided additional returns to those portfolios. Staff believes that this strategy will provide an additional source of incremental return without altering the risk characteristics of the current program.

ATTACHMENT B

PROPOSAL FOR RESTRUCTURING THE BOND SEGMENT OF THE BASIC RETIREMENT FUNDS

The Basic Retirement Fund's investment policy statement specifies two roles for bonds within the total portfolio:

- o bonds act as a hedge against deflationary environments
- o bonds provide diversification benefits and dampen the volatility of total portfolio returns

With these purposes in mind, two critical questions should be addressed in order to design an investment management structure for the bond segment of the Basic Funds:

- o which is the most appropriate asset class target?
- o what is the most effective investment management structure (passive, semi-passive, active, or combination)?

ASSET CLASS TARGET

Currently, the Salomon Broad Investment Grade (BIG) Index is the asset class target for the bond segment of the Basic Funds. The BIG index is a capitalization-weighted index and is comprised of most of the publicly traded taxable investment grade bonds available. The BIG's broad exposure to market sectors and maturities is its primary appeal as an asset class target.

The main disadvantage of the BIG index is that its duration, a measure of average maturity, "floats" with changes in the maturity of new issuance and with the general level of interest rates. Duration is the primary measure of interest rate sensitivity and, consequently, is the single most important risk characteristic of a bond asset class target. By accepting the changing duration of the BIG index, the SBI allows the most critical risk characteristic of its asset class target to be determined by bond issuers and other investors. Over time, the risk composition of the BIG may deviate significantly from the SBI's stated goals for the bond segment of the Basic Funds.

This "slippage" problem could be minimized through a constant duration strategy. In contrast to floating duration, a constant duration target would direct the bond segment toward a consistent risk posture over time.

What duration target is appropriate for the Basic Funds? Staff believes the choice must reflect a balance between the dual role of bonds as deflation hedge and diversifier/volatility dampener:

- The deflation hedge role suggests a long duration target (7 to 10 years) is appropriate. The longer a portfolio's duration, the better it will perform when interest rates decline. In a deflationary environment with falling interest rates, a longer duration portfolio should perform well.

- A long duration portfolio works against the role of bonds as a diversifier and volatility dampener. The returns of longer duration portfolios are more volatile and are more highly correlated with common stock returns than shorter duration portfolios (1 to 3 years).

Given these conflicting goals, staff believes that an intermediate duration target of five (5) years is appropriate for the Basic Funds. A five year duration target is only slightly longer than the current BIG index duration of 4.6 years. Increasing the duration beyond 5 years, while providing greater deflation hedge potential, increases return volatility substantially. Further, studies of historical performance by staff have shown that the additional risk of longer duration portfolios have not been rewarded with higher returns. Historically, intermediate duration portfolios have provided the best trade-off between risk and return.

Staff recommends that the SBI use the Salomon Targeted Index Matrix (TIM) with a constant duration of 5 years as the Basic Funds' bond asset class target. The TIM index is published by Salomon Brothers and is publicly available. In addition, the TIM index provides the flexibility to choose the corporate/mortgage sector allocation that best meets the Basic Funds' objectives. Comparisons of the BIG and TIM indexes are shown below:

Comparison of Target Benchmarks

	SALOMON TIM 1/1/91	SALOMON BIG 1/1/91
Duration	5.00 years	4.61 years
Duration Strategy	Constant	Floating
Coupon	9.08%	8.93%
Current YTM	8.64%	8.53%
Average Maturity	10.16 years	9.49 years
Sector Composition		
- Corporates	19%	18%
- Mortgages	31%	28%
- Treasury/Agency	50%	54%
Quality	Agency	Agency

In terms of quality and sector exposures the two indexes are very similar. At 4.61 years, the duration of the BIG index is slightly shorter than the TIM index. The TIM duration of five

(5) years currently provides additional deflation hedge benefits with similar diversification and volatility dampening potential.

The most important difference between the two indexes is their duration strategies. The TIM index maintains a constant option adjusted duration of five years. The BIG index duration floats with the general level of interest rates and the maturity structure of newly issued securities. In general, constant duration strategies are more volatile than floating duration strategies. The volatility of a constant duration strategy relative to a floating duration strategy increases with duration. A performance comparison of the two indexes is provided in the table below. The period from July 1, 1984 to December 31, 1990 represents the full history of the SBI's current bond manager program. During this period the 5 year constant duration TIM Index outperformed the BIG Index (14.21% versus 13.52% annualized). This higher level of performance was achieved with a slightly higher level of volatility (6.81% versus 5.60%).

Cumulative Annualized Return
July 1, 1984 to December 31, 1990

	SALOMON TIM	SALOMON BIG
Annualized ROR	14.21%	13.52%
Standard Deviation	6.81	5.60

INVESTMENT MANAGEMENT STRUCTURE

The Basic Funds moved to external money management in 1983. Originally the entire bond segment was actively managed. In mid-1988, one-half of the bond segment was place with two semi-passive or enhanced index managers. This change was consistent with the SBI's policy that at least half of the stock and bond segments of the Basic Funds will be managed passively.

Staff recommends that the SBI retain its current combined active/semi-passive structure. However, staff recommends that the actively managed portion of the bond segment be managed under a duration neutral approach. A set of guidelines will be developed that limits the extent of duration bets made by the active managers. Active managers will attempt to add value through sector, yield curve, and individual security selection decisions. This will assure that the bond segment meets both its deflation and diversification goals as effectively as possible while retaining the potential to add value from active management. Limiting the duration decision of the active managers provides several benefits:

- o Elimination of Misfit Risk

  Each manager would be given the asset class target as their benchmark and, therefore, each manager's portfolio would track the duration of the benchmark. This approach would eliminate the risk of the bond segment having a short duration when it should be providing a deflation hedge, or of having a long duration when it should be a diversifier and a volatility dampener.

- o Elimination of Inconsistent Performance

  Active managers have not consistently provided substantial value-added through interest rate anticipation. The potential value-added net of fees by active fixed income managers pursuing active duration strategies is, therefore, quite limited and may not be worth the potential risk of underperformance.

Staff recommends that the SBI retain up to four (4) duration neutral active bond managers for the Basic Funds. The use of multiple managers provides some diversification among active approaches. Given the current size of the Basic Funds' bond segment, firms would manage portfolios of approximately $250 million each. This is well within the capabilities of most firms that offer duration neutral bond management.

DETAILED REVIEW OF

INVESTMENT ADVISERS, INC.

I. ORGANIZATION

A. Ownership

B. Professional Staff

C. Fixed Income Asset Under Management

D. Personnel Turnover

II. INVESTMENT PHILOSOPHY

A. Stated Philosophy

B. Investment Process

III. PORTFOLIO BENCHMARK CONSTRUCTION

IV. PERFORMANCE ANALYSIS

A. Benchmark Explanatory Power

B. Portfolio Performance Relative to the Benchmark and the Salomon Big Index

C. Portfolio Performance Attribution

V. HISTORY OF SBI ACTION

VI. CONCLUSION

EXHIBITS

1- Sector Distribution
2- Quality Distribution
3- Performance Comparisons
4- VAM Analysis
5- Historical Benchmark
6- Duration vs. Spot Rate
7- Duration Analysis

EXTERNAL MANAGER DETAIL

INVESTMENT ADVISERS, INC.

I. ORGANIZATION

A. Ownership

Three ownership changes have occurred since the SBI hired IAI in 1984. IAI initially was a subsidiary of Inter-Regional Financial Group, Inc., a local financial services holding company. IAI management bought the subsidiary in 1985. Hill Samuel Group PLC, a merchant banking and financial services company located in London, purchased IAI in January of 1986. TSB Group PLC, an England banking institution, acquired Hill Samuel Group in November of 1987.

A staff believes the changes have not affected IAI's operations or investment process.

B. Professional Staff

Larry Hill has managed the SBI's portfolio since the inception of the account. IAI has three fixed income portfolio managers, one trader and two portfolio assistants.

C. Fixed Income Assets Under Management (Tax Exempt Discretionary)

Year (000)	Accounts	Assets
1990	68	$3,126
1989	64	$3,073
1988	62	$3,183
1987	52	$2,422
1986	40	$1,867
1985	15	$ 213
1984	12	$ 190

IAI has shown rapid account growth and has been able to handle the increase by hiring two new portfolio managers.

IAI does not have a growth plan in place. However, their investment style emphasizes duration shifts using treasuries. This style allows them to handle large account increases without hurting portfolio performance.

D. Personnel Turnover

The only changes in fixed income personnel are the two hirings.

II. INVESTMENT PHILOSOPHY

A. Stated Philosophy

IAI brings a cyclical approach to bond management. IAI believes the credit cycle primarily determines the business cycle and uses analysis of the credit cycle to make duration and sector decisions. IAI emphasizes duration management and believes the same factors that affect the credit cycle determine the direction of interest rates. IAI makes moderate duration and sector shifts and anticipates broad cyclical moves rather than short moves in the market place.

B. Investment Process

The fixed income committee determines portfolio strategy. This committee consists of IAI's fixed income managers. The committee follows IAI's philosophy, examining the credit cycle to determine portfolio strategy. IAI develops portfolio strategy by anticipating economic changes due to credit flows and the Federal Reserve's response to these changes. IAI believes the credit cycle follows three predictable stages.

- Business Recession and Economic Trough

  This is typically accompanied by excess financial and business capacity, net free reserves in the banking system, and a positively sloped yield curve.

- Business Recovery

  This stage is characterized by adequate financial and business capacity, moderate levels of borrowed reserves, and a flattening of the yield curve.

- Business Peak and Credit Crisis

  The final stage is accompanied by inadequate financial and business capacity, higher net borrowed reserves, and an inverted yield curve.

  The committee also monitors capacity utilization, unemployment, and the Diffusion Index published in Business Conditions Digest.

Once the phase of the credit cycle is determined, IAI tries to add value by shifting duration and sectors.

Duration/Maturity Strategy

Duration is a measure of a bond's price volatility and is measured in years. The longer the duration, the more volatile the returns. If a manager thinks interest rates are going to decline, duration is lengthened. Typically, a manager shortens duration if interest rates are going to increase. Either of these actions will add value if the manager's interest rate forecast is correct.

IAI tries to add the most value through duration shifts. IAI lengthens duration during the positive phase of the credit cycle when there is adequate physical and financial slack and interest rates should decline. Maturities may range from 16 to 20 years with duration as high as seven years. In a negative credit cycle phase when interest rates are rising, average maturity ranges from three to four years with duration as low as three years.

Sector Strategy

IAI's sector strategy is also driven by the three credit cycle stages.

- Business Recession and Economic Trough

  After the initial stages of a recession, IAI overweights corporate bonds. Yield spreads between corporates and treasuries are historically at their highest levels. As spreads narrow in the positive phase of the credit cycle, corporate bonds should outperform government securities. For the same reasons, discount mortgage securities are also overweighted by IAI during the recessionary phase.

- Business Recovery

  IAI shifts sector weightings back to governments during this phase since yield spreads narrow historically.

- Business Peak and Credit Crisis

  During this phase, corporate spreads are historically narrow. Therefore, IAI reduces or eliminates corporate securities to protect assets from downgrades and credit problems.

III. PORTFOLIO BENCHMARK CONSTRUCTION

IAI's benchmark was formed with assistance from Salomon Brothers, a broker-dealer. The benchmark is based on past portfolios and altered to reflect how IAI planned to manage portfolios in the future. This produced a portfolio overweighted in treasuries with a longer duration than the market. The below table compares IAI's benchmark sectors to the Salomon Broad Investment Grade Index.

EFFECTIVE DURATION CELLS
(In Percentages)

Sector	0-2 Yrs.	2-4 Yrs.	4-6 Yrs.	6-8 Yrs.	8+ Yrs.	Total
Treas./Agency						
Benchmark	15	15	20	10	15	75
Salomon BIG*	14	15	9	5	11	54
Mortgages						
Benchmark	0	0	15	0	0	15
Salomon BIG*	1	8	18	1	0	28
Corporates						
Benchmark	0	5	5	0	0	10
Salomon BIG*	2	5	5	5	1	18
Total						
Benchmark	15	20	40	10	15	100
Salomon BIG*	17	27	33	12	11	100

	IAI Benchmark	Salomon BIG*
Modified Effective Duration	4.97 Years	4.61 Years
Average Maturity	9.76 Years	9.70 Years
Average Coupon	8.89%	8.96%
Yield to Maturity	8.76%	8.76%

* as of 12/31/90

Governments and Agencies (Overweighting: 21%)

IAI's style emphasizes government securities as shown by Exhibit 1. Although governments have lower yields than other sectors, they are the most liquid securities and their duration can be accurately determined. This is important to IAI since they try to add most of their value by adjusting portfolio duration to anticipate interest rate moves. Additionally, IAI prefers to take interest rate risk but not the prepayment, call and credit risks of the mortgage and corporate market. Exhibit 2 shows how IAI has maintained a high quality portfolio to avoid credit risks.

Mortgage Securities (Underweighting: 13%)

IAI underweights this sector because they want to concentrate on adding value through correct duration bets. It is difficult to calculate accurate durations of mortgage securities due to prepayments. However, IAI is only slightly underweighted in intermediate 4-6 year duration securities. Mortgages historically have outperformed other issues in this intermediate sector.

Corporates (Underweighting: 8%)

Again, IAI underweights corporates because they try to add value through correct duration decisions. Corporate bonds have call risk making it harder to calculate portfolio duration. The benchmark corporate holdings are concentrated in short to intermediate holdings where there is less call risk than in longer duration issues. Additionally, intermediate corporates historically have outperformed intermediate governments by a larger margin than long corporates outperformed long governments.

IV. PERFORMANCE ANALYSIS

A. Benchmark Explanatory Power

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

   A benchmark should explain a manager's returns better than the broad market index. The standard deviation of monthly returns and the information ratio are two measures of the benchmark's explanatory power.

   - The standard deviation of portfolio returns minus benchmark returns (VAM) should be less than the standard deviation of portfolio returns minus index returns (EXM).

   - The information ratio (IR) is the ratio of the cumulative annualized VAM to the annual standard deviation of the VAM. The VAM IR should be greater than the EXM IR.

For Time Period 1/1/88 to 12/31/90	(VAM) Manager Actual vs. Benchmark	(EXM) Manager Actual vs. Salomon Brothers BIG Index
Cumulative Annualized Return	0.077	-0.204
Annualized Standard Deviation	1.599	2.043
Information Ratio	0.048	-0.100
Information Ratio t-statistic	0.084	-0.173

The above shows that:

- o IAI has slightly outperformed its benchmark and slightly underperformed the BIG index since January 1988.
- o The VAM standard deviation is less than the EXM standard deviation and indicates that the benchmark is better than the market at explaining IAI's returns.
- o No conclusion can be drawn from the information ratios since neither are statistically different from zero.

2. 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 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.

Residual Correlation Matrix

	EXM	MFT	VAM
Portfolio vs. market (EXM)	1.000		
Benchmark vs. market (MFT)	0.735	1.000	
Portfolio vs. benchmark (VAM)	0.954	0.500	1.000

There is a high correlation between MFT and EXM indicating that IAI's benchmark is a better benchmark than the market. However, there is also a high correlation between the MFT and the VAM when there should be no correlation.

Since IAI's benchmark was implemented, IAI's portfolio has generally had a long duration since they believed interest rates were declining. IAI's benchmark also has a longer duration than the market. Therefore, when interest rates declined, both the VAM and the MFT were positive. When interest rates increased, both the VAM and the MFT were negative. Therefore the correlation between the VAM and MFT is positive.

Sometime in the future, when IAI believes interest rates will rise, their duration will be shorter than their benchmark. Then when interest rates rise, the VAM will be positive while the the MFT will be negative. This creates a negative correlation coefficient which, in combination with the current positive correlation, causes the overall correlation coefficient to move towards zero. Therefore, this benchmark must be measured over a full interest rate cycle before the EXM and MFT show whether this is a valid benchmark.

B. Portfolio Performance Relative to the Benchmark and the Salomon Big Index

The portfolio has outperformed both its benchmark and the Salomon BIG while the benchmark has underperformed the BIG. Until January 1988, IAI's benchmark was the Salomon BIG. Since then, the new benchmark with a longer duration has underperformed the market because interest rates have risen. Performance for the portfolio is shown in Exhibit 3 and illustrated by the VAM chart in Exhibit 4. The VAM chart shows that IAI's performance above the benchmark is not statistically significant.

The VAM also shows that during the first six months IAI was hired, they significantly outperformed their benchmark. Interest rates were falling and IAI's duration was significantly longer than their benchmark.

C. Portfolio Performance Attribution

Precise fixed income performance attribution is difficult due to pricing problems inherent in bond portfolios. However, past portfolio characteristics indicate how the manager tried to add value.

IAI followed their philosophy and tried to add the most value by anticipating interest rate direction and adjusting duration. IAI has tried to add some value through sector allocation as well.

Value Added through Sector Allocation

Exhibit 5 shows that IAI has underweighted mortgages. This hurt performance since mortgages have been the best performing sector since the SBI hired IAI. IAI's average corporate holdings have equaled the average benchmark holdings. IAI tried to add value by shifting corporate holdings over time from 0-32%. Staff cannot determine if this shifting helped portfolio performance.

Value Added through Interest Rate Anticipation

IAI's active management has concentrated on anticipating interest rates. Unlike the minor sector decisions, IAI has varied the duration significantly. The duration of the portfolio has ranged from 3.2 to 7.0 years. Exhibit 6 shows the portfolio, benchmark, and market durations along with the ten year spot rates. This exhibit shows how IAI's duration varies when compared to its benchmark and interest rates, assuming the ten year spot rates represent the direction and magnitude of all interest rate shifts. Exhibit 7 shows this graphically the direction and magnitude of all interest rate shifts.

IAI's duration decisions have both helped and hurt performance. For instance, in 1989 ten year spot rates dropped from 8.89% to 7.81%. IAI's duration was long and the portfolio returns were 150 basis points greater than the benchmark. However, this long duration hurt performance in 1990 as interest rates rose from 7.81% to 8.1%. Portfolio returns were 40 basis points lower than the benchmark during 1990. Overall, IAI appears to have made correct duration decisions since they have outperformed their benchmark.

V. History of SBI Action

- In July 1984, IAI received $25,000,000.
- In October 1989, IAI received an additional $50,000,000 due to rebalancing activity in the Basic Retirement Funds.

VI. CONCLUSION

Staff concludes that IAI should continue as an active fixed income manager until the fixed income segment of the Basic Retirement Funds is restructured. The firm's role in the SBI's fixed income program will need to be re-evaluated at that time.

EXHIBIT 1

IAI
SECTOR DISTRIBUTION

	GOVERNMENTS	MORTGAGES	UTILITIES	INDUSTRIALS	FINANCE	CASH EQUIVALENTS
1990						
Q4	68	25	0	0	6	2
Q3	74	13	0	0	12	1
Q2	72	10	2	0	14	2
Q1	71	10	0	0	18	1
1989						
Q4	74	10	0	0	14	2
Q3	73	10	0	0	15	2
Q2	72	10	0	0	16	2
Q1	65	15	0	0	19	1
1988						
Q4	72	7	0	0	20	1
Q3	83	8	0	0	3	6
Q2	84	8	0	0	3	5
Q1	87	8	0	3	0	2
1987						
Q4	87	8	0	0	3	2
Q3	79	9	0	0	11	1
Q2	72	9	0	8	11	0
Q1	67	9	0	11	14	1
1986						
Q4	64	10	0	22	3	1
Q3	72	0	0	23	3	2
Q2	73	0	0	19	4	4
Q1	74	0	0	17	4	5
1985						
Q4	95	0	0	0	0	5
Q3	94	0	1	0	4	1
Q2	92	0	3	0	4	1
Q1	82	0	3	10	4	1
1984						
Q4	71	0	3	21	4	1
Q3	68	0	3	29	0	0

EXHIBIT 2

IAI
QUALITY DISTRIBUTION

		AAA	AA	A	BAA & BELOW
1990	Q4	93	3	4	0
	Q3	88	1	11	0
	Q2	83	3	14	0
	Q1	82	5	13	0
1989	Q4	85	2	13	0
	Q3	85	0	15	0
	Q2	84	2	14	0
	Q1	81	4	15	0
1988	Q4	81	4	15	0
	Q3	92	2	0	0
	Q2	92	3	0	0
	Q1	95	3	0	0
1987	Q4	95	3	0	0
	Q3	96	4	0	0
	Q2	88	4	8	0
	Q1	85	0	14	0
1986	Q4	78	4	14	3
	Q3	76	8	11	3
	Q2	77	8	11	0
	Q1	79	8	8	0
1985	Q4	95	0	0	0
	Q3	94	4	1	0
	Q2	94	4	1	0
	Q1	85	14	0	0
1984	Q4	73	26	0	0
	Q3	71	29	0	0

EXHIBIT 3

IAI
PERFORMANCE COMPARISONS

Comparison of Customized Benchmark Portfolio Performance
With Salomon BIG Index

		TOTAL PORTFOLIO		SALOMON
		ACTUAL	BENCHMARK	BIG
1984	3Q	11.8%	8.6%	8.6%
	4Q	8.8	7.5	7.5
		21.6%	16.8%	16.8%
1985	1Q	1.8%	2.2%	2.2%
	2Q	9.2	8.9	8.9
	3Q	2.3	2.0	2.0
	4Q	6.3	7.7	7.7
		21.0%	22.3%	22.3%
1986	1Q	5.9%	7.9%	7.9%
	2Q	0.9	1.1	1.1
	3Q	2.4	2.5	2.5
	4Q	2.7	3.3	3.3
		12.3%	15.4%	15.4%
1987	1Q	1.0%	1.3%	1.3%
	2Q	-0.9	-1.6	-1.6
	3Q	-1.9	-2.8	-2.8
	4Q	5.1	5.8	5.8
		3.1%	2.6%	2.6%
1988	1Q	3.2%	3.8%	3.8%
	2Q	1.1	1.0	1.2
	3Q	1.9	1.9	2.0
	4Q	0.6	0.7	0.8
		6.9%	7.6%	8.0%
1989	1Q	1.3%	1.1%	1.2%
	2Q	9.8	8.4	7.9
	3Q	0.4	0.9	1.0
	4Q	4.2%	3.9	3.7
		16.4%	14.9%	14.4%
1990	1Q	-2.7%	-1.2%	-0.8%
	2Q	4.0	3.7	3.6
	3Q	-0.6	0.1	1.0
	4Q	7.0	5.4	5.1
		7.7%	8.1%	9.1%
Cumulative		118.3%	116.1%	118.0%

EXHIBIT 4

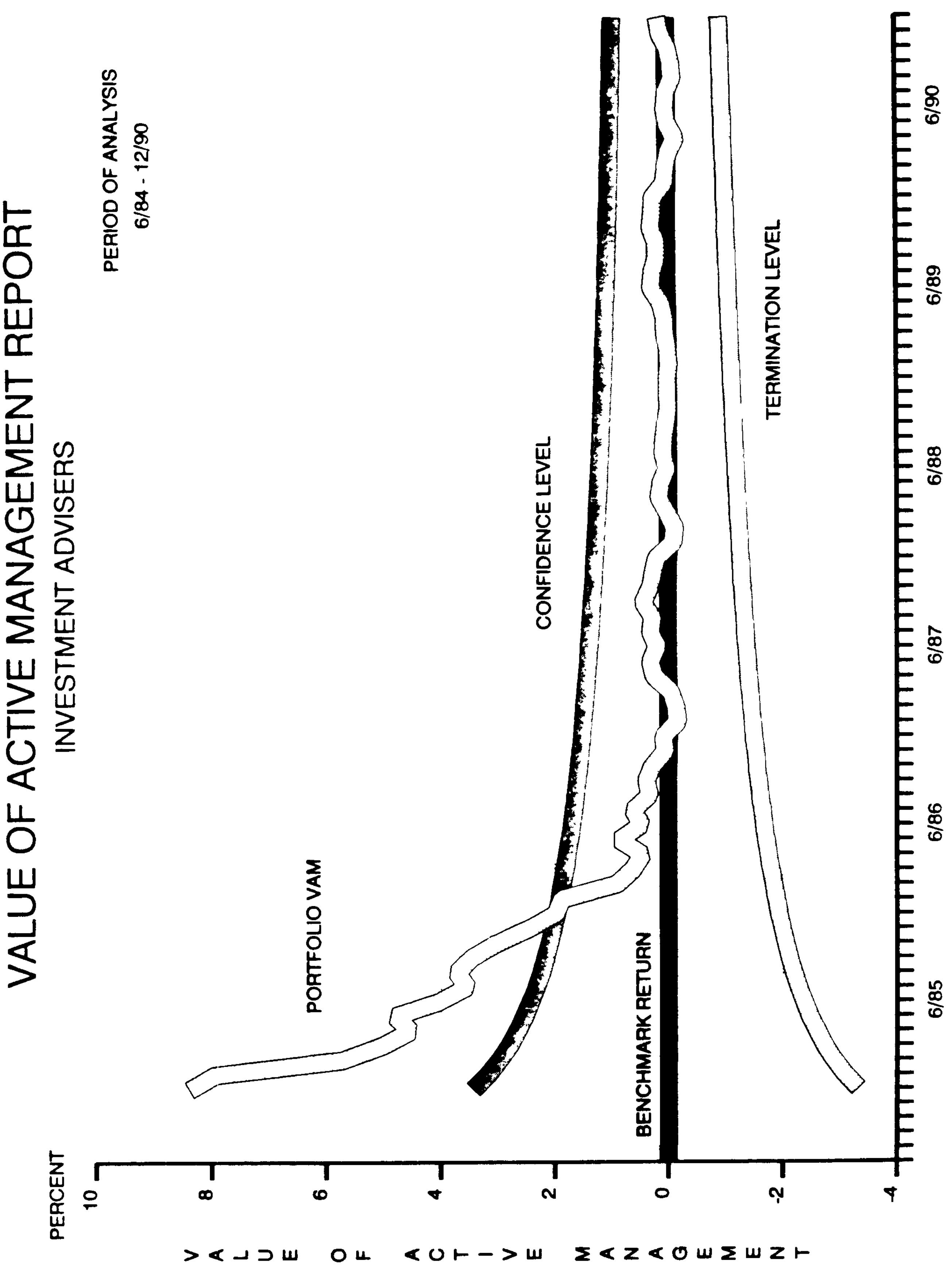

VALUE OF ACTIVE MANAGEMENT REPORT
INVESTMENT ADVISERS
PERIOD OF ANALYSIS
6/84 - 12/90
PORTFOLIO VAM
CONFIDENCE LEVEL
BENCHMARK RETURN
TERMINATION LEVEL
PERCENT
10
8
6
4
2
0
-2
-4
6/85
6/86
6/87
6/88
6/89
6/90
VALUE OF ACTIVE MANAGEMENT

EXHIBIT 5

IAI
HISTORICAL BENCHMARK
SECTOR BREAKDOWN

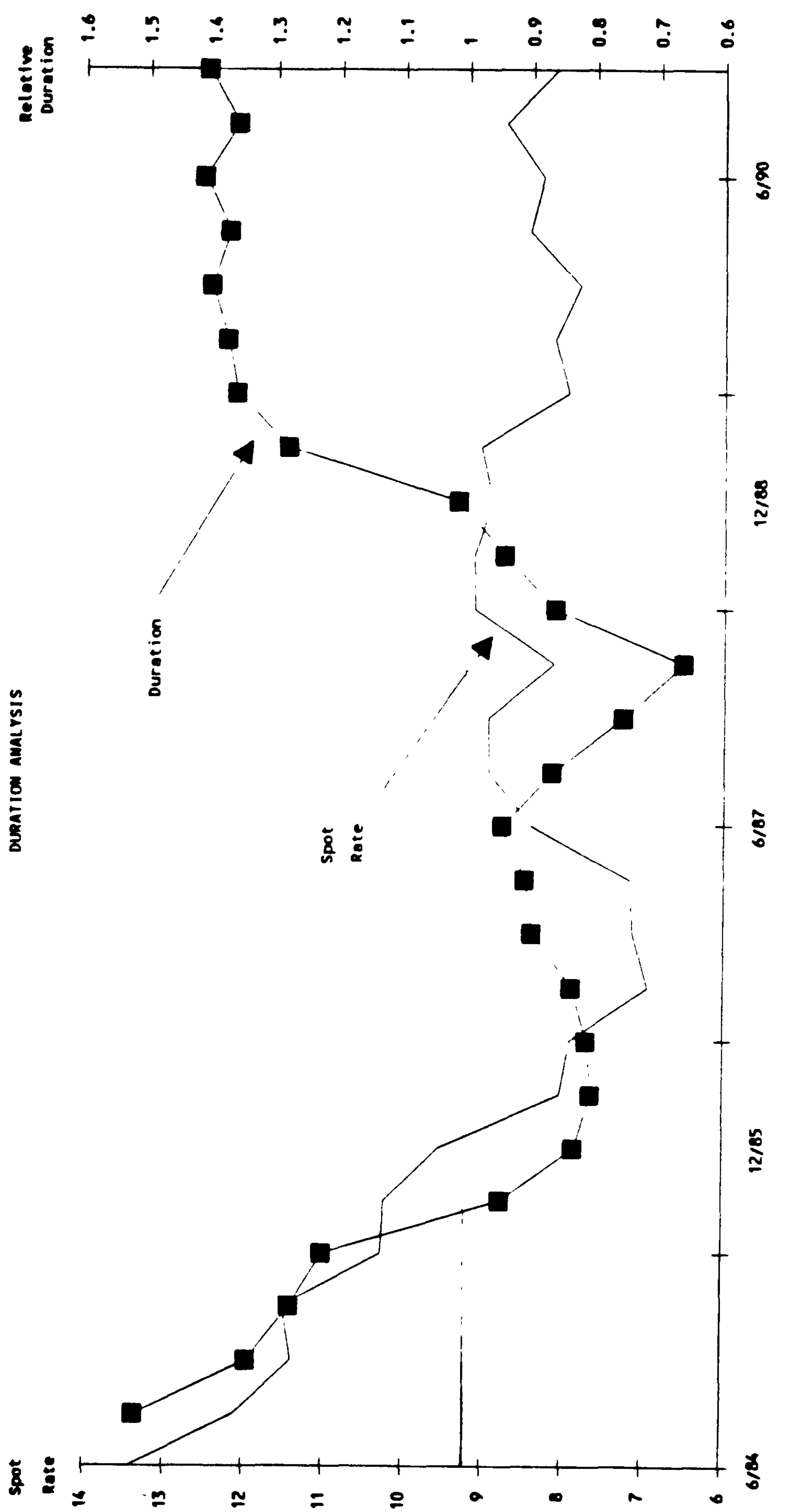
	GOVERNMENT		MORTGAGES		CORPORATES	
	PORTFOLIO	BENCHMARK	PORTFOLIO	BENCHMARK	PORTFOLIO	BENCHMARK
9/84	68	61	0	19	32	20
12/84	71	61	0	19	28	20
3/85	82	61	0	19	17	20
6/85	92	61	0	19	7	20
9/85	94	61	0	19	5	20
12/85	95	61	0	19	0	20
3/86	74	60	0	20	21	20
6/86	73	59	0	20	23	21
9/86	72	59	0	21	26	20
12/86	64	58	10	21	25	21
3/87	67	57	9	22	25	21
6/87	72	57	9	24	19	19
9/87	79	56	9	24	11	20
12/87	87	56	8	25	3	19
3/88	87	75	8	15	3	10
6/88	84	75	8	15	3	10
9/88	83	75	8	15	3	10
12/88	72	75	7	15	20	10
3/89	65	75	15	15	19	10
6/89	72	75	10	15	16	10
9/89	73	75	10	15	15	10
12/89	74	75	10	15	14	10
3/90	71	75	10	15	18	10
6/90	72	75	10	15	16	10
9/90	74	75	13	15	12	10
12/90	68	75	25	15	6	10

EXHIBIT 6

IAI
DURATION VS. SPOT RATE

	10 YEAR SPOT RATE	PORTFOLIO DURATION	BENCHMARK DURATION	MARKET DURATION
1990				
Q4	8.10%	7.0 Years	4.97 Years	4.61 Years
Q3	8.74	6.7	4.92	4.69
Q2	8.27	7.0	4.95	4.61
Q1	8.44	6.8	4.95	4.56
1989				
Q4	7.81	7.0	4.99	4.55
Q3	8.12	6.8	4.94	4.55
Q2	7.95	6.7	4.92	4.45
Q1	9.04	6.3	4.92	4.42
1988				
Q4	8.89	5.0	4.93	4.44
Q3	9.12	4.5	4.78	4.39
Q2	9.11	4.1	4.76	4.46
Q1	8.12	3.2	4.83	4.49
1987				
Q4	8.94	3.4	4.50	4.50
Q3	8.93	3.9	4.50	4.50
Q2	8.41	4.2	4.45	4.45
Q1	7.17	3.8	4.18	4.18
1986				
Q4	7.13	3.7	4.12	4.12
Q3	6.94	3.5	4.19	4.19
Q2	7.91	3.4	4.19	4.19
Q1	8.03	3.2	3.98	3.98
1985				
Q4	9.55	3.3	3.97	3.97
Q3	10.23	3.8	4.02	4.02
Q2	10.27	4.9	4.00	4.00
Q1	11.50	5.0	3.92	3.92
1984				
Q4	11.39	5.8	4.32	4.32
Q3	12.11	6.4	4.21	4.21

EXHIBIT 7



DURATION ANALYSIS
Spot Rate
Relative Duration
Duration
Spot Rate
14
13
12
11
10
9
8
7
6
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
6/84
12/85
6/87
12/88
6/90

BOND MANAGERS

Fourth 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:

- perform an in-depth review of Miller Anderson as part of the regular three year review cycle.
- place Western on probation due to the departure of the portfolio manager assigned to the SBI's account.

Current Managers	Total Market Value 12/31/90 (Thousands)	Quarter Ending 12/31/90 Actual	Bmrk	Year Ending 12/31/90 Actual	Bmrk	Annualized Five Years Ending 12/31/90 Actual	Bmrk	Percent of Bond Segment 12/31/90 Basic Funds
IAI	$120,720	7.0%	5.4%	7.7%	8.1%	9.2%	9.6%	6.7%
Lehman Ark	107,592	4.6	4.6	8.7	9.0	9.2	9.4	6.0
Miller Anderson	192,343	6.1	5.1	8.8	9.1	9.7	9.8	10.7
Western Asset	381,193	5.5	4.8	7.9	9.1	10.3	9.8	21.2
Fidelity*	499,881	5.2	5.1	9.1	9.1			27.7
Lincoln*	498,804	5.3	5.1	9.2	9.1			27.7
Aggregate **		5.4	5.0	8.8	9.0	9.9	9.7	100.0
Salomon Broad Investment Grade Index		5.1%		9.1%		9.8%		

* Semi-passive manager

** Historical performance reflects composite of current managers only.

INVESTMENT ADVISERS

PORTFOLIO MANAGER: Larry Hill **ASSETS UNDER MANAGEMENT: $120,719,808**

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 and focuses largely on specific bond characteristics such as call provisions.

QUALITATIVE EVALUATION
(Reported By Exception)

The current evaluation notes the following:

- No current concerns.

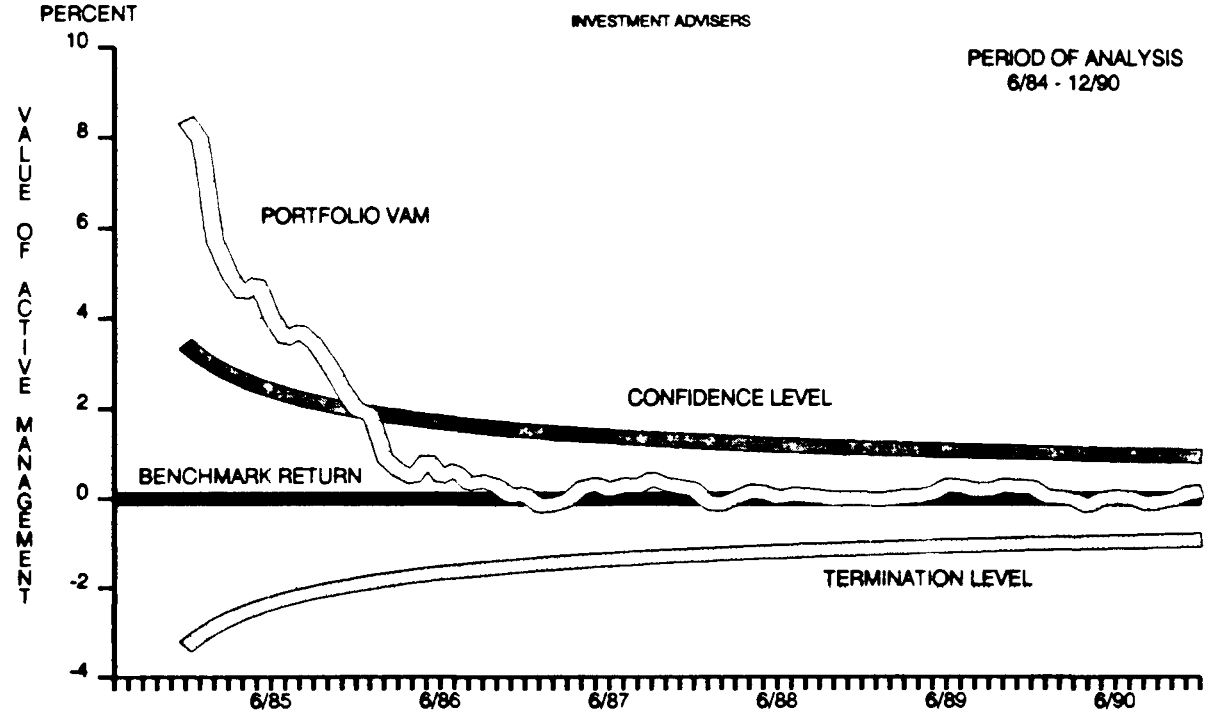
QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 7/1/84
Actual Return	7.0%	7.7%	9.2%	13.5%
Benchmark	5.4	8.1	9.6	13.4

STAFF RECOMMENDATIONS

No action required.

VALUE OF ACTIVE MANAGEMENT REPORT



LEHMAN ARK MANAGEMENT

PORTFOLIO MANAGER: Kevin Hurley **ASSETS UNDER MANAGEMENT: $107,592,211**

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. 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:

- The firm has used an index-like approach in its management of the portfolio and has made relatively few active bets.

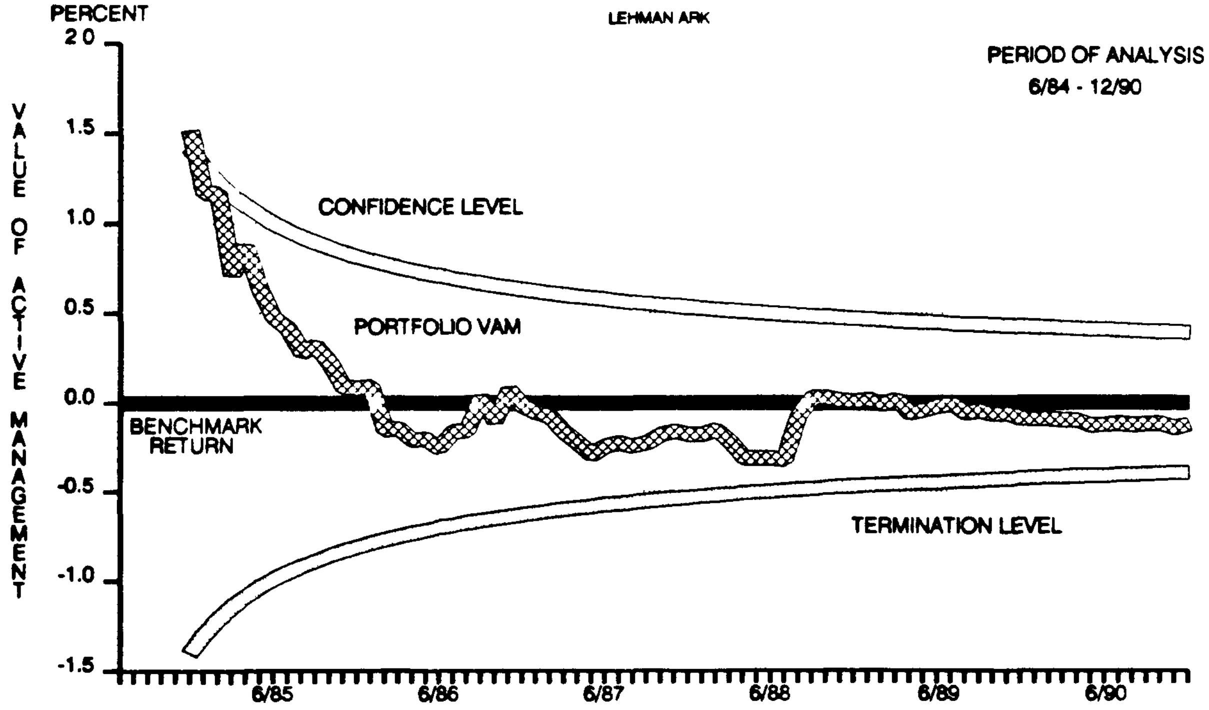
QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 7/1/84
Actual Return	4.6%	8.7%	9.2%	12.5%
Benchmark	4.6	9.0	9.4	12.6

STAFF RECOMMENDATIONS

No action required.

VALUE OF ACTIVE MANAGEMENT REPORT



MILLER ANDERSON

PORTFOLIO MANAGER: Tom Bennet **ASSETS UNDER MANAGEMENT: $192,343,273**

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. Changes 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 invest in mortgage securities, Miller Anderson intensively researches and, in some cases, manages the mortgage pools in which it invests.

QUALITATIVE EVALUATION
(Reported By Exception)

The firm's strengths continue to be:

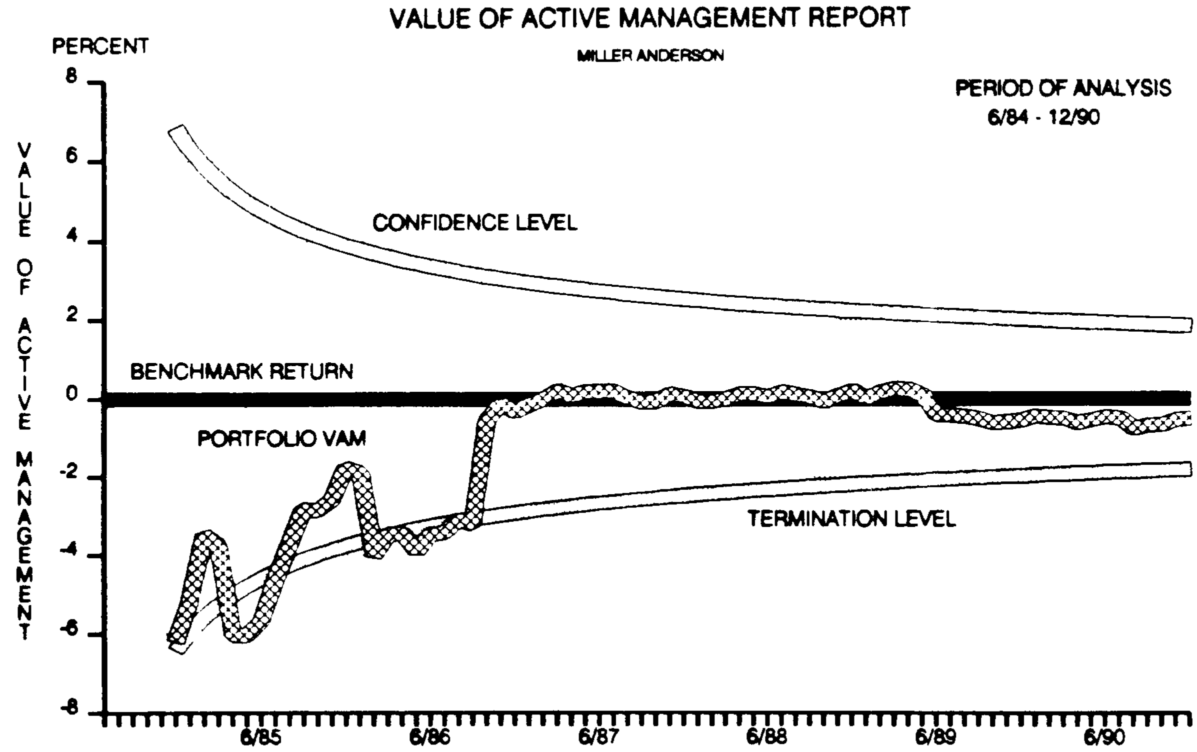
- Highly successful and experienced professionals.
- Extensive securities research process.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 7/1/84
Actual Return	6.1%	8.8%	9.7%	13.0%
Benchmark	5.1	9.1	9.8	13.5

STAFF RECOMMENDATIONS

Perform an in-depth review of Miller Anderson as part of the regular three year review cycle.



WESTERN ASSET MANAGEMENT

PORTFOLIO MANAGER: Edgar Robie, Jr. **ASSETS UNDER MANAGEMENT: $381,192,710**

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.

QUALITATIVE EVALUATION
(Reported By Exception)

The firm's exceptional strengths continue to be:

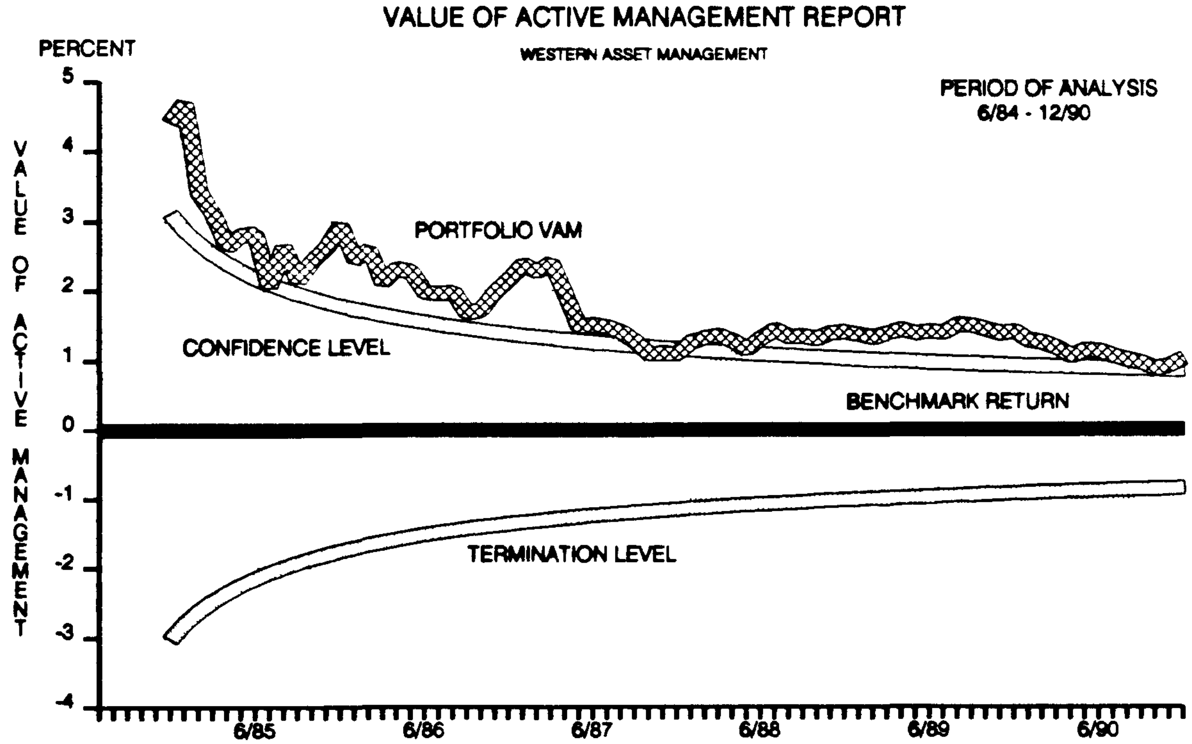
- Highly successful and experienced professionals.
- Extensive research and understanding in the application of normal portfolios to bond management.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 7/1/84
Actual Return	5.5%	7.9%	10.3%	14.4%
Benchmark	4.8	9.1	9.8	13.3

STAFF RECOMMENDATIONS

The portfolio manager responsible for the SBI's account left the firm. Western should be placed on probation while the impact of the change is assessed.



Tab G

COMMITTEE REPORT

DATE: March 4, 1990

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

FROM: Alternative Investment Committee

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

- o Review of current strategy.
- o Results of annual review sessions with existing managers.
- o Additional investment with an existing venture capital manager, Kohlberg, Kravis and Roberts (KKR).

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 investments 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 $345 million to eleven commingled real estate funds. In addition, since June 1990, the SBI has approved investments in the Copley Value Fund for up to $75 million, the LaSalle Income Parking Fund for up to $20 million, the Zell Real Estate Fund for up to $100 million and the Heitman Real Estate Fund for up to $30 million. Despite a slower than expected fund raising process, the

LaSalle, Heitman and Zell funds are expected to be closed and finalized in the first or second quarter of 1991.

The Copley Value Fund, on the other hand, is no longer under consideration for investment. Copley has decided to not to proceed with the fund due primarily to the loss of a very significant lead investor.

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 nineteen commingled venture capital funds for a total commitment of $379 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 February, the Alternative Investment Committee and staff conducted annual review sessions with several of the SBI's existing venture capital investment managers: Northwest, Summit, IAI and First Century. In addition, the Committee had review sessions with two of the SBI's resource managers: Morgan and First Reserve.

Summaries of the review sessions are included as Attachments B,C,D,E,F and G to this committee report.

Overall, the meetings went well and produced no major surprises.

In comparing strategic and organizational effectiveness and performance to date, staff and the Alternative Investment Committee have been the most satisfied with IAI, Summit, First Century, Morgan and First Reserve and would recommend additional investments with these managers, when appropriate.

The Committee and staff have been less satisfied with the operations and performance to date of Northwest and no new investments with this manager would be considered at this time.

ACTION ITEM:

1) Follow-on investment in the Kohlberg, Kravis, Roberts & Company (KKR) Supplemental Fund

KKR is seeking investors in a new $1 to $2 billion leveraged buyout investment fund, the 1991 Supplemental Fund. The 1991 Supplemental Fund is being raised to supplement KKR's prior fund, the 1987 Fund, which raised $5.65 billion. To date, approximately $3.8 billion of the 1987 Fund has been invested. Like the 1987 Fund, the 1991 Fund will invest in primarily in management buyouts. However, it is expected that the 1991 Fund will utilize more conservative acquisition capital structures (less debt, more equity) than in prior funds.

Since 1984, the SBI has committed $25 million, $18 million and $147 million to KKR's 1984 Fund, 1986 Fund and 1987 Fund, respectively. To date, KKR has invested $141 million of the SBI's aggregate commitment and returned, in cash, $67 million. The SBI's remaining investments with KKR have a market value of approximately $161 million. These numbers translate to annualized internal rates of return of 27.7% and 23.2% in KKR's 1984 and 1986 Funds, respectively. Future return expectations for the 1987 Fund and the 1991 Supplemental Fund are in the range of 20-25%.

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 $150 million or 20%, whichever is less, in the 1991 KKR Supplemental Fund.

Summary of Alternative Investments

	Inception Date	Commit. (Millions)	Funded Commit. (Millions)	Mkt. Value Of Funded Commit. (Millions)	Cash Distr. (Millions)	Unfunded Commit. (Millions)	IRR	Measurement Period
Real Estate								
Aetna	4/82	$40.0	$40.0	$64.9	$0.0	$0.0	7.4%	7.9 Yrs.
Equitable	10/81	40.0	40.0	78.5	0.0	0.0	9.3	8.6
Heitman I	8/84	20.0	20.0	21.7	10.9	0.0	11.0	6.1
Heitman II	11/85	30.0	30.0	35.7	9.1	0.0	10.4	4.9
Heitman III	1/87	20.0	20.0	21.2	3.7	0.0	8.0	3.7
RREEF	9/84	75.0	75.0	81.9	14.6	0.0	6.2	6.1
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	16.2	0.0	0.0	2.4	3.3
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	49.8	9.5	0.0	10.3	4.6
TCW IV	11/86	30.0	30.0	35.6	2.1	0.0	9.8	3.3
Real Estate Totals		**$345.0**	**$345.0**	**$444.9**	**$49.9**	**$0.0**		
Resource (Oil & Gas)								
AMGO I	9/81	$15.0	$15.0	$6.9	$3.1	$0.0	-5.4%	9.0 Yrs.
AMGO II	2/83	7.0	7.0	6.2	1.8	0.0	2.4	7.7
AMGO IV	7/88	12.3	12.3	12.7	0.7	0.0	6.9	2.2
AMGO V	5/90	16.8	9.4	9.4	0.0	7.4	0.0	0.6
Apache I	5/84	3.0	2.0	2.0	0.7	1.0	15.9	6.2
Apache III	12/86	30.0	30.0	20.9	20.3	0.0	13.6	3.5
Morgan O&G	8/88	15.0	10.8	13.3	0.0	4.2	16.8	2.1
British Pet.	2/89	25.0	25.0	34.0	4.3	0.0	37.9	1.4
Resource Totals		**$124.1**	**$111.5**	**$105.4**	**$31.0**	**$12.6**		

(Continued on next page)

Notes: Figures are updated after each manager's annual review session.
IRR indicates internal rate of return.
Totals may not add due to rounding.

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Summary of Alternative Investments Con't.

	Inception Date	Commit. (Millions)	Funded Commit. (Millions)	Mkt. Value Of Funded Commit. (Millions)	Cash Distr. (Millions)	Unfunded Commit. (Millions)	IRR	Measurement Period
Venture Capital								
Allied	9/85	$5.0	$5.0	$4.9	$1.3	$0.0	7.7%	4.8 Yrs.
DSV	4/85	10.0	10.0	11.3	0.0	0.0	2.7	5.2
First Century	12/84	10.0	6.5	5.3	3.0	3.5	8.3	5.8
First Chicago	5/88	5.0	4.2	4.3	0.4	0.8	8.3	2.4
First Chicago II	7/90	20.0	4.0	4.0	0.0	16.0	0.0	0.4
Golder Thoma	10/87	14.0	6.3	5.7	0.0	7.7	-5.9	2.9
IAI Ventures II	7/90	10.0	1.0	1.0	0.0	9.0	5.5	0.2
Inman/Bowman	6/85	7.5	5.3	4.5	0.0	2.3	-4.5	5.1
KKR I	3/84	25.0	25.0	18.4	53.2	0.0	27.7	6.7
KKR II	12/85	18.4	18.4	27.7	14.5	0.0	23.2	4.9
KKR III	10/87	146.6	133.1	141.2	8.0	13.5	6.0	3.1
Matrix	8/85	10.0	10.0	11.2	2.1	0.0	8.9	4.9
Matrix II	5/90	10.0	1.0	1.0	0.0	9.0	0.0	0.2
Norwest	1/84	10.0	10.0	6.3	2.5	0.0	-3.0	6.7
Summit I	12/84	10.0	10.0	9.9	4.5	0.0	9.8	5.8
Summit II	5/88	30.0	12.0	11.1	0.6	18.0	-2.0	2.4
Superior	6/86	6.6	4.2	3.7	0.0	2.5	-3.8	4.3
T. Rowe Price	11/87	1.1	1.1	0.0	1.3	0.0	32.4	2.6
Zell/Chilmark	7/90	30.0	0.2	0.2	0.0	29.8	0.0	0.0
Venture Capital Totals		**$379.3**	**$267.3**	**$271.7**	**$91.3**	**$111.9**		

SUMMARY

Real Estate Totals	$ 345.0	$ 345.0	$ 444.9	$ 49.9	$ 0.0
Resource Totals	124.1	111.5	105.4	31.0	12.6
Venture Capital Totals	379.3	267.3	271.7	91.3	111.9
GRAND TOTALS	**$848.4**	**$723.8**	**$822.0**	**$172.2**	**$124.5**

Notes: Figures are updated after each manager's annual review session.
IRR indicates internal rate of return.
Totals may not add due to rounding.

2/91

ATTACHMENT B

ANNUAL REVIEW SUMMARY
SUMMIT PARTNERS
February 7, 1991

MANAGER REPRESENTATIVES:	Roe Stamps, Steve Woodsum	
SBI ASSETS UNDER MANAGEMENT:	Summit Ventures I	$10,000,000
	Summit Ventures II	12,000,000
	TOTAL	$22,000,000

BACKGROUND AND DESCRIPTION:

Summit Ventures I and II were formed by the managing general partners of Stamps, Woodsum & Company, and Shearson/American Express. Stamps and Woodsum focus on profitable, expansion stage firms that have not received any venture backing. Most investments are in high-tech firms. Investments are diversified by location and industry type. Summit has offices in Boston, Atlanta, and Southern California. Summit I and II have ten year terms.

QUALITATIVE EVALUATION:

Summit Partners has successfully deployed their investment strategy of seeking deals where they are the lead and first professional investor, owners of senior securities, and directors of the board. They have invested primarily in later stage companies that have businesses in computer related technology, communications, health care and environmental services. Summit made significant additions to its staff to increase lead-generating activities and added a partner with considerable professional experience.

One (1) final company was added to the Summit I portfolio, while 13 new investments were made in Summit II. The SBI received three cash distributions and two stock distributions totalling $3.9 million from Summit I and $1.1 million in distributions from Summit II, during the year. Further distributions are anticipated in the coming year.

ATTACHMENT B (con't)

QUANTITATIVE EVALUATION

	SUMMIT I	SUMMIT II
COMMITMENT:	$10,000,000	$30,000,000
FUNDED COMMITMENT:	$10,000,000	$12,000,000
MARKET VALUE OF FUNDED COMMITMENT:	$ 9,876,149	$11,141,320
CASH DISTRIBUTIONS:	$ 4,463,481	605,006
INCEPTION DATE(S):	Dec. 1984	May 1988
INTERNAL RATE OF RETURN (IRR): (annualized, since inception)	9.8%	-2.0%

DIVERSIFICATION PROFILE

LOCATION	PERCENTAGE
Northeast	30.0%
Midwest	10.0
South	14.0
West	46.0
	100.0%

STAGE OF DEVELOPMENT	PERCENTAGE
Early Stage	7.0%
Emerging Growth	83.0
Lev. Investments	10.0
	100.0%

INDUSTRY	PERCENTAGE
Communications	6.0%
Env. Services	13.0
Fin. Services	8.0
Med./Health Care	12.0
Electronics	26.0
Software	27.0
Other	8.0
	100.0%

STAFF COMMENTS AND RECOMMENDATIONS:

The Alternative Investment Committee and staff have been satisfied with Summit's operation and performance to date. Additional investments with Summit will be considered, when appropriate.

ATTACHMENT C

ANNUAL REVIEW SUMMARY
FIRST CENTURY PARTNERSHIP
February 7, 1991

MANAGER REPRESENTATIVES: Lisa Roumell, Michael Meyers
Sage Givens, Steve Bird

SBI ASSETS UNDER MANAGEMENT: $6,500,000

BACKGROUND AND DESCRIPTION:

First Century III was formed in December, 1984 and has a term of ten years. Smith Barney Venture Corp., a subsidiary of Smith Barney Harris Upham and Company is the general partner and manager of the partnership. Smith Barney Venture has offices in New York and San Francisco. This is the third fund formed by the firm since 1972. The partnership invests primarily in early stage, high technology companies that are diversified by location and industry group.

QUALITATIVE EVALUATION:

During 1990, First Century added four new companies to the portfolio while participating in several follow-on financings. The general partner anticipates expanding into the health services area, primarily pharmaceutical and medical service related opportunities, while avoiding investments in the biotechnology area.

First Century's technology focus is centered on software companies that are developing market niches rather than high-tech entities which are capital intensive. Recently, the partnership has focused on buyouts that back organizations with strong management and significant business growth possibilities and are better capitalized relative to other buyout opportunities.

The general partner has indicated the current recession may cause a few disappointments in the portfolio. Additionally, too much partner time is being focused on deals with short-term lenders to ensure that working capital needs remain available. This situation may cause a slowdown in the pace of new financings. However, First Century has been very successful in adapting the partnership's investment strategy in the everchanging venture capital environment. With its evolving focus, it appears that better than average gains may be realized.

ATTACHMENT C (con't)

QUANTITATIVE EVALUATION

COMMITMENT:	$10,000,000
FUNDED COMMITMENT:	$6,500,000
MARKET VALUE OF FUNDED COMMITMENT:	$5,321,874
CASH DISTRIBUTIONS:	$2,992,083
INCEPTION DATE(S):	Dec. 1984
INTERNAL RATE OF RETURN (IRR): (annualized, since inception)	8.3%

DIVERSIFICATION PROFILE

LOCATION	PERCENTAGE
West	52.5%
South	18.5
Midwest	9.8
East	19.2
	100.0%

STAGE OF DEVELOPMENT	PERCENTAGE
Early	52.2%
Expansion	17.4
Restart	3.1
Established	6.9
LBO	14.0
Public	.8
Restructurings	5.6
	100.0%

INDUSTRY	PERCENTAGE
Computer	17.6%
Electronic	9.6
Consumer	25.8
Medical	29.3
Communications	5.1
Manufacturing	6.2
Other	6.4
	100.0%

STAFF COMMENTS AND RECOMMENDATIONS:

The Alternative Investment Committee and staff have been satisfied with First Century's operation and performance to date. Additional investments with First Century will be considered, when appropriate.

ATTACHMENT D

ANNUAL REVIEW SUMMARY
IAI VENTURE CAPITAL GROUP
February 14, 1991

MANAGER REPRESENTATIVES: Mitch Dann, Noel Rahn

SBI ASSETS UNDER MANAGEMENT:

Superior	$4,153,125
IAI II	$1,000,000
TOTAL	$5,153,125

BACKGROUND AND DESCRIPTION:

The SBI has investments in two funds managed by the IAI Venture Capital Group, a subsidiary of Investment Advisors, Inc. The first, Superior Ventures is a Minnesota-based venture capital limited partnership. It was formed in June, 1986 and has an eleven year term. Superior Ventures can invest up to 15% of the fund in other Minnesota-based venture capital limited partnerships. The remainder of the fund will be invested in operating companies located within the state. IAI Venture Partners II, the second fund, was formed in July 1990. Half of the fund is slated for Minnesota-based investments.

QUALITATIVE EVALUATION:

The Superior Ventures Fund has a portfolio of 15 operating companies, 13 of which are primarily based in Minnesota, and 1 investment in a Minnesota venture capital fund. After four years, the fund has several emerging winners and has been intregal in discovering and cultivating new investment opportunities within Minnesota. IAI anticipates added one more special situation investment to the Superior Ventures portfolio.

The IAI II Fund closed in July 1990 with a total of $60 million, having raised $20 million more than anticipated. The fund has made five investments in operating companies, three of which are shared with Superior Ventures and appear to be potential emerging winners. One of the remaining investments is in a computer-aided automobile diagnostic equipment company which is viewed as having significant potential.

ATTACHMENT D (con't)

QUANTITATIVE EVALUATION

	SUPERIOR	IAI II
COMMITMENT:	$6,645,000	$10,000,000
FUNDED COMMITMENT:	$4,153,125	$ 1,000,000
MARKET VALUE OF FUNDED COMMITMENT:	$3,714,908	$ 1,009,197
CASH DISTRIBUTIONS:	$0	$0
INCEPTION DATE(S):	June, 1986	July, 1990
INTERNAL RATE OF RETURN (IRR): (annualized, since inception)	-3.8%	5.5%

DIVERSIFICATION PROFILE

LOCATION	PERCENTAGE
Minnesota	93.0%
West	7.0
	100.0%

STAGE OF DEVELOPMENT	PERCENTAGE
Seed	3.0%
Development	5.2
Initial Market Penetration	24.3
Expansion	67.5
	100.0%

INDUSTRY	PERCENTAGE
Medical	17.2%
Software	15.9
Systems	27.2
Communications	10.3
Consumer	9.8
Environmental	5.6
Other	14.0
	100.0%

STAFF COMMENTS AND RECOMMENDATIONS:

The Alternative Investment Committee and staff have been satisfied with Superior's operation and performance to date. Additional investments with Superior will be considered, when appropriate.

ATTACHMENT E

ANNUAL REVIEW SUMMARY
J.P. MORGAN, PETROLEUM FUND II
February 5, 1991

MANAGER REPRESENTATIVES: Bill Walker

SBI ASSETS UNDER MANAGEMENT: $10,800,000

BACKGROUND AND DESCRIPTION:

Petroleum Fund II is managed by the Morgan Petroleum Group, a division of Morgan Guaranty Trust Company and headquartered in Houston, Texas. Three professional staff members manage the investment activities of the Petroleum group.

The Fund's strategy is to have a diversified portfolio with investments ranging in size from $5 million to $20 million. The fund will invest in producing properties, development and exploration drilling, secondary or tertiary recovery projects, construction of gas gathering systems and natural gas liquid plants, and royalty or mineral interests.

Most investments will be structured as overriding royalties carved out of a leasehold interest. The overriding royalty interest is payable from gross revenues, but measured by a percentage of net lease operating income (gross revenues less certain operating costs).

QUALITATIVE EVALUATION:

The fund has seven investments. Five of these investments are in the $10 million to $20 million range. However, there is increasing competition for properties in this price range so Morgan has started evaluating smaller investments. They believe higher returns and increased opportunities are available with $3-$6 million investments. The fund manager believes the market for these smaller investments may be less efficient and the competing buyers may be less aggressive. They expect 20% to 30% of the fund will be invested in transactions of this size.

Morgan has also created a "synthetic" reserves purchase using a $25.2 million private placement of long-term forward options contracts. This investment is a financial instrument which will give the portfolio attributes identical to a long-lived production purchase at a comparable return. Currently, 72% of total commitments have been drawn down.

QUANTITATIVE EVALUATION

COMMITMENT:	$15,000,000
FUNDED COMMITMENT:	$10,800,000
MARKET VALUE OF FUNDED COMMITMENT:	$13,269,788
CASH DISTRIBUTIONS:	$ -0-
INCEPTION DATE(S):	May 1988
INTERNAL RATE OF RETURN (IRR): (annualized, since inception)	16.8%

DIVERSIFICATION PROFILE
(as of June 30, 1990)

INVESTMENT	TYPE	% OF COST
1. Petrocorp - Austin Properties	Gas	12
2. British Petroleum - Prudhoe Bay	Oil	28
3. Laredo Ranch Royalties	Gas	20
4. Kaiser Francis - Wyoming	Gas	16
5. Petrocorp - TMC Properties	Gas	18
6. Twin Montana - Conley Field	Oil	6

STAFF COMMENTS AND RECOMMENDATIONS:

The Alternative Investment Committee and staff have been satisfied with J.P. Morgan's operation and performance to date. Additional investments with J.P. Morgan will be considered, when appropriate.

ATTACHMENT F

ANNUAL REVIEW SUMMARY
AMGO I, II, IV, & V
February 5, 1991

MANAGER REPRESENTATIVES: John Hill

SBI ASSETS UNDER MANAGEMENT: $43,742,634

BACKGROUND AND DESCRIPTION:

The general partner and manager of AmGO I, II, IV, and V is First Reserve Corp. The general partner's strategy is to create a diversified portfolio of oil and gas investments. The portfolio is diversified by location, geological structure, investment type, and operating company. AmGO I, II, IV and V were formed in July 1981, December 1982, May 1988, and May 1990 and have terms of twenty, nineteen, ten and ten years, respectively.

QUALITATIVE EVALUATION:

First Reserve continued to be very active in the management of the AmGO funds during 1990. SBI's investment in the fund are spread over 15 portfolio companies. Following are fund highlights:

- o Funds I and II are invested in many of the same portfolio companies. The total return achieved by each in 1990 was 10.4% and 15.1%, respectively. (Disproportionate weighting of individual investments accounts for the return disparity). The primary reasons for the increase in value in 1990 were asset sales at higher prices than reflected in 1989 valuations and continued improvements in several key portfolio holdings. Portfolio activity was dominated by efforts to build long-term values through strategic acquisitions and operating improvements. Two investments were sold during the year at a profit.

- o Fund IV is now fully invested. Fund V closed in May 1990 and has drawn down 60% of its commitments. The investment in these two funds have enabled First Reserve to acquire a substantial oil and gas property out of a lengthy Chapter 11 bankruptcy proceeding. This investment provides considerable upside potential due to favorable acquisition cost and the development of some of its unexploited resource properties.

QUANTITATIVE EVALUATION

COMMITMENT:	$51,100,000			
FUNDED COMMITMENT:	$43,742,634			
MARKET VALUE OF FUNDED COMMITMENT:	$35,309,076			
CASH DISTRIBUTIONS:	$ 5,679,559			
INCEPTION DATE(S):	AmGO I Sept. 1981	AmGO II Feb. 1983	AmGO IV May 1988	AmGO V May 1990
INTERNAL RATE OF RETURN (IRR): (annualized, since inception)	-5.4%	2.4%	6.9%	0.0%

DIVERSIFICATION PROFILE

INVESTMENT TYPE

Property Interests	27.3%
Loans	26.0%
Equity	46.7%

INDUSTRY SECTOR

Oil & Gas Properties	24.1%
Marketing & Distributions	15.8
Services & Manufacturing	37.8
Cash	22.3

STAFF COMMENTS AND RECOMMENDATIONS:

The Alternative Investment Committee and staff have been satisfied with AmGO's operation and performance to date. Additional investments with AmGO will be considered, when appropriate.

ANNUAL REVIEW SUMMARY
NORWEST VENTURE PARTNERS
January 29, 1991

MANAGER REPRESENTATIVES: Daniel J. Haggerty, John Whaley

SBI ASSETS UNDER MANAGEMENT: $10,000,000

BACKGROUND AND DESCRIPTION: Norwest Venture Capital Management, a wholly owned subsidiary of Norwest Corp., is the general partner and manager of the partnership. Norwest Venture Partners focuses on high technology companies in the early stages of corporate development. However, the portfolio also includes investments in expansion stage firms and is diversified by the location and industry type. Norwest Venture Management has offices in Minneapolis, Phoenix, Portland, and Boston. Northwest Venture Partners I was formed in January 1984 and has a term of ten years.

QUALITATIVE EVALUATION:

At the partnership annual meeting, the decision was made to return prorata $8 million of unexpended capital to the limited partners because no new investments are expected. The total portfolio is expected to experience a less than originally expected rate of return to the partners. Returns have been hampered, in part, by the poor performance of computer hardware companies, an area where Norwest has concentrated a significant portion of its portfolio.

Currently, Norwest is focusing its efforts on venture funding sponsored by its parent company, Norwest Corp., and does not anticipate raising any additional funds from other investors.

QUANTITATIVE EVALUATION

COMMITMENT:	**$10,000,000**
FUNDED COMMITMENT:	**$10,000,000**
MARKET VALUE OF FUNDED COMMITMENT:	**$ 6,256,981**
CASH DISTRIBUTIONS:	**$ 2,466,686**
INCEPTION DATE(S):	**Jan. 1984**
INTERNAL RATE OF RETURN (IRR): (annualized, since inception)	**-3.0%**

DIVERSIFICATION PROFILE

LOCATION	PERCENTAGE
West	41.0%
East	33.0
Midwest	26.0
	100.0%

STAGE OF DEVELOPMENT	PERCENTAGE
Seed/Startup	50.0%
Second Stage	27.0
Expansion	23.0
	100.0%

INDUSTRY	PERCENTAGE
Computer Related	36.0%
Medical Related	24.0
Industrial Products & Svcs.	15.0
Environmental Related	7.0
Consumer Related	4.0
Other	14.0
	100.0%

STAFF COMMENTS AND RECOMMENDATIONS:

The Alternative Investment Committee and staff are not satisfied with Norwest's operation and performance to date.

Tab H

DATE: March 4, 1991

TO: Members of the State Board of Investment

FROM: Task Force on South Africa

The South Africa Task Force met on January 30, 1991 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
Lisa Rotenberg 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
Elaine Voss Deputy Secretary of State	Secretary of State's Representative

The Private sector and public employee representative seats on the Task Force are vacant.

CURRENT BOARD POLICY

The Board's resolution dated March 3, 1989 requires that:

- 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.).

- The SBI will continue to focus the divestment program on the SBI's actively managed stock portfolios.

- The SBI will seek to divest all affected holdings by March 1, 1991. If a company is added to the restricted list after March 1989, the SBI will seek to divest the holding within two years from the date of the addition.

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.

More information on companies affected by the resolution and the status of U.S. sanctions against South Africa is in Attachments A and B.

PROGRESS TOWARD DIVESTMENT

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

End of Month	Companies	Shares
February 1989	21	1,914,400
February 1990	8	585,550
December 1990	3	108,698
Reduction from March 1990 to December 1990	5	476,852 (81.4%)
Cumulative Reduction Since March 1, 1989	18	1,805,702 (94.3%)

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.

One of the three remaining companies was added to the restricted list December 1989. The target date for divestment through attrition for this holding is therefore December 1991. The other two companies remaining were purchased by a manager who, in compliance with the resolution, submitted to staff a letter stating their belief that not to purchase the stocks may violate their fiduciary responsibility.

TASK FORCE ASSESSMENT AND ACTIONS

The Task Force agreed that the SBI's present policy of divestment through attrition does not require further action by the Board at this time.

Christie Eller, Assistant Attorney General and SBI's legal counsel, advised the Task Force that the SBI should formally re-establish the Task Force to assure that the requirements of Minnesota Statutes sections 15.014 and 15.059 are met. A resolution to accomplish this is attached.

If the Task Force is re-established it intends to meet on at least an annual basis to monitor implementation of the resolution and to respond to any change in the status of apartheid.

The Task Force also agreed that staff recommend candidates to the Board at its June 1991 meeting to fill the two vacancies on the Task Force.

RECOMMENDATION

The Task Force recommends that the SBI adopt the attached resolution concerning the status of the Task Force on South Africa. The Task Force also recommends that the SBI direct the Executive Director to recommend candidates to the Board at its June 1991 meeting to fill the two vacancies on the Task Force.

ATTACHMENT A

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. However, the rate of corporate withdrawals has slowed markedly in the last 2 to 3 years. IRRC reports that 40 companies sold their South African assets in 1985; 50 did so in 1986; 57 in 1987; 25 in 1988; but only 18 withdrew in 1989 and 10 in 1990.

Public and Private Companies
with Direct Investment in South Africa

March 1986	267
December 1987	163
December 1989	124
December 1990	114

As of February 1990, IRRC identified 74 publicly traded companies with direct investments in South Africa.

ATTACHMENT B

STATUS OF U.S. SANCTIONS AGAINST SOUTH AFRICA

According to the IRRC, given the changes in South Africa since February 1990, both the Bush Administration and the Congress have taken a "wait-and-see" attitude towards South Africa. The Congress and the Administration have decided that the United States will make no changes in current sanctions until the South African government meets the conditions set forth in the 1986 Comprehensive Anti-Apartheid Act (CAAA).

Section 311 of the CAAA delineates criteria the South African government must meet before President Bush may consider lifting sanctions. These criteria are:

1. Release all political prisoners, detainees and Nelson Mandela.

2. Repeal the State of Emergency and release all detainees held under it.

3. Un-ban democratic political parties and permit South Africans of all races to form political parties, express political opinions and otherwise participate in the political system.

4. Repeal the Group Areas Act and the Population Registration Act.

5. Agree to enter into good faith negotiations with "truly representative" black groups.

Section 311 of the CAAA also provides the U.S. President the right to "modify" or "suspend" sanctions if the South African government:

- fulfills condition 1 above; that is, releases all political prisoners, detainees and Nelson Mandela,

- fulfills three of the four remaining criteria, and

- has made "substantial progress towards dismantling the system of apartheid and establishing a non-racial democracy."

The IRRC reports that the State Department says Bush believes the South African government has met fully the second, third, and fifth conditions of the act. In reports to the Congress required by the CAAA, the Bush administration has said the South African government "has clearly made substantial progress toward dismantling apartheid and establishing a non-racial democracy."

IRRC reports that sanctions proponents in the Congress and their supporters in the anti-apartheid movement believe the South African government has met fully only provision two and met partially provisions one, three, and five. IRRC reports that these groups agree with the African National Congress and its allies that South Africa has not seen "irreversible change" and that the South African government has yet to make "substantial progress" toward dismantling apartheid and establishing a non-racial democracy. IRRC further reports that sanctions supporters in Congress believe that if President Bush begins to modify sanctions he will have a "battle."

RESOLUTION OF THE MINNESOTA STATE BOARD OF INVESTMENT

WHEREAS, the Minnesota State Board of Investment ("MSBI") has previously authorized the formation of an Advisory Task Force on Divestment; and

WHEREAS, pursuant to Minn. Stat. § 15.059, subd. 6, advisory task forces expire two years after the first members are appointed and the appointing authority is permitted to create another task force to continue the work of a task force which has expired; and

WHEREAS, the MSBI desires to establish another task force to continue the work of the Advisory Task Force on Divestment.

NOW, THEREFORE, BE IT RESOLVED THAT:

1. The MSBI hereby authorizes the formation of the South Africa Task Force composed of a representative selected by each member of the MSBI and at least one representative from the Minnesota corporate community, one representative from a Minnesota public employee labor group and one representative from a public employee retirement group.

2. The task force is charged with monitoring implementation of the resolution of the MSBI on South Africa, as amended and restated, and to advise the MSBI of its recommended response to any change in the status of apartheid policies of the Republic of South Africa.

3. To assist in the implementation of this resolution, the MSBI directs its Executive Director to make recommendations to the board of candidates to fill the Minnesota corporate community representative, Minnesota public employee labor group representative, and Minnesota public employee retirement group representative positions on the Advisory Task Force.

4. This resolution shall take affect immediately.

Dated this _____ day of March, 1991.

By ______________________________

Title ____________________________

Date ____________________________

Tab I

COMMITTEE REPORT

DATE: March 4, 1991

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

FROM: Assigned Risk Plan Manager Selection Committee

At its meeting on December 18, 1990, the SBI asked that a selection committee be formed to recommend one or more finalists for the Assigned Risk Plan.

The members of the Assigned Risk Manager Selection Committee are:

Peter Sausen, Chair	Governor's Representative
Christie Eller	Attorney General's Representative
John Manahan	Treasurer's Representative
Lisa Rotenberg	Auditor's Representative
Elaine Voss	Secretary of State's Representative
James Eckmann	IAC Representative
Jan Yeomans	IAC Representative

A summary of the selection process and the Committee's recommendation follows.

1) Review of all managers on file.

   SBI staff have information on file from more than 250 managers. These firms were identified through one or more of the following sources:

   - firms identified from directories or profiles of investment management organizations.
   - referrals from Board members, IAC members, consultants and other contacts.
   - response to the SBI's quarterly announcement in the State Register.
   - inquiries directly from money management firms.

All firms were reviewed against the following broad requirements:

- o The firm must offer "balanced management" (provide both stock and bond management).
- o The firm must have at least $250 million under management. The size cut off insures that the Assigned Risk Plan would comprise no more than 50% of the firm's asset base.

This process identified a list of 93 firms as potential candidates.

2) <u>Request for additional information</u>

Staff sent a questionnaire requesting additional information to 31 firms (see Attachments A and B). These firms met one or both of the following requirements:

- o The firm has experience in asset/liability matching
- o The firm is based in Minnesota

Twenty-nine (29) firms responded. Each response was reviewed against the following criteria:

- o Experience with both stock and bond management
- o Extent of the firm's experience in asset/liability management
- o Extent of the firm's systems and analytic capabilities
- o Ability to address the firm's investment approach to the unique characteristics of the Assigned Risk Plan

3) <u>Interviews</u>

In addition to the incumbent, Voyageur Asset Management, six (6) firms were selected for interviews based on their questionnaire responses:

Equitable Capital Management Corporation
Fidelity Management & Research Company
Goldman Sachs & Company
IDS Advisory Company
J.P. Morgan Investment Management
Pacific Investment Management Company

In preparation for the interview, each firm was given financial and actuarial data concerning the Assigned Risk Plan and directed to prepare an investment proposal for the portfolio. Each firm was asked to:

- o Identify the unique features of the Assigned Risk Plan as compared to a private workers compensation insurer.
- o Propose a policy asset mix for the portfolio.
- o Describe the transition, if any, from the current portfolio to the desired portfolio.
- o Describe the construction of the benchmark(s) appropriate to the liabilities and policy asset mix chosen.

4) <u>Selection of recommended candidate</u>

The Committee compared each firm's response to the above issues and concluded that several of the firms were very well qualified to handle the assignment.

The consensus of the Committee was that both IDS Advisory and Fidelity Management Trust Company were equally qualified and best able to:

- o Provide the systems and analytical resources to aid in the development of an appropriate asset policy mix.
- o Tailor an investment strategy that addresses the unique features of the Assigned Risk Plan.

The Committee then considered the following factors relevant to the selection of a manager for the Assigned Risk Plan:

- o Except for the investment portfolio, the Minnesota Department of Commerce is responsible for the operation and control of the Assigned Risk Plan. Commerce currently contracts with a number of local firms to provide services in this regard. It is the Committee's opinion that a local firm could more easily interface with Commerce and its contract providers.
- o The Committee also expressed concern that awarding Fidelity the contract for the Assigned Risk Plan could reduce the Board's flexibility to expand Fidelity's role in the Basic Funds. Fidelity currently manages approximately $500 million in the Basic Funds bond segment. By adding the assets of the Assigned Risk Plan ($270 million), Fidelity could well be managing over $1 billion in the not too distant future.

  Based on these additional considerations the Committee recommends IDS Advisory be retained by the SBI to managed the Assigned Risk Plan.

RECOMMENDATION:

The Committee recommends that the SBI authorize its executive director, with assistance from SBI's legal counsel, to negotiate and execute a contract with IDS Advisory to manage the assets of the Assigned Risk Plan for a period of two (2) years and to negotiate and execute any necessary contractual amendments to provide custody of the assets.

ATTACHMENT A

ASSIGNED RISK PLAN
FIRMS THAT RECEIVED QUESTIONNAIRES

FIRM	LOCATION
Bankers Trust Company	New York, NY
BEA Associates	New York, NY
Bear Stearns Asset Management	New York, NY
CIGNA Asset Advisers, Inc.	Bloomfield, CT
The Clifton Group	Minneapolis, MN
Duff & Phelps Investment Management Company	Chicago, IL
Equitable Capital Management Corporation	New York, NY
Fidelity Management & Research Company	Boston, MA
First Asset Management	Minneapolis, MN
First Boston Asset Management Corporation	New York, NY
Goldman, Sachs & Company	New York, NY
IDS Advisory Group	Minneapolis, MN
Independence Investment Associates	Boston, MA
Investment Advisers, Inc.	Minneapolis, MN
J.P. Morgan Investment Management, Inc.	New York, NY
Lehman Ark	New York, NY
Lincoln Capital Management	Chicago, IL
Mellon Bond Associates Corporation	Pittsburgh, PA
Miller Anderson & Sherrerd	Conshohocken, PA
MIMLIC Asset Management Company	St. Paul, MN
NCM Capital Management Group, Inc.	Durham, NC
Norwest Bank Minnesota	Minneapolis, MN
Pacific Investment Management Company	Newport Beach, CA
Piper Capital Management Incorporated	Minneapolis, MN

ATTACHMENT A (con't)

Sanford C. Bernstein & Company, Inc.	New York, NY
SIT Investment Associates	Minneapolis, MN
State Street Bank & Trust	Boston, MA
Trust Company of the West	Los Angeles, CA
Voyageur Asset Management	Minneapolis, MN
Washington Square Capital, Inc.	Minneapolis, MN
Weiss Peck & Greer Investment Management	Chicago, IL

ATTACHMENT B

MINNESOTA STATE BOARD OF INVESTMENT
ASSIGNED RISK PLAN ASSETS
INVESTMENT MANAGER QUESTIONNAIRE

A. BACKGROUND DATA

Name of Firm: ______________________________

Address: ______________________________

____

____

Telephone: ______________________________

Contact: ______________________________

1. Date business commenced.

2. Affiliation with other firms (i.e., parent management companies, insurance companies, brokerage firms, investment banking firms, or other entities).

3. What is the ownership structure of the firm?

4. Is the firm registered as an investment advisor under the Investment Advisors Act of 1940; a bank, as defined in the act; or an insurance company qualified to act in such capacity under the laws of Minnesota and one other state?

5. The SBI is looking for managers who have clearly demonstrated their ability to build and manage portfolios within an asset/liability framework.

   a. What capabilities does your firm have that would lend itself to asset/liability management?

   b. Does your firm currently manage funds for insurance companies, banks, thrifts, or pension funds within an asset/liability framework? If so, briefly describe.

   c. Have you worked with clients to estimate liabilities? If so, how was the liability stream determined and what technical assistance did your firm provide?

6. Please provide specific information about your client base. Use the following tables to organize your response.

   a. Total Client Base

   For all accounts under management as of December 31, 1990 provide the following information:

	# of Accounts	% Fully Discretionary	Assets ($ Mil.) Total	Stocks	Bonds	Other
Tax Exempt						
Taxable						
Total						

   b. Asset/Liability Related Accounts Only

   Asset breakdown by number of accounts:

	12/31/90	12/31/89	12/31/88	12/31/87	12/31/86
Under $10 Mil.					
$10-$25					
$25-$50					
$50-$100					
Over $100					

   Largest Account ($ Mil.) as of 12/31/90 ________

   Smallest Account ($ Mil.) as of 12/31/90 ________

7. Please provide information regarding the management structure of your firm. This should include:

   a. The number of professionals and experience levels.

   b. Employee compensation and investment professional turnover history for the last three years.

   c. The proposed manager for the SBI account.

   d. Biographies of all investment professionals that would be involved in managing the account.

B. INVESTMENT PHILOSOPHY

1. Based on the general description of the plan provided, detail how your firm would manage the fund. Please include how the individual bond and stock portfolios would be managed.

C. IMPLEMENTATION PLAN

1. It is likely that projected liabilities will change based upon the receipt of new actuarial data. In general terms, what process or trading methodology would you use to alter the asset mix of the portfolio in response to such changes?

2. How would you handle cash flows on an on-going basis?

D. ENHANCEMENT GOALS AND TECHNIQUES

1. What is your objective for return enhancement, if any?

2. What risk parameters would you alter to add value? (e.g. would you take on active duration risk, yield curve, and/or sector risk?)

3. How will enhancement techniques impact portfolio turnover?

4. Describe your use of derivative securities in the management and/or return enhancement process.

5. Do you loan securities? Would the SBI be able to lend from the portfolio?

6. Would you recommend the use of private placements in the portfolio? Why or why not?

7. Are there any securities you would avoid for this assignment? Why?

E. SYSTEMS CAPABILITIES

1. Describe your internal software capabilities for fund management and monitoring.

F. PERFORMANCE EVALUATION

1. How do you propose to evaluate your effectiveness as a manager for this portfolio?

2. Describe any performance attribution systems used by your firm.

3. What report format would you use to communicate with the SBI investment staff?

G. FEES

1. What is your standard fee schedule?

2. Would you consider a performance fee? If so, how would you design such a fee?

H. PERFORMANCE HISTORY

1. Provide monthly historical performance for your fixed income and common stock investments for the last five calendar years (1986-1990). Monthly data for additional years is highly desirable. Also, for the same periods include the benchmark returns appropriate for each asset class. To the extent possible, you should follow the reporting standards set forth by AIMR in "Report of the FAF Committee for Performance Presentation Standards."

I. OTHER REQUIREMENTS

Minnesota Statutes or SBI contracting procedures require that:

o Your firm must provide a certificate of compliance from the Minnesota Department of Human Rights which approves your affirmative action plan for the employment of minority persons, women and the disabled. (The certification is not required if your firm has had less than 20 full time employees at all times during the previous 12 months.)

o Your firm will allow all books and records relevant to the management of the portfolio to be examined by the SBI and the Office of the Legislative Auditor.

o Your firm will provide appropriate tax identification numbers prior to the start of the contract.

o Your firm will not assign or subcontract any part of the agreement without prior written consent of the SBI.

Will your firm be able to comply with these requirements?

J. SUBMISSION OF RESPONSE

Ten (10) copies of your response must be received no later than January 22, 1991 at the following address:

Douglas Gorence
Manager, External Investments
Minnesota State Board of Investment
Room 105, M.E.A Building
55 Sherburne Avenue
St. Paul, MN 55155
(612) 296-3328