

**MINNESOTA STATE BOARD
OF INVESTMENT
MEETING
December 15, 1993
&
INVESTMENT ADVISORY
COUNCIL MEETING
December 14, 1993**

AGENDA
STATE BOARD OF INVESTMENT
MEETING
Wednesday, December 15, 1993
8:30 A.M. - Room 125
State Capitol - Saint Paul

- | | |
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| | TAB |
| 1. Approval of Minutes of September 16, 1993 and October 27, 1993 | |
| 2. Report from the Executive Director (H. Bicker) | |
| A. Quarterly Investment Review (July 1 - September 30, 1993) | A |
| B. Portfolio Statistics (September 30, 1993) | B |
| C. Administrative Report | C |
| 1. Budget Report | |
| 2. Travel Report | |
| 3. Report from the SBI Administrative Committee (M. McGrath) | D |
| 1. Update on Benefit Increase for January 1, 1994 | |
| 2. Status of FY 1993 Annual Report | |
| 3. Approval of 1994 Legislative Package | |
| 4. Recommendation from the Deferred Compensation Review Committee | |
| 5. Approval of Dissolution of Joint Product Agreement Between NWNL and MML | |
| 4. Report from the Manager Search Committee (P. Sausen) | E |
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| A. Stock and Bond Manager Committee | F |
| 1. Review of Manager Performance | |
| 2. Update on Global Bond Authorization | |
| 3. Results of 1993-96 GIC Bid | |
| 4. Discussion of Manager Search Committee Report | |
| 5. Adoption of the Manager Continuation Policy Paper | |
| D. Alternative Investment Committee | G |
| 1. Results of Annual Review Sessions | |
| 2. Termination of Outstanding Commitment to Great Northern | |
| 3. Recommendation on Disposition of British Petroleum Royalty Trust | |

STATE BOARD OF INVESTMENT

Minutes State Board of Investment September 16, 1993

The State Board of Investment (SBI) met at 9:00 A.M. on Thursday, September 16, 1993 in Room 125, State Capitol, St. Paul, Minnesota. Governor Arne H. Carlson, Chair; Secretary of State Joan Anderson Growe; State Treasurer Michael A. McGrath and State Auditor Mark B. Dayton were present. State Attorney General Hubert Humphrey III was absent.

Mr. Carlson called the meeting to order and the minutes of the June 2, 1993 meeting were approved.

Executive Director's Report

Mr. Bicker, Executive Director, referred Board members to Tab A of the meeting materials. He stated that the Basic Funds had exceeded the inflation rate over the last ten years (Basics Total Fund 11.9% vs. Inflation 3.8%), outperformed the composite index over the five year period (Basics Total Fund 12.3% vs. Composite 11.7%), and outperformed the median fund over the five year period (Basics-Excluding Alternative Assets 13.0% vs. Median Fund 11.9%). Mr. Bicker stated that the Basic Funds' market value decreased by 0.6% for the quarter due to negative net contributions. He noted that this was due primarily to teacher retirements that occurred during the quarter. He stated that at the end of the quarter the Basic Funds were fully invested in international stocks. He reported that the Basic Funds had outperformed the composite index for the year (Basic Total Fund 14.4% vs. Composite 14.0) and median fund for the year (Basics-Excluding Alternative Assets 16.2% vs. Median 13.7%). He stated that the domestic stock segment outperformed its target for the year (Basic domestic stocks 16.2% vs. Wilshire 5000 Adjusted 16.0%) and that the domestic bond segment had outperformed its target for the year (Basic domestic bonds 13.3% vs. Salomon BIG Index 12.0%). He stated that the international stock segment had underperformed since inception (Basic int'l stocks 16.7% vs. EAFE 18.5%). He added that he feels these returns are satisfactory considering the costs that are related to entering the international markets. He noted that the active international managers had underperformed due to their decision to underweight Japan and that there are some currency pricing issues with the index manager that are in the process of being resolved.

Mr. Bicker directed members to the Post Retirement Fund summary and reported that the Fund had increased in value by 5.7% for the quarter. He stated that as of June 30, 1993 the fund had completed the asset allocation transition and had 50% invested in domestic stocks. He stated that the benefit increase in the Post Fund is estimated to be 4% but that a final number will not be available until the December Board meeting. He said that he believes the Post Fund conversion went very well over the course of FY93.

Mr. Bicker reported that the Assigned Risk Plan had outperformed its composite index for the year (Total Fund 8.9% vs. Composite 8.5%). Mr. Bicker stated that as of June 30, 1993 the SBI was responsible for \$22.6 billion in assets.

Executive Director's Administrative Report

Mr. Bicker referred members to Tab C for the year-end reports on budget and travel.

Mr. Dayton congratulated staff on an excellent year and he noted the complexity of some of the transactions and portfolio transitions. Mr. Carlson agreed

Master Custody Review Committee Report

Mr. Sausen reported that ten requests for proposals (RFP's) were sent out to bank and trust companies for master custodial services and that five responses were received and evaluated. He stated that the major evaluation components were in the areas of services, fees and securities lending. He said that the Committee is recommending that State Street Bank and Trust be retained as the master custodian.

In response to several questions by Mr. Carlson, Mr. Sausen stated that First Trust was the lowest bidder, however, he noted that they were eliminated based on their inability to provide the necessary services and because their proposal did not offer fully indemnified securities lending. Mr. Bicker explained the importance having an indemnified lending program. Mr. Carlson questioned the review process on the basis of ability to meet all requirements of a competitive bid and suggested that the bid process might need to be redone. In response to further questions from Mr. Carlson, Ms. Eller, the SBI's legal counsel with the Attorney General's Office, clarified that this is not strictly a competitive bid situation. She stated that the process was a request for services that involved the evaluation of a number of criteria, including the ability to provide a fully indemnified securities lending program. Mr. McGrath moved approval of the Committee's recommendation, as stated in the Committee Report. Ms. Growe seconded the motion. The motion passed.

International Stock Manager Search Committee

Mr. Sausen reported that ten international stock managers were interviewed during the quarter and that the Committee is recommending that the SBI retain the following four firms: Marathon Asset Management; Rowe Price-Fleming International, Inc.; Scudder, Stevens and Clark; and Templeton Investment Counsel. In response to a question from Mr. McGrath, Mr. Bicker stated that the funding level for each manager will be determined in part by what the Board decides regarding the Post Fund allocation to international stocks. He added that approximately \$75 million would be the initial allocation to each manager, not including the potential Post allocation. Mr. McGrath moved approval of the Committee's recommendation, as stated in the Committee Report. Ms. Growe seconded the motion. The motion passed.

Executive Director's Performance Evaluation

Mr. Sausen stated that the Executive Director's performance review forms had been given to all Board members for completion and that Mr. Bicker had received three completed reviews to date.

Joint Report from the Asset Allocation and Stock and Bond Manager Committees

Ms. Yeomans stated that the Committees had considered two complex topics during the quarter: fund constraints and the Manager Continuation Policy. She summarized each of the five categories of constraints and presented the Committees' recommendations regarding the statutory limits and asset allocation policy, as stated in the Committee Report. In response to a question from Ms. Growe on the proposed allocation change for alternative investments in the Basics, Ms. Yeomans stated that she feels that allowing the Funds to commit up to 5% more than the actual target of 15% is appropriate since committed money may or may not be invested quickly, depending on market conditions. She said that it is possible that the level of alternative investments could reach 20%, but she noted that she believes it is highly unlikely. Ms. Yeomans added that commitment levels are a difficult thing to manage but that her own experience is that 5% over the actual target is about the right amount of flexibility that is required.

Ms. Yeomans continued by discussing the global bond recommendation for both the Basic and Post Funds, as stated in the Committee Report. In response to a question from Mr. Carlson, Ms. Yeomans confirmed that the Board is being asked to make a decision on these recommendations. She added that the Committee is also recommending that the Board consider the addition of an international stock allocation for the Post Fund. In response to questions from Ms. Growe on the implementation plan for the Post international segment, Mr. Bicker stated that since four international managers had just been approved at today's meeting, their funding level could be increased up to approximately \$125 million each to cover the Post allocation. He added that the implementation would take place over a couple of quarters. In response to a question from Ms. Growe, Mr. Emkin stated that he agreed with the timing and schedule for the funding of the additional international managers.

A discussion followed clarifying which fund constraint recommendations needed Board action. Mr. Dayton moved approval of the recommendations regarding statutory limits and the asset allocation policy recommendations, as stated in the Joint Committee Report. Ms. Growe seconded the motion. The motion passed.

In reference to the investment restriction recommendation, Mr. Dayton stated that the liquor and tobacco restrictions had already been lifted and he suggested that the restriction on holding American Home Products also be lifted. Ms. Growe noted that she had initiated the American Home Products restriction years ago and she requested additional time to get further information on the company prior to the Board taking any action. Mr. Carlson asked what other restrictions are currently in place. Mr. Bicker stated that the other two policies containing restrictions involve the South Africa policy and the country guidelines in the international program. Mr. Dayton stated that he is in favor of lifting any

restriction that impedes the SBI's performance. He stated that he is willing to wait until the December 1993 meeting to discuss American Home Products and that the South Africa issue will be discussed later in the agenda. He added that he does not believe that the country guidelines in the international area are truly restrictive and that he would be willing to monitor the situation with the new active international managers. After further discussion, the Board members agreed that no Board action was needed at the present time on the active/passive mix recommendation, the investment restrictions recommendation and the operating environment recommendation.

Ms. Yeomans summarized the proposed changes to the Manager Continuation Policy. She stated that the recommendation is for the existing qualitative guidelines to remain the same. She summarized the two recommended changes to the quantitative guidelines: that the value of active management (VAM) charts utilize a rolling 5 year time period for analysis and that the managers provide quarterly commentaries to explain their investment decisions, the impact those decisions had on the SBI's portfolio, and any other pertinent information. Ms. Growe moved approval of the Committee's Manager Continuation Policy recommendations, as stated in the Committee Report. Mr. McGrath seconded the motion. The motion passed.

Asset Allocation Committee

Ms. Yeomans stated that the Committee has one recommendation for the Board involving total fund objectives for the Basic, Post and Combined Funds. She referred members to pages 6 and 7 of the Committee Report for further details on the proposed objectives and the reporting format and pointed out that one of the written objectives would be to outperform the median fund and that an underlying goal would be to place in the top third. Mr. Dayton stated that he feels the SBI's goal and objective should be to rank in the top third of other funds, even though the SBI may not always achieve it. He added that the proposed objectives are just a continuation of the current policy, which he feels is unacceptable. Mr. Carlson said he agreed with Mr. Dayton in principle but that he was wary of setting a written objective that may not be able to be reached. He added that he is pleased to see more private fund data included with the public fund data for comparison purposes and that the reason for the SBI's existence is to add value over the market. Mr. McGrath voiced his approval of the addition of objectives relating to the Combined Funds. In response to a comment from Mr. Carlson, Mr. Bicker stated that the Basic and Post Funds will still be evaluated individually in addition to the Combined Funds evaluation. Mr. Dayton said he would agree to proceed as long as the SBI reports the objective but keeps its eye on the goal. Ms. Growe moved approval of the total fund objectives recommendation, as stated in the Committee Report. Mr. McGrath seconded the motion. The motion passed.

Stock and Bond Manager Committee Report

Ms. Yeomans stated that the Committee is recommending the termination of the contract with Lieber & Company due to poor performance and the firm's growing interest in the mutual fund business. Mr. Dayton moved approval of the Committee's recommendation, as stated in the Committee Report. Ms. Growe seconded the motion. The motion passed.

Ms. Yeomans reported that the Committee is recommending that the contract with State Street Global Advisors, the SBI's international index manager, be renewed. In response to a question from Mr. Carlson, Mr. Bicker confirmed that no conflict of interest exists since State Street Global Advisors is a separate legal entity from State Street Bank and Trust, the SBI's master custodian bank. In response to questions from Mr. Carlson and Ms. Growe, Ms. Yeomans explained the recommendation regarding global bond investing and she confirmed that the proposed recommendation is being considered as a short-term approach which will be re-evaluated within two years. Mr. McGrath moved approval of both recommendations from the Committee, as stated in the Committee Report. Ms. Growe seconded the motion. The motion passed.

Alternative Investment Committee Report

Ms. Yeomans reported that the Committee is recommending a commitment in the limited partnership of Blackstone Capital Partners II, as outlined in the Committee Report. In response to questions from Mr. Carlson, Ms. Yeomans described the fund and the type of investments the fund that will be included. Mr. Bicker reported that the firm has had very strong results with its first fund. Mr. McGrath moved approval of the recommendation, as stated in the Committee Report. Mr. Carlson seconded the motion. The motion passed. (After the meeting, Mr. Dayton asked to be recorded as a "no" vote).

Ms. Yeomans stated that the other recommendation involves an additional investment with an existing real estate manager, Zell/Merrill Lynch. In response to questions from Mr. Carlson, Mr. Bicker stated that the SBI currently has approximately \$400 million invested in the real estate market. He confirmed that the SBI did not participate in the first fund but that the SBI is a participant in the second fund, which has performed very well. In response to a question from Mr. Dayton, Mr. Bicker stated that the SBI is betting on Mr. Zell's organization and their expertise in the real estate market, along with their investment strategy to purchase properties from insurance companies who are being forced to reduce their real estate holdings. In response to a question from Mr. Dayton, Ms. Yeomans confirmed that 3M is participating in this type of venture. She added that one IAC member had abstained from the vote at the IAC meeting due to the member's discomfort with the real estate market in general. Mr. McGrath moved approval of the Committee's recommendation, as stated in the Committee Report. Mr. Dayton seconded the motion. The motion passed.

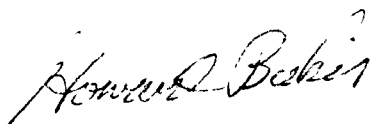
Task Force on Divestment Report

Mr. Sausen reported on the recent developments concerning South Africa and stated that the Task Force is recommending that the Board adopt an amendment that would continue the Board's resolution until free and open elections are held in South Africa. Mr. Dayton voiced his concern about the impact of the amendment on the active international managers. Mr. Bicker stated that the amendment is only valid for a short period, until the free and open elections take place in April 1994. He added that the recommendation of the Task Force also reinforces a manager's ability to communicate with the Board in writing if they believe that not buying a stock is a breach of their fiduciary duty. In

response to a question from Ms. Growe, Mr. Emkin stated that during the international manager search, the managers who were interviewed stated that the SBI's South Africa policy would not be a hindrance to their performance. Mr. Carlson noted his continuing opposition to the SBI's resolution on South Africa. Ms. Growe moved approval of the amendment to the resolution, as stated in the Task Force Report. Mr. McGrath seconded the motion. The motion passed. (Mr. Carlson asked to be recorded as a "no" vote).

The meeting adjourned at 10:30 A.M.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Howard J. Bicker".

Howard J. Bicker
Executive Director

Attachment

**AMENDMENT TO THE RESTATED RESOLUTION
OF THE MINNESOTA STATE BOARD OF INVESTMENT
REGARDING SOUTH AFRICA DATED JUNE 2, 1993**

Concerning Conditions for Rescission of the Resolution

WHEREAS, the State Board of Investment has established the Task Force on Divestment to advise the Board on the implementation of its resolution concerning South Africa, and

WHEREAS, the Task Force on Divestment has monitored events in the country of South Africa and has noted the recent progress toward establishing a multi-racial government, including the announcement of April 27, 1994 as the date for election of a non-racial constituent assembly, and

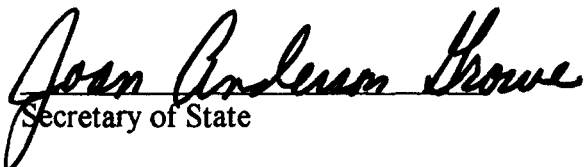
WHEREAS, the Task Force believes that such progress, if continued, will serve to increase the safety and stability of investment in companies doing business with, or operating in, the Republic of South Africa, and

WHEREAS, the amended and restated resolution of the State Board of Investment dated June 2, 1993 does not establish under what conditions implementation of the resolution shall be discontinued, and the Task Force on Divestment has now recommended that the Board establish such conditions,

NOW, THEREFORE, BE IT RESOLVED, that the State Board of Investment amends section 13 of its restated resolution dated June 2, 1993 as follows:

"13. This resolution shall be effective immediately and shall continue until free and open elections are completed in the Republic of South Africa at which time this restated resolution is hereby rescinded. The Task Force on Divestment may recommend to the Board that implementation of the resolution be discontinued before free and open elections are completed if the Task Force determines that other events have transpired which will support the establishment of a multi-racial government in the Republic of South Africa, and which have increased the safety and stability of investments in companies doing business with, or operating in, the Republic of South Africa."

Adopted this 16th day of September, 1993.


Secretary of State

STATE BOARD OF INVESTMENT

**Minutes
State Board of Investment
October 27, 1993**

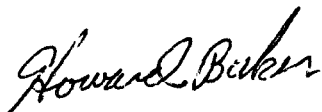
The State Board of Investment (SBI) met at 11:30 A.M. on Wednesday, October 27, 1993 in Room 125, State Capitol, St. Paul, Minnesota. Governor Arne H. Carlson, Chair; Secretary of State Joan Anderson Growe; State Treasurer Michael A. McGrath; State Auditor Mark B. Dayton and State Attorney General Hubert H. Humphrey III were present.

Mr. Carlson called the meeting to order and turned the meeting over to Ms. Growe. Ms. Growe stated that she is recommending that the Board lift its investment restrictions regarding South Africa. She referred members to a resolution (see Attachment A) which lifts the restrictions and discontinues the Task Force on Divestment and moved its approval. Mr. Humphrey seconded the motion. The motion passed.

Ms. Growe referred members to a second resolution (see Attachment B) which rescinds the Board's policy to prohibit investments in the stock of American Home Products due to its infant formula marketing practices. She noted that the company is now supporting the proper initiatives to eliminate the policies in question and she moved approval of the resolution. Mr. Humphrey seconded the motion. The motion passed.

The meeting adjourned at 11:40 A.M.

Respectfully submitted,



Howard J. Bicker
Executive Director

**RESOLUTION OF THE
MINNESOTA STATE BOARD OF INVESTMENT**

**Rescinding the Amended and Restated Resolution Regarding
Investments in Companies Doing Business in South Africa
October 27, 1993**

WHEREAS, the Minnesota State Board of Investment first adopted a resolution concerning investments in companies doing business in the Republic of South Africa on October 2, 1985; and

WHEREAS, the resolution, as most recently amended and restated on September 16, 1993, provides that implementation of the resolution may be discontinued if events have transpired which will support the establishment of a multi-racial government in the Republic of South Africa and which have increased the safety and stability of investments in companies doing business with, or operating in, the Republic of South Africa; and

WHEREAS, a bill to establish a multi-party transitional executive council was enacted by the South African parliament on September 23, 1993 and the date for multi-racial elections has been set for April 27, 1994; and

WHEREAS, Nelson Mandela, President of the African National Congress (ANC), called for all parties to lift the remaining economic sanctions against South Africa in an address before the United Nations Special Committee Against Apartheid on September 24, 1993; and

WHEREAS, in response to the ANC's call to lift economic sanctions, on October 8, 1993, the United Nations General Assembly lifted all bans against South Africa, except the mandatory Security Council arms embargo, and urged its members to start doing business with South Africa immediately; and

WHEREAS, in response to the ANC's call to lift economic sanctions, the US Senate passed the South African Democratic Transition Support Act of 1993 on September 24, 1993 which repeals most remaining economic sanctions in the Comprehensive Anti-Apartheid Act of 1986, removes restrictions related to South Africa on the Export-Import Bank and lifts the ban on direct non-military assistance to the South African government, and similar action in the US House of Representatives is expected by the end of October 1993; and

WHEREAS, following the ANC announcement, President Clinton called for all state and local governments to remove their sanctions and restrictions; and

WHEREAS, institutional investors, including public pension funds in the States of California, Massachusetts, New Jersey and Wisconsin and in the Cities of Los Angeles and New York, are now taking steps to rescind their respective investment restrictions against South Africa previously established by law or policy; and


WHEREAS, the Board finds that these events fulfill the conditions for rescission of the amended and restated resolution; and

WHEREAS, the Advisory Task Force on Divestment was established in accordance with the Board's amended and restated resolution on South Africa and was most recently re-authorized and continued in a separate resolution dated June 2, 1993, and upon rescission of the resolution, the Board will no longer require an such an advisory body;

NOW, THEREFORE, BE IT RESOLVED:

1. The Minnesota State Board of Investment hereby rescinds all provisions of its amended and restated resolution dated September 16, 1993 concerning investments in companies doing business with, or operating in, the Republic of South Africa.
2. The Advisory Task Force on Divestment which was re-established and continued in a separate resolution dated June 2, 1993 to advise the Board on implementation of its resolution on South Africa is hereby discontinued.
3. This resolution shall take effect immediately.

Adopted this 27th day of October, 1993.



Arne H. Carlson, Governor
Chair, Minnesota State Board of Investment

**RESOLUTION OF THE
MINNESOTA STATE BOARD OF INVESTMENT**

**Rescinding Its Investment Prohibition Concerning
American Home Products
October 27, 1993**

WHEREAS, the Minnesota State Board of Investment established a policy to prohibit the purchase of the stock of American Home Products (AHP) due to AHP's infant formula marketing practices in developing countries and re-affirmed the policy on October 9, 1979; and

WHEREAS, in 1991, AHP agreed to stop providing free supplies of infant formula to hospitals in developing countries and the Interfaith Center on Corporate Responsibility subsequently withdrew its shareholder resolution on this issue because it believes that the company now abides by the World Health Organization (WHO) code, and

WHEREAS, in 1991, AHP pledged its support for the WHO/UNICEF "Baby Friendly Hospital Initiative" which seeks to end free and low cost supplies of infant formula to maternity facilities and promulgates criteria for hospital practices which would "protect, promote and support the initiation of successful breast feeding by mothers"; and

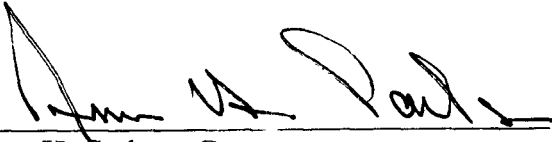
WHEREAS, through the work of UNICEF, WHO, infant formula companies including AHP, and the health ministries of the governments involved, the Initiative has promoted health professional training, breast feeding training and lactation management programs in many developing countries; and

WHEREAS, the Board finds that these actions alleviate its past concerns regarding the infant formula marketing practices of AHP in developing countries;

NOW THEREFORE BE IT RESOLVED:

1. The Minnesota State Board of Investment hereby rescinds its policy prohibiting investments in the stock of American Home Products.
2. This resolution is effective immediately.

Adopted this 27th day of October, 1993.


Arne H. Carlson, Governor
Chair, Minnesota State Board of Investment

**AGENDA
INVESTMENT ADVISORY COUNCIL
MEETING**

**Tuesday, December 14, 1993
2:00 P.M. - SBI Conference Room
Room 105, MEA Building - Saint Paul**

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| 2. Update on Global Bond Authorization | |
| 3. Results of 1993-96 GIC Bid | |
| 4. Discussion of Manager Search Committee Report | |
| 5. Adoption of the Manager Continuation Policy Paper | |
| D. Alternative Investment Committee (D. Veverka) | G |
| 1. Results of Annual Review Sessions | |
| 2. Termination of Outstanding Commitment to Great Northern | |
| 3. Recommendation on Disposition of British Petroleum Royalty Trust | |

STATE BOARD OF INVESTMENT

Minutes Investment Advisory Council Meeting September 15, 1993

The Investment Advisory Council met on Wednesday, September 15, 1993 at 2:00 P.M. in the State Board of Investment (SBI) Conference Room, 55 Sherburne Avenue, St. Paul.

MEMBERS PRESENT: Gary Austin; Dave Bergstrom; John Bohan; Laurie Fiori Hacking; Keith Johnson; Han Chin Liu; Gary Norstrom; Michael Troutman; and Jan Yeomans.

MEMBERS ABSENT: Jim Eckmann; John Gunyou; Ken Gudorf; David Jeffery; Peter Kiedrowski; Malcolm McDonald; Barbara Schnoor; and Deborah Veverka.

SBI STAFF: Howard Bicker; Beth Lehman; Jim Heidelberg; Mike Messen; Deborah Griebenow; Charlene Olson; and Linda Nadeau.

OTHERS ATTENDING: Allan Emkin, Pension Consulting Alliance; Tom Richards, and Ann Posey, Richards & Tierney; Mike Hagman, REAM; Judy Hunt, Public Employees Retirement Association; O.M. (Mike) Ousdigian; Judy Strobel and John Wicklund, Teachers Retirement Association; Robert Whitaker; John Manahan; Christie Eller; Lisa Rotenberg; Peter Sausen; and Elaine Voss.

Executive Director's Report

Mr. Bicker, Executive Director, referred Board members to Tab A of the meeting materials. He stated that the Basic Funds had exceeded the inflation rate over the last ten years (Basics Total Fund 11.9% vs. Inflation 3.8%), outperformed the composite index over the five year period (Basics Total Fund 12.3% vs. Composite 11.7%), and outperformed the median fund over the five year period (Basics-Excluding Alternative Assets 13.0% vs. Median Fund 11.9%). Mr. Bicker stated that the Basic Funds' market value decreased by 0.6% for the quarter due to negative net contributions. He noted that this was due primarily to teacher retirements that occurred during the quarter. He stated that at the end of the quarter the Basic Funds were fully invested in international stocks. He reported that the Basic Funds had outperformed the composite index for the year (Basic Total Fund 14.4% vs. Composite 14.0) and median fund for the year (Basics-Excluding Alternative Assets 16.2% vs. Median 13.7%). He stated that the domestic stock segment outperformed its target for the year (Basic domestic stocks 16.2% vs. Wilshire 5000 Adjusted 16.0%) and that the domestic bond segment had outperformed its

target for the year (Basic domestic bonds 13.3% vs. Salomon BIG Index 12.0%). He stated that the international stock segment had underperformed since inception (Basic int'l stocks 16.7% vs. EAFE 18.5%). He added that he feels these returns are satisfactory considering the costs that are related to entering the international markets. He noted that the active international managers had underperformed due to their decision to underweight Japan and that there are some currency pricing issues with the index fund manager that are in the process of being resolved.

Mr. Bicker directed members to the Post Retirement Fund summary and reported that the Fund had increased in value by 5.7%. He stated that as of June 30, 1993 the fund had completed the asset allocation transition and had 50% invested in domestic stocks. He said that he believes the Post conversion went very well. He stated that the benefit increase in the Post Fund is estimated to be 4% but that a final figure will not be available until the next Board meeting.

Mr. Bicker reported that the Assigned Risk Plan had outperformed its composite index for the year (Total Fund 8.9% vs. Composite 8.5%) He concluded by stating that as of June 30, 1993 the SBI was responsible for \$22.6 billion in assets

Executive Director's Administrative Report

Mr. Bicker referred members to Tab C for the year-end reports on budget and travel

Master Custody Review Committee

Mr. Sausen reported that the Committee had met during the quarter and that ten request for proposals (RFP's) had been sent to various bank and trust companies. He stated that the SBI received five responses to the RFP were received and that the Committee had evaluated the responses based on services, fees, and securities lending. He said that the Committee's recommendation is that the SBI execute a contract with State Street Bank and Trust for a five year period, ending September 30, 1998. In response to a question from Mr. Troutman, Mr. Sausen said the Committee believed that State Street has a proven ability to provide the types of services needed by the SBI. Mr. Bergstrom moved approval of the Committee's recommendation, as stated in the Committee Report. Mr. Troutman seconded the motion. The motion passed.

International Stock Manager Search Committee

Mr. Sausen reported that based on a candidate list developed by staff and the IAC, ten international active stock managers were interviewed during the quarter. He stated that following lengthy discussions by the Committee, four firms were being recommended: Marathon Asset Management; Rowe Price-Fleming International, Inc.; Scudder, Stevens & Clark; and Templeton Investment Counsel.

In response to a question from Mr. Troutman, Ms. Lehman discussed Templeton's recent ownership changes and asset growth. She stated that staff feels comfortable with the new leadership and that staff believes that the firm's investment philosophy and approach will continue with the current professionals. In response to a question from Mr. Liu, Mr.

Bicker said that the four firms chosen all had the capacity to handle additional assets, if necessary, which would eliminate the need to conduct another international search right away if the recommendation to add international stocks to the Post Retirement Fund is approved.

Ms. Lehman noted that the Committee had difficulty in making their decision because each of the ten firms had strong support from at least two Committee members. She said the dissension on the Committee was not due to a lack of good candidates from which to choose. Mr. Sausen confirmed the observation. In response to a question from Mr. Troutman and Ms. Yeomans, Mr. Emkin stated that the Committee's discussion had been fascinating and that he believes that the managers being recommended complement each other and fit in well with the existing managers. In response to a question from Ms. Yeomans, Mr. Bicker said that staff's choices may have originally been different from the Committee's but that staff was very comfortable with the managers selected. He also agreed with Mr. Emkin that the managers should provide broad coverage of the international markets since they represent a variety of investment approaches.

In response to questions from Mr. Bohan, a discussion followed on the difficulty of determining the impact of Japan's market on managers' performance. Mr. Emkin noted that he feels it should not be viewed as a manager problem, but instead as a benchmark problem. Ms. Lehman stated that the Committee did look at performance attribution data from InterSec but she added that firm conclusions are not possible.

Mr. Johnson moved approval of the Committee's recommendation of the four active international managers, as stated in the Committee Report. Ms. Hacking seconded the motion. The motion passed.

Asset Allocation and Stock and Bond Manager Joint Committee Report

Mr. Bohan referred members to Tab F of the meeting materials and stated that the first part of the report deals with Mr. Dayton's request to evaluate the impact of fund constraints on the performance of the Basic and Post Retirement Funds. He referenced the lengthy meetings that had been held over the summer on these issues.

Mr. Bohan then summarized the recommendations concerning statutory limits and explained the recommendations associated with the asset allocation policy in the areas of international stocks, alternative assets and global bonds. In response to a request from Mr. Bohan, Mr. Bicker explained the term "yield oriented" alternative assets and stated that it involves looking at various types of debt securities that have a higher level of current income, which would be advantageous for retirees in the Post Fund. Mr. Bicker also clarified for members that the increased exposure in alternative assets for the Basics and Post Funds would be phased in gradually, with the money remaining in bonds until it is invested.

Mr. Bohan then stated that the Committee's recommendation is to re-affirm the SBI's existing policies regarding active/passive mix. He stated that the recommendation

involving investment restrictions is a re-affirmation of a motion made by the IAC in December 1992. He added that the recommendation dealing with the SBI's operating environment is that no changes are needed at this time.

Ms. Yeomans suggested that the floor be opened for discussion on the fund constraint recommendations. In response to a question from Mr. Troutman, Mr. Bicker stated that clarification will be added in the rebalancing guidelines stating that current alternative investment positions cannot be liquidated if the asset class percentage exceeds the policy. Mr. Bicker stated that staff feels strongly that the Post Fund needs to be diversified beyond stocks and bonds, which could be accomplished through the addition of alternative investments to the Fund. He added that staff believes it would be imprudent not to provide this additional diversification.

In response to a request from Mr. Troutman, Ms. Yeomans stated that she would consider motions on each of the recommendations separately. Mr. Liu moved approval of the Committee's recommendation relating to statutory limits, as stated in the Committee Report. Mr. Johnson seconded the motion. The motion passed. Mr. Norstrom moved approval of the Committee's recommendation regarding the asset allocation policy, as stated in the Committee Report. Mr. Bergstrom seconded the motion. The motion passed. Mr. Troutman moved approval of the recommendation to re-affirm the existing policies on the active/passive mix, as stated in the Committee Report. Mr. Johnson seconded the motion. The motion passed.

Mr. Johnson moved approval of the Committee's recommendation to re-affirm the IAC's investment restriction motion to remove all investment restrictions, as stated in the Committee Report. Mr. Norstrom second the motion. Mr. Troutman stated that he feels the current wording is too stringent and that he would abstain from voting on this motion as currently worded. He said that as a fiduciary he can be comfortable with restrictions if they do not have a negative impact on risk and return. Mr. Bergstrom stated that he would vote against the motion to reflect the MSRS Board support of the new international investment guidelines or restrictions. The motion, as stated earlier, passed with Mr. Troutman abstaining and Mr. Bergstrom voting in opposition. Ms. Hacking moved approval of the last fund constraint recommendation, involving the SBI's operating environment, as stated in the Committee Report. Mr. Johnson seconded the motion. The motion passed.

Mr. Bohan reported that the Manager Continuation Policy had been the focus of extensive discussions and evaluation by members of the joint committee over the last quarter. He stated that the proposed policy makes no changes to the qualitative guidelines, however, he noted that several changes are being recommended to the quantitative guidelines. He reviewed each of the proposed changes, as discussed in the Committee Report. Mr. Bergstrom stated that he feels the proposal improves the exchange of information regarding the managers without triggering any terminations at specific points in time.

Ms. Yeomans asked for discussion on the proposed qualitative guidelines. Hearing none, she moved on to request discussion on the proposed quantitative guidelines. Mr. Johnson stated that he preferred having the manager meetings at the SBI offices so members could attend. Mr. Bicker replied that staff feels that its very important to meet with each of the managers at least annually and he stressed the importance of having the flexibility to have the meetings either at the SBI or at the managers place of business, where staff can view the manager's entire operation. Mr. Bicker added that any time members have concerns, a meeting can be arranged to have the manager come here to address those concerns. Mr. Bergstrom moved approval of the Committee's recommendation on the Manager Continuation Policy, as stated in the Committee Report. Mr. Bohan seconded the motion. Ms. Hacking voiced concern over not producing a value of active management (VAM) graph on a new manager for five years. Mr. Bicker stated that at a minimum of 24 months of data is needed to draw a graph and he expressed his concern about getting a distorted view of a manager's performance if performance data prior to the manager's retention date by the SBI is included immediately. He added that if members feel strongly about waiting five years, staff could produce the graphs after 24 or 36 months have passed. A discussion followed on possible monitoring alternatives for new managers during this initial period. Mr. Bergstrom accepted a friendly amendment to his motion from Ms. Hacking to delete the following sentence from the recommendation: "Graphs will not be produced for the first five years of a manager's tenure with the SBI." It was agreed that this issue would be referred to the Stock and Bond Manager Committee for further discussion.

Ms. Hacking also stated that she would like to see aggregate active manager performance reported. Mr. Bicker replied that staff feels the addition of these numbers would be irrelevant and confusing since it does not reflect how the SBI has chosen to construct its equity program. Mr. Troutman stated that he agrees with staff. He said that it has not been the SBI's goal to build an active manager pool that is balanced across the Wilshire 5000 and that the SBI has relied on the tilted index fund to provide that balance. He noted, however, that if members have questions about the amount of value added by the active managers, that those questions would be more appropriately addressed by the Stock and Bond Committee. Mr. Bicker restated his view that both the active and passive segments need to be analyzed on a combined basis in order to evaluate the impact of the tilted index fund. Ms. Hacking said she feels both sets of numbers might provide valuable information, especially in future years when the SBI's policies may be different. Mr. Richards stated that he also believes that the aggregate active/passive figure should be the focus of the segment evaluation. A discussion followed on possible modifications to the reporting format of Attachment C of the Committee Report. Ms. Hacking agreed that she felt comfortable that the Stock and Bond Manager Committee would address her concern. The amended motion on the Manager Continuation Policy as made earlier by Mr. Bergstrom passed.

Asset Allocation Committee Report

Mr. Bohan referred members to Tab G of the meeting materials and updated members on the Post Fund transition. He stated that the Committee reconsidered the issue of total

fund objectives for the Basic, Post and Combined Funds. He summarized the proposed total fund objectives and referred members to the attachments contained in the Committee Report to view examples of the proposed reporting format. He also stated that the Committee believes that an appropriate performance goal is to be in the top third of all pension funds, if the Board removes all investment restrictions/constraints and adopts a more aggressive asset allocation for the Combined Funds. Mr. Liu moved approval of the Committee's recommendation, as stated in the Committee Report. Mr. Johnson seconded the motion. The motion passed.

Stock and Bond Manager Committee Report

Mr. Bergstrom reviewed the July 1993 manager allocation information and the managers' quarterly performance. He stated that the Committee had discussed the performance of three managers: GeoCapital, Lieber & Co. and Lynch & Mayer. He said that the Committee believes GeoCapital and Lynch & Mayer should continue to be monitored, but that no action is required at this time. He reported that the Committee is recommending the termination of Lieber's contract due to poor performance and, more importantly, due to staffing changes and a continuing shift away from institutional clients into the mutual fund area. Mr. Norstrom moved approval of the recommendation to terminate Lieber, as stated in the Committee Report. Mr. Bergstrom seconded the motion. In response to a question from Mr. Liu, Mr. Bicker stated that Lieber's portfolio would be absorbed into the index fund. The motion passed.

Mr. Bergstrom reported that the Committee is recommending that the SBI renew a contract with State Street Global Advisors for international passive stock management services. He noted that the firm had provided the SBI with some significant cost savings through cross-trading opportunities during the recent transition. In response to a question from Ms. Yeomans, Mr. Bicker confirmed the contract period will be for three years. Mr. Norstrom approved the Committee's recommendation, as stated in the Committee Report. Mr. Troutman seconded the motion. The motion passed.

Mr. Bergstrom reported that the Committee is recommending that four of the current active bond managers (BEA Associates, Miller Anderson & Sherrerd, Standish Ayer and Wood, and Western Asset Management) be authorized to invest up to 10% of their respective portfolios in non US bonds, as outlined in the Committee Report. In response to a question from Ms. Yeomans, Mr. Bicker stated that if each of the managers were at 10%, it would represent less than 5% of the total bond segment. Mr. Norstrom added that all four firms are experienced in global bond investing and that the Committee felt very comfortable with the firms being recommended. Mr. Johnson moved approval of the Committee's recommendation, as stated in the Committee Report. Mr. Liu seconded the motion. The motion passed.

Alternative Investment Committee Report

Due to the absence of the Committee Chair, Ms. Veverka, Mr. Bicker presented the report. He stated that the previously reported legal action against First Reserve had been favorably resolved and that the company would now be able to resume normal business.

Mr. Bicker stated that the Committee is recommending an investment in Blackstone Capital Partners II and summarized the information in the Committee report. He also reported that the Committee is recommending an additional investment with an existing real estate manager, Zell/Merrill Lynch, in their Opportunity Partners III Fund and he described their investment philosophy. Mr. Bergstrom moved approval of the Committee's recommendation to invest in Blackstone Capital Partners II, as stated in the Committee Report. Mr. Austin seconded the motion. In response to a question from Mr. Liu, Mr. Bicker said that the Blackstone group has existed since 1985 and he reviewed the management structure of the firm. He added that Mr. Zell has been a major presence in the real estate market for many years and has an excellent reputation. The motion passed. Mr. Liu moved approval of the Committee's recommendation to invest in the Zell/Merrill Lynch Fund, as stated in the Committee Report. Mr. Norstrom seconded the motion. Mr. Bohan commented that he is not currently making additional investments in the real estate market, but that if he were, he would invest in the Zell Fund. The motion passed with Mr. Bohan abstaining on the basis of not investing in this asset category.

Task Force on Divestment

Mr. Bicker stated that the meeting materials also included a report from the Task Force on Divestment. He said he would gladly respond to any questions members have, but that no action was required on the part of the IAC. In the absence of any questions, the meeting was adjourned at 4:00 P.M.

Respectfully submitted,



Howard J. Bicker
Executive Director

Tab A

RETURN OBJECTIVES

Period Ending 9/30/93

COMBINED FUNDS: \$18.6 Billion	Return (1)	Compared to Objective
Provide Real Return (10 yr.)	12.5%	8.8 percentage points above target
Provide returns that are 3-5 percentage points greater than inflation over moving 10 year periods.		
Exceed Median Fund (5 yr.)	13.0%	0.4 percentage points above/below target Rank: 37th percentile (2)
Outperform the median fund from a universe of public and corporate funds with a balanced asset mix over moving 5 year periods.		
Exceed Composite Index (5 yr.)	13.0%	0.8 percentage points above target
Outperform a composite market index weighted in a manner that reflects the actual asset mix of the Combined Funds over moving 5 year periods.		

BASIC RETIREMENT FUNDS: \$9.9 Billion	Return	Compared to Objective
Exceed Composite Index	13.0%	0.8 percentage points above target
Outperform a composite index weighted in a manner that reflects the long-term asset allocation of the Basic Funds over moving 5 year periods.		

POST RETIREMENT FUND: \$8.7 Billion	Return(3)	Compared to Objective
Exceed Composite Index	3.6%	0.5 percentage points above target
Outperform a composite index weighted in a manner that reflects the long-term asset allocation of the Post Fund over moving 5 year periods.		

(1) Reflects performance of Basic Funds only through 6/30/93, Combined Funds thereafter.

(2) The SBI's stated performance objective is to rank in the top half (above 50th percentile) of the comparative universe. The SBI will strive to achieve performance which ranks in the top third (above 33rd percentile).

(3) Since asset allocation transition was completed, 7/1/93.

ACTUARIAL VALUATIONS

MSRS, TRA, PERA General Plans June 30, 1992

	Active (Basics)	Retired (Post)	Total (Basics & Post)
Liability Measures			
1. Current and Future Benefit Obligation	\$14.7 billion	\$5.7 billion	\$20.4 billion
2. Accrued Liabilities	10.5	5.7	16.2
Asset Measures			
3. Current and Future Actuarial Value	\$14.0 billion	\$5.7 billion	\$19.7 billion
4. Current Actuarial Value	7.2	5.7	12.9
Funding Ratios			
Future Obligations vs. Future Assets (3 ÷ 1)	95%	100%	97%
Accrued Liabilities vs. Current Actuarial Value (4 ÷ 2)	69%	100%	80%*

* 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 **79%** for the Basics, **100%** for the Post and **87%** 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

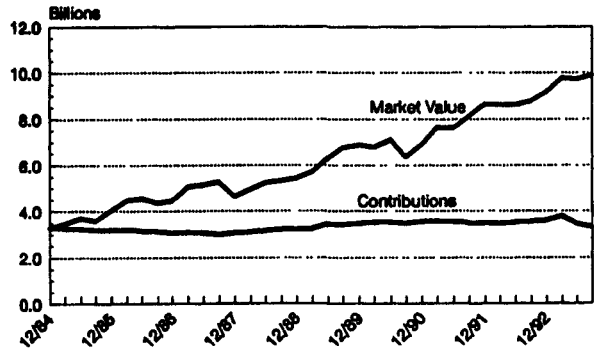
EXECUTIVE SUMMARY
Basic Retirement Funds

Asset Growth

The market value of the Basic Funds increased 1.7% during the third quarter of 1993. Positive investment returns exceeded net withdrawals for the period.

Asset Growth
During Third Quarter 1993
(Millions)

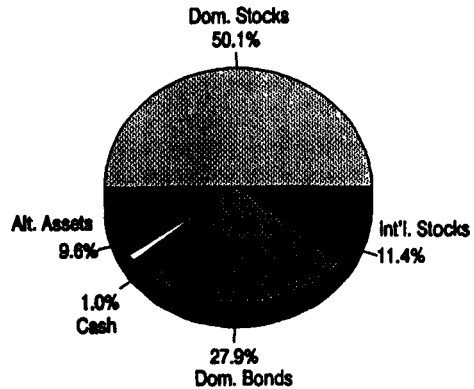
Beginning Value	\$9,723
Net Contributions	-173
Investment Return	339
Ending Value	\$9,889



Asset Mix

The actual asset mix was essentially unchanged from the prior quarter. The international stock segment grew beyond the policy target due to strong performance of the international markets during this period.

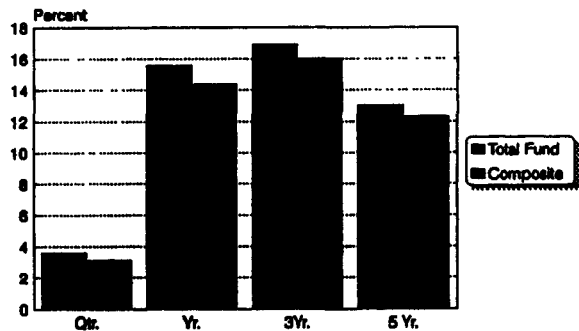
	Policy Asset Mix	Actual Mix 9/30/93	Actual Market Value (Millions)
Domestic Stocks	50.0%	50.1%	\$4,958
Int'l. Stocks	10.0	11.4	1,130
Domestic Bonds	24.0	27.9	2,758
Alternative Assets	15.0	9.6	941
Unallocated Cash	1.0	1.0	102
	100.0%	100.0%	\$9,889



Fund Performance

The Basic Funds exceeded its composite market index for the quarter and year.

	Qtr.	1 Yr.	3 Yr.	5 Yr.
Basics	3.6%	15.6%	16.9%	13.0%
Composite	3.1	14.4	16.0	12.2



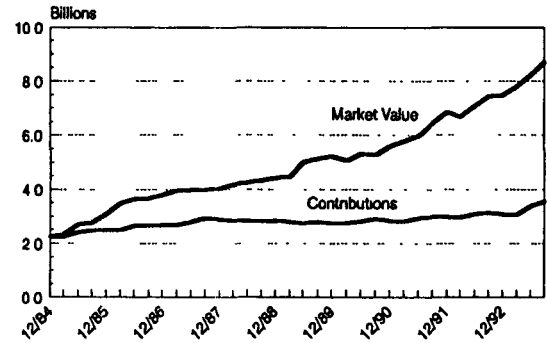
EXECUTIVE SUMMARY
Post Retirement Fund

Asset Growth

The market value of the Post Fund increased 5.5% during the third quarter of 1993. The increase resulted from positive investment returns and net contributions.

Asset Growth
During Third Quarter 1993
(Millions)

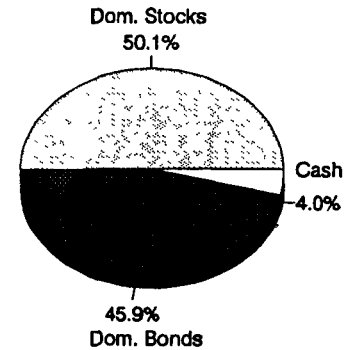
Beginning Value	\$8,251
Net Contributions	157
Investment Return	299
Ending Value	\$8,707



Asset Mix

The actual asset mix remained essentially unchanged from the previous quarter.

	Policy Asset Mix	Actual Mix 9/30/93	Actual Market Value (Millions)
Domestic Stocks	50.0%	50.1%	\$4,365
Domestic Bonds	47.0	45.9	3,996
Unallocated Cash	3.0	4.0	346
	100.0%	100.0%	\$8,707

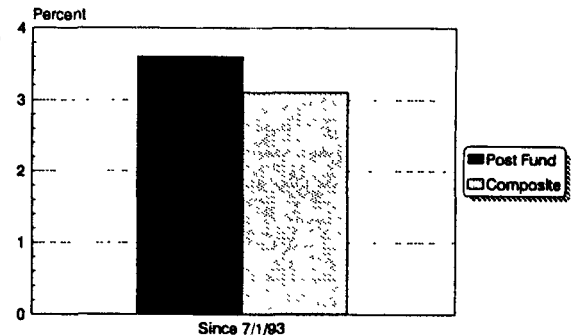


Fund Performance

The Post Fund exceeded its composite market index for the quarter.

	Since 7/1/93*
Post Fund	3.6%
Composite	3.1

* Date asset allocation transition to 50% domestic common stocks was completed.



EXECUTIVE SUMMARY
Stock and Bond Manager Performance

Domestic Stocks

The domestic stock manager group (active and passive combined) exceeded its target for the quarter and year.

	Qtr.	1 Yr.	3 Yr.	5 Yr.
Dom. Stocks	4.1%	18.0%	19.9%	14.2%
Wilshire 5000*	3.7	16.6	19.9	14.2

* Buy/hold index adjusted for liquor and tobacco restrictions through 3/31/93 and AHP restriction through 10/31/93.

International Stocks

The international stock manager group (active and passive combined) exceeded its target for the quarter and but trailed it for the year.

	Qtr.	1 Yr.
Int'l. Stocks	6.8%	24.3%
EAFE	6.6	26.4

Domestic Bonds

The domestic bond manager group (active and semi-passive combined) exceeded its target for the quarter and year.

	Qtr.	1 Yr.	3 Yr.	5 Yr.
Bonds	3.2%	12.0%	14.0%	11.9%
Salomon BIG	2.6	10.2	12.9	11.5

Assigned Risk Plan

Investment Objective

The Assigned Risk Plan has two investment objectives: to minimize the mismatch between assets and liabilities and to provide sufficient liquidity for the payment of on-going claims and operating expenses.

Asset Mix

The Assigned Risk Plan is invested in a balanced portfolio of common stocks and bonds. The actual asset mix will fluctuate in response to changes in the Plan's liability stream.

	9/30/93 Target	9/30/93 Actual
Stocks	15.0%	14.5%
Bonds	85.0	84.9
Unallocated Cash	0.0	0.6
Total	100.0%	100.0%

Investment Management

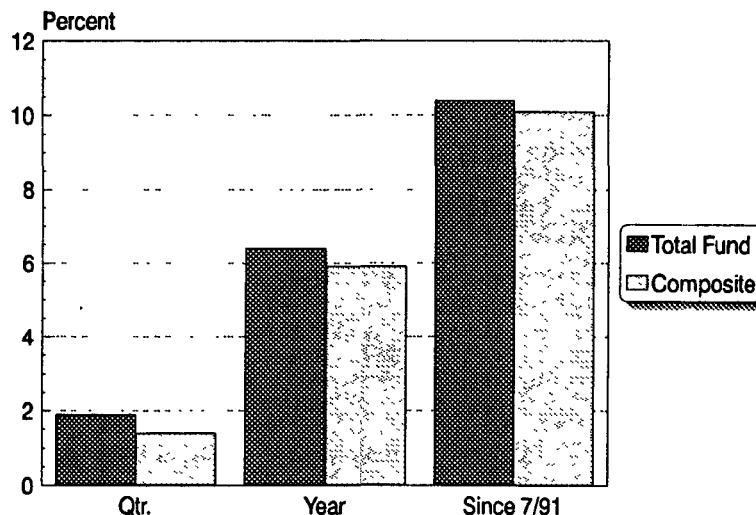
The entire fund is managed externally by Voyager Asset Management. The portfolio was transferred from the Department of Commerce to the SBI on May 1, 1991.

Performance Benchmarks

A custom benchmark has been established for the fixed income portfolio. It reflects the duration of the liability stream and the long-term sector allocation of Voyager Asset Management. The equity benchmark is a custom benchmark consisting of A or greater rated S&P 500 stocks less utilities and restricted stocks. The total fund benchmark is a combination of the fixed income and equity benchmarks, weighted according to the asset allocation target.

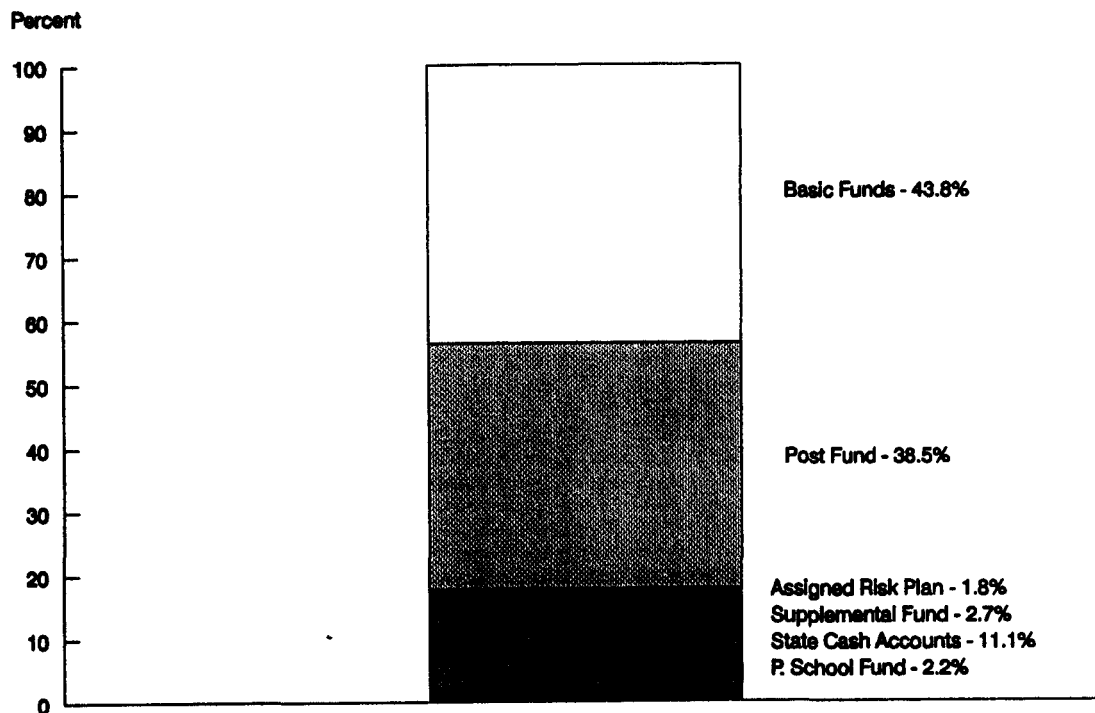
Market Value

On September 30, 1993 the market value of the Assigned Risk Plan was \$404 million.



	Period Ending 9/30/93		
	Qtr.	Yr.	Since 7/1/91
Total Fund	1.8%	6.4%	10.4%
Composite Index	1.4	5.9	10.1
Equity Segment	0.8	2.0	7.7
Benchmark	0.1	1.0	8.5
Bond Segment	2.0	7.3	11.0
Benchmark	1.7	6.9	10.4

EXECUTIVE SUMMARY
Funds Under Management



9/30/93
Market Value
(Billions)

Basic Retirement Funds	\$9.9
Post Retirement Fund	8.7
Assigned Risk Plan	0.4
Supplemental Investment Fund	0.6
State Cash Accounts	2.5
Permanent School Fund	0.5
Total	\$22.6

MINNESOTA STATE BOARD OF INVESTMENT

QUARTERLY INVESTMENT REPORT

Third Quarter 1993

(July 1, 1993 — September 30, 1993)

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VARIOUS CAPITAL MARKET INDICES

	Period Ending 9/30/93				
	Qtr.	Yr.	3 Yr.	5 Yr.	10 Yr.
Domestic Equity					
Wilshire 5000	4.1%	17.3%	20.2%	14.7%	13.9%
Dow Jones Industrials	1.8	11.9	16.8	14.8	15.0
S&P 500	2.6	13.0	18.1	14.6	14.6
Russell 2000	8.7	33.2	28.1	13.2	10.2
Domestic Fixed Income					
Salomon BIG*	2.6	10.2	12.9	11.5	12.1
Shearson Gov't./Corp.	3.3	11.4	13.5	11.7	12.0
90 Day U.S. Treasury Bills	0.8	3.1	4.5	6.0	6.9
International					
EAFE**	6.6	26.4	12.7	4.8	18.1
Salomon Non U.S. Gov't. Bond	5.4	7.7	15.1	11.1	14.8
Inflation Measure					
Consumer Price Index***	0.5	2.7	3.0	3.9	3.7

* Salomon Broad Investment Grade bond index

** Morgan Stanley Capital International index of Europe, Australia and the Far East (EAFE)

*** Consumer Price Index (CPI) for all urban consumers, also known as CPI-U.

FINANCIAL MARKETS REVIEW

DOMESTIC STOCKS

Overall, the stock market generated strong returns for the quarter. Large capitalization growth stocks trailed other segments by substantial margins due to poor performance in the consumer non-durable and service sectors. In general, small capitalization stocks, performed better than large cap stocks. The quarterly results reflect the market's positive reaction to declining interest rates and low inflation.

The Wilshire 5000 provided a 4.1% return for the quarter. Performance among the different Wilshire Style Indexes for the quarter are shown below:

Large Value	5.3%
Small Value	6.9
Large Growth	0.1
Small Growth	9.8

The Wilshire 5000 increased 17.1% during the latest year.

DOMESTIC BONDS

Bonds generated high returns this quarter as Treasury yields declined. The yield curve flattened with two year yields declining by 0.14% and long yields falling 0.65%. Continued sluggish economic growth and low inflation caused falling interest rates. Mortgage prepayments continued with the declining interest rates causing poor mortgage sector returns when compared to treasuries and corporates.

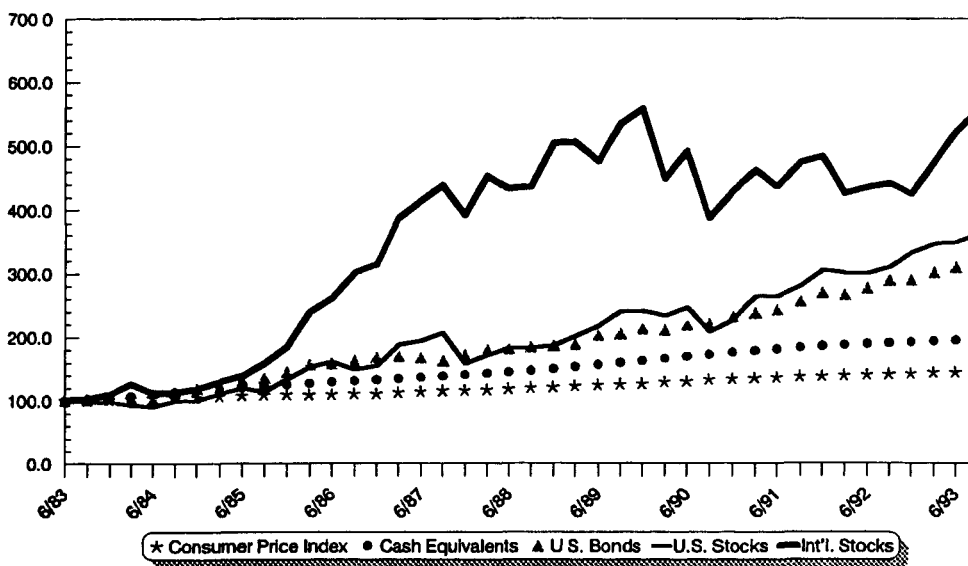
Overall, the Salomon Brothers Broad Investment Grade (BIG) Index increased 2.6% for the quarter. The Salomon BIG sector returns for the quarter were:

Treasury/Agency	3.3%
Corporates	3.5
Mortgages	0.9

The Salomon BIG increased 10.2% for the latest year.

PERFORMANCE OF CAPITAL MARKETS

Cumulative Returns



Indices used are: Morgan Stanley's Index of Europe, Australia and the Far East (EAFE); Wilshire 5000 Index; Salomon Broad Investment Grade (BIG) Bond Index; 91 Day Treasury Bills; and the Consumer Price Index.

FINANCIAL MARKETS REVIEW

INTERNATIONAL STOCKS

In aggregate, the international stock markets (as measured by the EAFE index) provided a return of 6.6% for the quarter. As shown below, performance varied widely among the major markets.

Japan	3.5%
United Kingdom	5.6
Germany	16.8
France	9.3

The EAFE index increased by 26.4% during the latest year. The index is compiled by Morgan Stanley Capital International. It is an index of 18 markets located in Europe, Australia and the Far East (EAFE). The major markets listed above comprise about 75% of the value of international markets.

REAL ESTATE

Many real estate portfolios have experienced significant writedowns over the last two years, reflecting the weak real estate markets. Income returns from properties valued at current market prices are becoming more competitive with those from other asset classes. Longer term, higher property income yields, low interest rates and a significant decline in construction activity are favorable developments for the real estate market.

PRIVATE EQUITY

According to the *Venture Capital Journal*, "despite a gain in fundraising, an increase in disbursements and a highly liquid initial public offering (IPO) market, the venture capital market saw its total capital under management decline for the second year in a row during 1992." Also, the number of venture capital firms declined to 617 firms from 640 the previous year.

RESOURCE FUNDS

Currently, spot prices of West Texas Intermediate oil are \$16.63 per barrel. This compares to \$19.89 per barrel a year ago.

Spot prices of natural gas are approximately \$2.35 per MCF (thousand cubic feet) compared to \$2.09 per MCF a year ago.

BASIC RETIREMENT FUNDS

Investment Objectives

The Basic Retirement funds are composed of the retirement assets for currently working participants in eight statewide retirement funds. The Funds serve as accumulation pools for the pension contributions of public employees and their employers during the employees' years of active service. Approximately 250,000 public employees participate in the Basic Funds.

Employee and employer contribution rates are specified in state law as a percentage of an employee's salary. The rates are set so that contributions plus expected investment earnings will cover the projected cost of promised pension benefits. In order to meet these

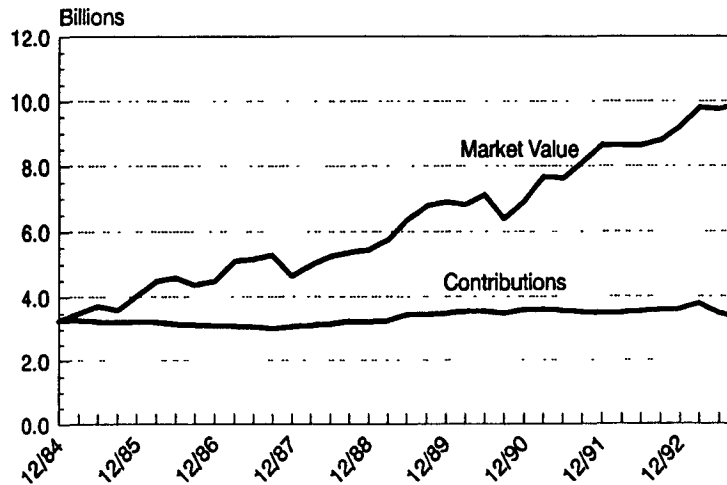
projected pension costs, the Basic Retirement Funds must generate investment returns of at least 8.5% on an annualized basis, over time.

Normally, pension assets will accumulate in the Basic Retirement Funds for thirty to forty years during an employee's years of active service. This provides the Basic Funds with a long investment time horizon and permits the Board to take an aggressive, high expected return investment policy which incorporates a sizeable equity component in order to meet or exceed its actuarial return target.

Asset Growth

The market value of the Basic Retirement Funds' assets increased 1.7% during the third quarter of 1993.

Positive investment returns exceeded net withdrawals for the quarter.



	In Millions							
	12/88	12/89	12/90	12/91	12/92	3/93	6/93	9/93
Beginning Value	\$4,628	\$5,420	\$6,875	\$6,919	\$8,639	\$9,191	\$9,780	\$9,723
Net Contributions	146	269	91	-92	-34	172	-295	-173
Investment Return	646	1,186	-47	1,812	586	417	238	339
Ending Value	\$5,420	\$6,875	\$6,919	\$8,639	\$9,191	\$9,780	\$9,723	\$9,889

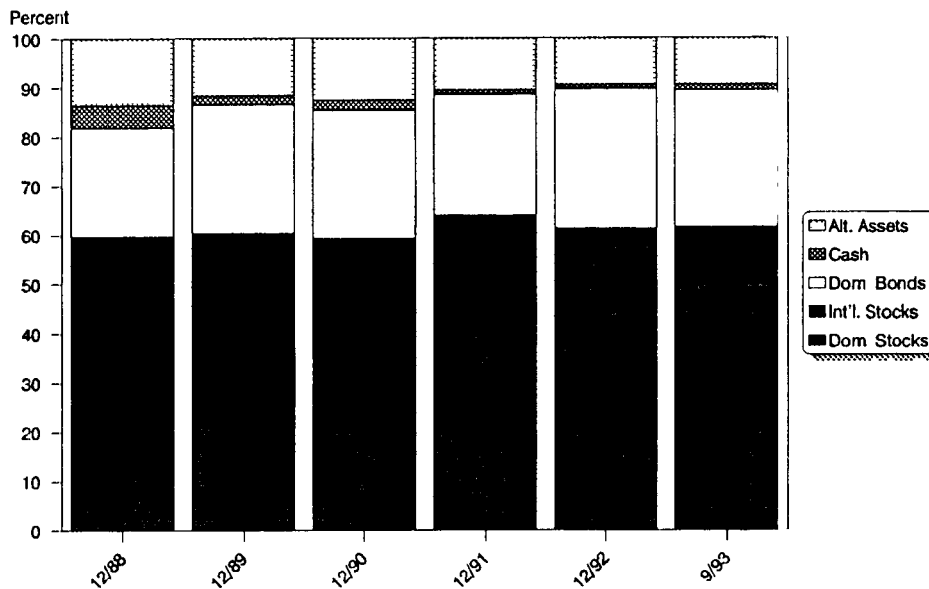
BASIC RETIREMENT FUNDS
Asset Mix

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.

The actual asset mix changed little from the prior quarter, The slight increase in the international percentage reflects the stronger performance of that asset class relative to other assets during the period.

Domestic Stocks	50.0%
Int'l. Stocks	10.0
Domestic Bonds	24.0
Alternative Assets*	15.0
Unallocated Cash	1.0

*Alternative assets include real estate, venture capital and resource funds.



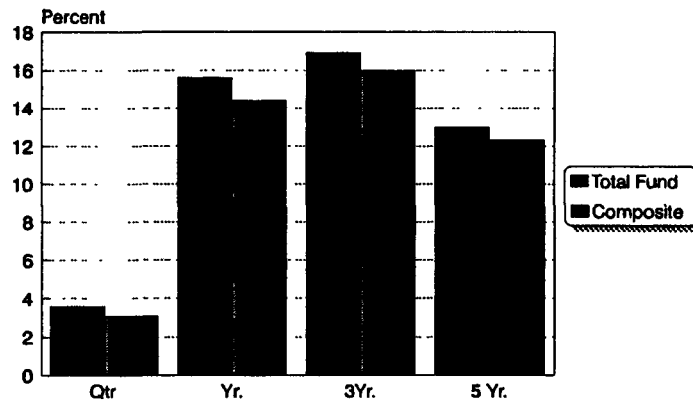
	Last Five Years					Latest Qtr.		
	12/88	12/89	12/90	12/91	12/92	3/93	6/93	9/93
Domestic Stocks	59.5%	60.2%	59.1%	63.9%	57.9%	54.2%	49.4%	50.1%
Int'l. Stocks	0.0	0.0	0.0	0.0	3.2	6.8	10.9	11.4
Domestic Bonds	22.4	26.4	26.2	24.7	28.5	28.5	27.8	27.9
Real Estate	9.0	7.5	7.0	4.8	4.2	3.9	4.0	4.1
Venture Capital	3.1	2.8	4.2	4.7	4.2	4.1	4.6	4.3
Resource Funds	1.5	1.4	1.5	1.1	1.2	1.1	1.1	1.2
Unallocated Cash	4.5	1.7	2.0	0.8	0.8	1.4	2.2	1.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

BASIC RETIREMENT FUNDS
Total Fund Performance

The Basic Funds' performance is evaluated relative to a composite of market indices. The composite is weighted in a manner that reflects the long-term asset allocation of the Funds:

	Basics Target	Market Index	Basics Composite 9/30/93
Domestic Stocks	50.0%	Wilshire 5000	50.0%
Int'l. Stocks	10.0	EAFE	10.0
Domestic Bonds	24.0	Salomon BIG	29.0*
Alternative Assets	15.0	Wilshire Real Estate	4.5*
		Venture Capital Funds	4.5*
		Resource Funds	1.0*
Unallocated Cash	1.0	91 Day T-Bills	1.0
	100.0%		100.0%

* Alternative asset and bond weights are reset in the composite each quarter to reflect the amount of unfunded commitments in alternative asset classes.



	Period Ending 9/30/93			
	Qtr.	Yr.	3 Yr. *(Annualized)	5 Yr. *(Annualized)
Basic Funds	3.6%	15.6%	16.9%	13.0%
Composite Index**	3.1	14.4	16.0	12.2

**Adjusted to reflect the SBI's restrictions on liquor and tobacco stocks through 3/31/93 and AHP restriction through 10/31/93.

Effective July 1, 1993, the Basic and Post Funds share the same stock, domestic bond and international stock managers. See page 11 for the performance of these asset pools. Performance of the Basic Funds' alternative assets is on page 12.

POST RETIREMENT FUND

The Post Retirement Investment Fund contains the pension assets of retired public employees covered by statewide retirement plans. Approximately 60,000 retirees receive monthly annuities from the assets of the Fund.

Upon the employee's 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 on an annualized basis. If the Post Fund exceeds this earnings rate, excess earnings are used to finance permanent benefit increases for eligible retirees.

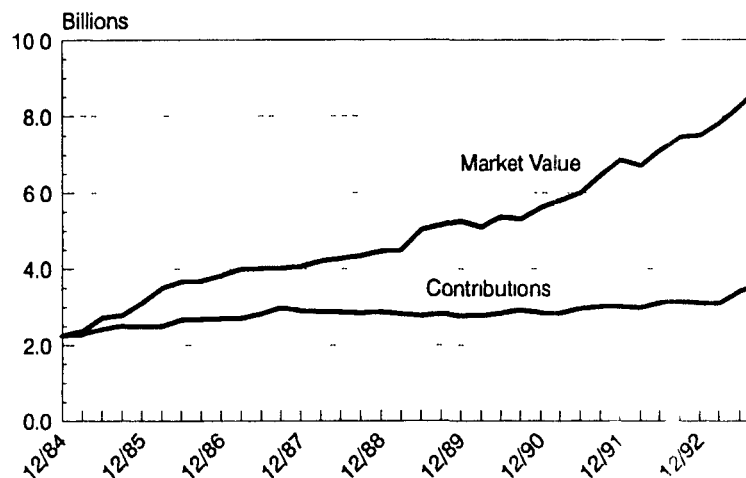
Through fiscal year 1992, unrealized capital gains (or losses) were excluded from the statutory definition of earnings. For this reason the Post Fund previously was not designed to maximize long-term total rates of return. Rather, the SBI attempted to generate a high, consistent stream of realized earnings for the Post Fund that maintained current benefits, as well as produce benefit increases over time

Beginning in fiscal year 1993, the post retirement benefit increase formula is based on total return rather than realized earnings. As a result, the Board has adopted a new long-term asset allocation strategy for the Post Fund which incorporates a substantial commitment to common stocks. The transition to the new asset allocation strategy was completed by the start of fiscal year 1994 (7/1/93).

Asset Growth

The market value of the Post Retirement Fund increased by 5.5% during the third quarter of 1993. The increase

was due both to positive investment performance and net contributions.



	In Millions							
	12/88	12/89	12/90	12/91	12/92	3/93	6/93	9/93
Beginning Value	\$4,047	\$4,434	\$5,238	\$5,590	\$6,855	\$7,500	\$7,804	\$8,251
Net Contributions	-27	25	88	162	95	-26	314	157
Investment Return	414	779	264	1,103	550	330	133	299
Ending Value	\$4,434	\$5,238	\$5,590	\$6,855	\$7,500	\$7,804	\$8,251	\$8,707

POST RETIREMENT FUND

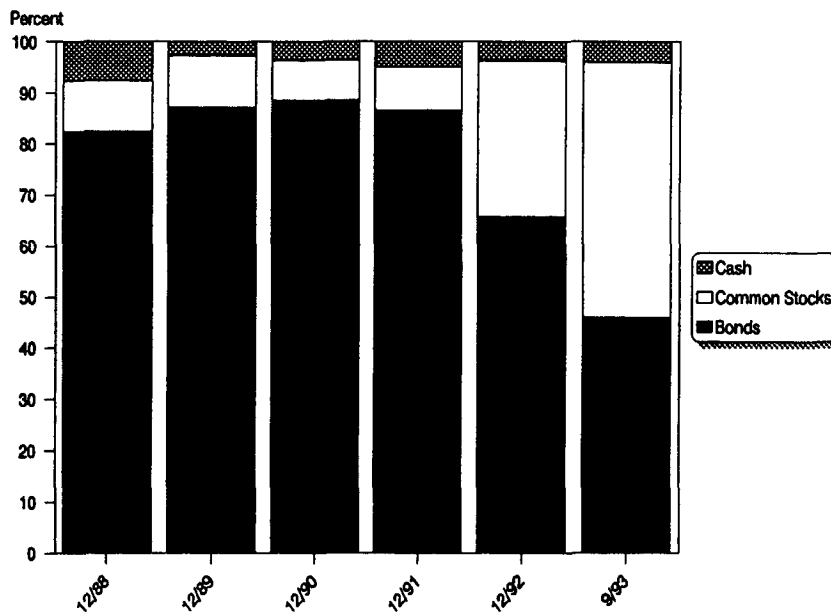
Asset Mix

The Board adopted a new asset allocation strategy for the Post Fund effective for fiscal year 1993. The new policy targets reflect the new post retirement benefit increase formula recently enacted by the Legislature. Throughout fiscal year 1993, the actual asset mix of the Post Fund moved toward the following long-term policy targets:

Domestic Stocks	50.0%
Domestic Bonds	47.0
Unallocated Cash	3.0
Total	100.0%

The large allocation to common stocks will allow the Fund to increase the long-term earning power of its assets and allow the Fund to focus on generating higher long-term total rates of return.

The asset mix of the Post Fund was largely unchanged from the prior quarter.



	Last Five years					Latest Qtr.		
	12/88	12/89	12/90	12/91	12/92	3/93	6/93	9/93
Stocks	10.1%	10.2%	7.9%	15.7%	30.6%	40.3%	50.8%	50.1%
Bonds	82.3	87.1	88.5	80.0	65.6	56.8	46.6	45.9
Unallocated Cash	7.6	2.7	3.6	5.0	3.8	2.9	2.6	4.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

POST RETIREMENT FUND
Total Fund Performance

The Post Fund's performance is evaluated relative to a composite of market indices. The composite is weighted in a manner that reflects the long-term asset allocation of the Fund:

Asset Class	Post Target	Market Index	Post Composite 9/30/93
Domestic Stocks	50%	Wilshire 5000	50.0%
Int'l. Stocks	10	EAFE	0.0*
Domestic Bonds	32	Salomon BIG	47.0*
Alternative Assets	5	---	0.0*
Unallocated Cash	3	91 Day T-Bills	3.0
	100%		100.0%

* Until the international and alternative asset allocations are fully funded, the composite will be overweighted in bonds.

The asset mix of the Post Fund was moved toward a 50% stock allocation during fiscal year 1993. The performance of the fund since the transition was completed is shown below.



Since 7/1/93

Post Fund	3.6%
Composite Index	3.1

Effective July 1, 1993, the Basic and Post Funds share the same domestic stock, domestic bond and international stock managers. See page 11 for the performance of these asset pools.

STOCK AND BOND MANAGERS

Performance of Asset Pools

Domestic Stock Pool

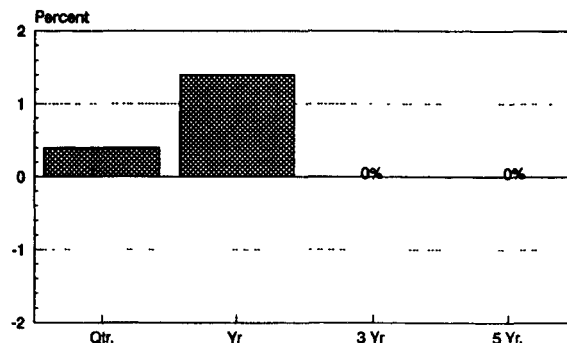
Target: Wilshire 5000 Adjusted*

Expectation: If half of the segment is actively managed and half is passively managed, the entire segment is expected to exceed the target by +.20-.45% annualized, over time.

	Qtr.	Yr.	Annualized	
			3 Yrs.	5 Yrs.
Stock Pool	4.1%	18.0%	19.9%	14.2%
Wilshire 5000*	3.7	16.6	19.9	14.2

*Buy/hold index adjusted for liquor and tobacco restrictions through 3/31/93 and AHP restriction through 10/31/93.

Value Added to Wilshire 5000 Adjusted*



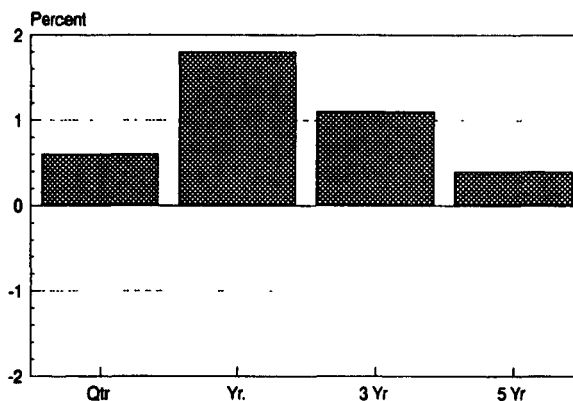
Domestic Bond Pool

Target: Salomon Broad Investment Grade (BIG) Index

Expectation: If half of the segment is actively managed and half is managed semi-passively, the entire segment is expected to exceed the target by +.20-.35% annualized, over time.

	Qtr.	Yr.	Annualized	
			3 Yrs.	5 Yrs.
Bond Pool	3.2%	12.0%	14.0%	11.9%
Salomon BIG	2.6	10.2	12.9	11.5

Value Added to Salomon BIG



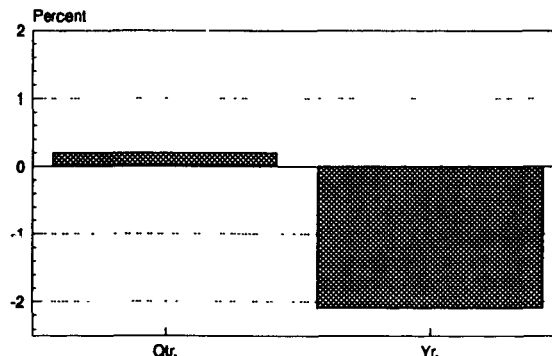
International Stock Pool

Target: EAFE

Expectation: The index fund is expected to track the target by +/- .20%, over time. Active managers are expected to add 1.0-1.5% annualized overtime. At the end of the quarter, approximately 20% of the segment was actively managed.

	Qtr.	Yr.
Int'l. Pool	6.8%	24.3%
EAFE	6.6	26.4

Value Added to EAFE



ALTERNATIVE ASSET MANAGERS
Performance of Asset Pools

Real Estate Pool (Basic Funds only)

Expectation: Real estate investments are expected to exceed the rate of inflation by 3-5% annualized, over the life of the investment.

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

	Qtr.	Yr.	Annualized	
			3 Yrs.	5 Yrs.
Real Estate	0.0%	-5.0%	-6.9%	-1.9%
Real Estate Index	0.0	-5.3	-7.8	-3.2
Inflation	0.5	2.7	3.0	3.9

Private Equity Pool (Basic Funds only)

Expectation: Private equity investments (primarily venture capital) are expected to provide annualized returns at least 3% greater than historical public equity returns, over the life of the investment. This equates to an absolute return of approximately 13-14% annualized.

The SBI began its venture capital programs in the mid-1980's. Some of the investments, therefore, are relatively immature and returns may not be indicative of future results.

	Qtr.	Yr.	Annualized	
			3 Yrs.	5 Yrs.
Private Equity	-4.1%	2.5%	18.9%	16.2%

Resource Pool (Basic Funds only)

Expectation: Resource investments (primarily oil and gas) are expected to exceed the rate of inflation by 3-5% annualized, over the life of the investment.

The SBI began its resource program in the mid-1980's. Some of the investments, therefore, are relatively immature and returns may not be indicative of future results.

	Qtr.	Yr.	Annualized	
			3 Yrs.	5 Yrs.
Resource Fund	5.6%	11.4%	16.2%	6.6%

ASSIGNED RISK PLAN

Investment Objective

The Assigned Risk Plan has two investment objectives: to minimize the mismatch between assets and liabilities and to provide sufficient liquidity for the payment of on-going claims and operating expenses.

Asset Mix

The Assigned Risk Plan is invested in a balanced portfolio of common stocks and bonds. The actual asset mix will fluctuate in response to changes in the Plan's liability stream.

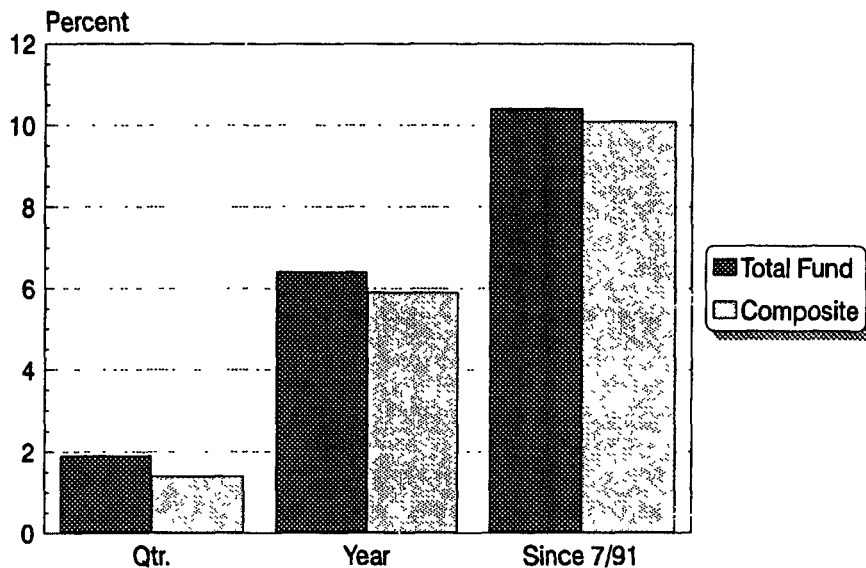
Investment Management

The entire fund is managed externally by Voyager Asset Management. The portfolio was transferred from the Department of Commerce to the SBI on May 1, 1991.

Market Value

On September 30, 1993 the market value of the Assigned Risk Plan was \$404 million.

	9/30/93 Target	9/30/93 Actual
Stocks	15.0%	14.5%
Bonds	85.0	84.9
Unallocated Cash	0.0	0.6
Total	100.0%	100.0%



	Period Ending 9/30/93		
	Qtr.	Yr.	Since 7/1/91
Total Account	1.8%	6.4%	10.4%
Composite	1.4	5.9	10.1
Equity Segment	0.8	2.0	7.7
Benchmark	0.1	1.0	8.5
Bond Segment	2.0	7.3	11.0
Benchmark	1.7	6.9	10.4

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:

1. It functions as the investment manager for all assets of the Unclassified Employees Retirement Plan and the Public Employees Defined Contribution Plan.
2. It acts as an investment manager for most assets of the supplemental retirement programs for state university and community college teachers and for Hennepin County employees.
3. It is one investment vehicle offered to public employees as part of the state's Deferred Compensation Plan.
4. 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 September 30, 1993 the market value of the entire fund was \$619 million.

Investment Options

Income Share Account - a 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.

Fixed Interest 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.

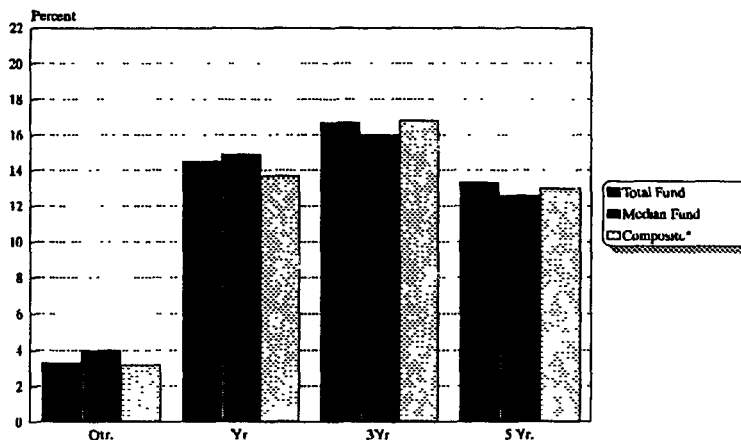
Investment Management

The Account combines internal and external management. Internal investment staff manage the entire fixed income segment. Through out the period shown below, 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 September 30, 1993 the market value of the Income Share Account was \$319 million.

	Target	Actual
Stocks	60.0%	62.1%
Bonds	35.0	31.7
Unallocated Cash	5.0	6.2
	100.0%	100.0%



Period Ending 9/30/93

	Annualized			
	Qtr.	Yr.	3 Yr.	5 Yr.
Total Account	3.3%	14.5%	16.7%	13.3%
Median Fund*	4.0	14.9	16.0	12.6
Composite**	3.2	13.7	16.8	13.0
Equity Segment	3.7	17.3	20.1	14.5
Wilshire 5000***	3.7	16.6	19.9	14.2
Bond Segment	3.0	11.6	13.5	11.9
Salomon Bond Index	2.6	10.2	12.9	11.5

*TUCS Median Master Trust

**60% Wilshire 5000/35% Salomon Broad Bond Index/5% T-Bills Composite. Wilshire 5000 is adjusted as noted below.

*** Buy/hold index adjusted for liquor and tobacco restrictions through 3/31/93 and AHP restriction through 10/31/93.

**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.

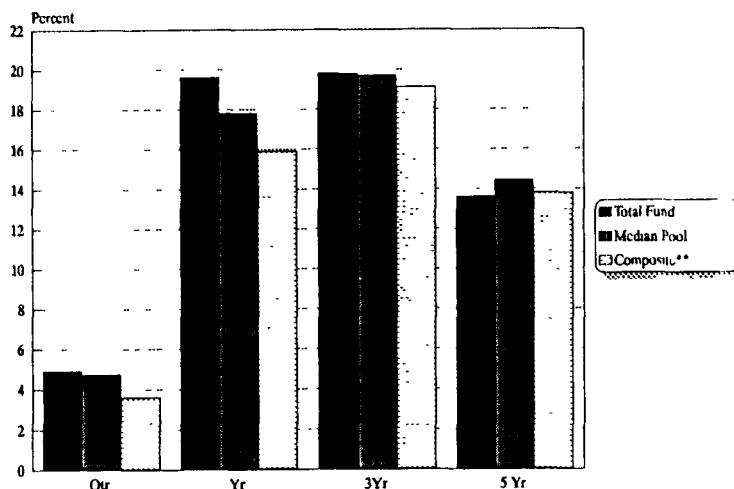
Investment Management

Through out the period shown below, 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 September 30, 1993 the market value of the Growth Share Account was \$102 million.

	Target	Actual
Stocks	95.0%	92.8%
Unallocated Cash	5.0	7.2
	100.0%	100.0%



Period Ending 9/30/93

	Annualized			
	Qtr.	Yr.	3 Yr.	5 Yr.
Total Account	4.9%	19.6%	19.8%	13.6%
Median Pool*	4.7	17.8	19.7	14.4
Composite**	3.6	15.9	19.1	13.8

* TUCS Median Equity Pool

** 95% Wilshire 5000/5 % T-Bills Composite. Wilshire 5000 buy/hold index is adjusted for liquor and tobacco restrictions through 3/31/93 and AHP restriction through 10/31/93.

SUPPLEMENTAL INVESTMENT FUND
Common Stock Index Account

Investment Objective and Asset Mix

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

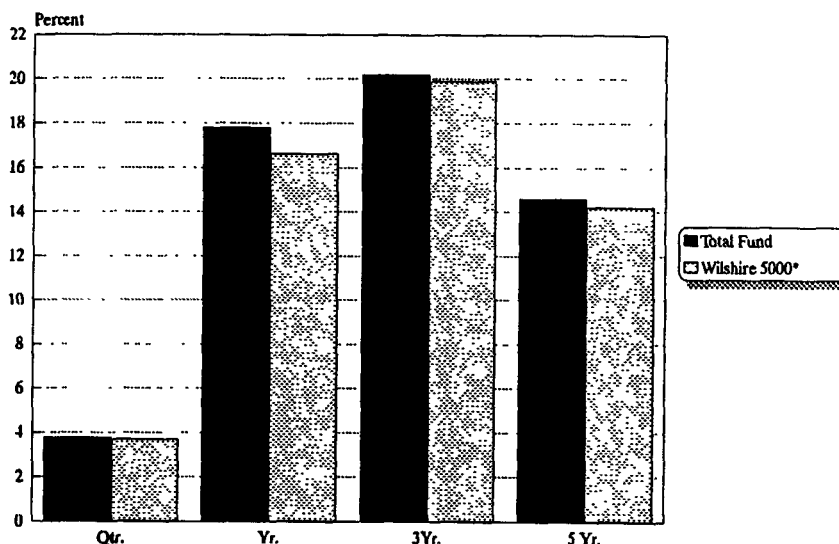
The Account is invested 100% in common stock.

Investment Management

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

Market Value

On September 30, 1993 the market value of the Common Stock Index Account was \$39 million.



Period Ending 9/30/93

Annualized

Qtr. Yr. 3 Yr. 5 Yr.

Total Account	3.7%	17.8%	20.2%	14.5%
Wilshire 5000*	3.7	16.6	19.9	14.2

*Buy/hold index adjusted for liquor and tobacco restrictions through 3/31/93 and AHP restriction through 10/31/93.

SUPPLEMENTAL 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

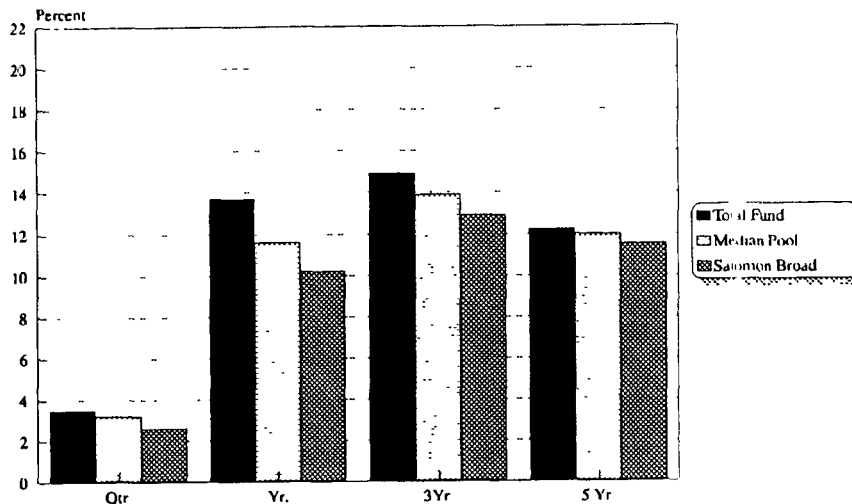
The Bond Market Account invests primarily in high-quality, government and corporate bonds that have intermediate to long-term maturities, usually 3 to 20 years.

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 September 30, 1993 the market value of the Bond Market Account was \$21 million.



Period Ending 9/30/93

Annualized

Qtr. Yr. 3 Yr. 5 Yr.

Total Account	3.5%	13.7%	14.9%	12.2%
Median Pool*	3.2	11.6	13.9	12.0
Salomon BIG**	2.6	10.2	12.9	11.5

* TUCS Median Fixed Income Pool

** Salomon Broad Investment Grade Index

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.

Asset Mix

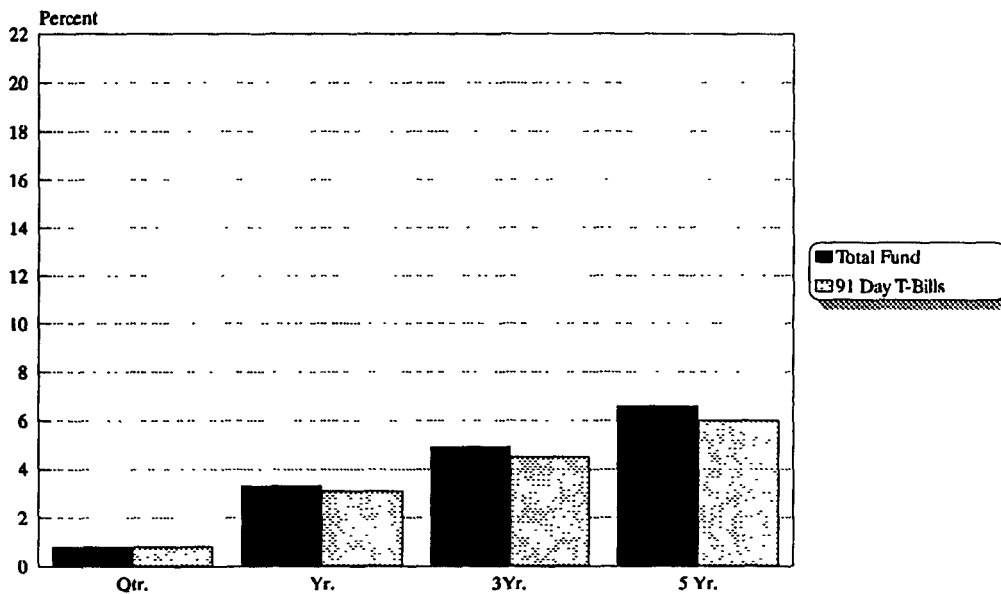
The Money Market Account is invested entirely in high quality short-term investments such as U.S. Treasury Bills, bank certificates of deposit, repurchase agreements, and high grade commercial paper. The average maturity of these investments is 30 to 60 days.

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 September 30, 1993 the market value of the Money Market Account was \$66 million.



Period Ending 9/30/93

Annualized

Qtr. Yr. 3 Yr. 5 Yr.

Total Account	0.8%	3.2%	4.9%	6.6%
91 Day T-Bills	0.8	3.1	4.5	6.0

SUPPLEMENTAL INVESTMENT FUND

Fixed Interest Account

Investment Objectives

The investment objectives of the Fixed Interest 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 Fixed Interest 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 Fixed Interest Account over the following twelve months.

Market Value

On September 30, 1993 the market value of the Fixed Interest Account was \$72 million.

Contract Period	Annual Effective Interest Rate	Manager
Nov. 1, 1990-Oct. 31, 1993	8.765%	Mutual of America/Provident National (blended rate)
Nov. 1, 1991-Oct. 31, 1994	6.634%	Continental Assurance/Provident National (blended rate)
Nov. 1, 1992-Oct. 31, 1995	5.280%	Norwest Bank Minnesota

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 have been influenced by the 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 have limited 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, has invested 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 fund's asset mix changed for the quarter with an increase in cash prior to the Fund's school aid distribution. The Permanent School Fund continues to hold only fixed income securities.

	Target	Actual
Bonds	95.0%	88.9%
Unallocated Cash	5.0	11.1
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 4.5% during the third quarter. Positive returns contributed to the increase.

**Asset Growth
During Third Quarter 1993
(Millions)**

Beginning Value	\$456.1
Net Contributions	3.3
Investment Return	17.3
Ending Value	\$476.7

Bond Segment Performance

The composition of the Permanent School Fund's bond portfolio was essentially unchanged during the quarter. The bond portfolio is structured with a laddered distribution of maturities to minimize the Fund's exposure to re-investment rate risk. At the quarter's-end, the portfolio had a current yield of 7.31%, an average life of 7.88 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
9/30/93**

Value at Market	\$416,101,856
Value at Cost	342,424,842
Average Coupon	8.77%
Current Yield	7.31
Yield to Maturity	6.55
Current Yield at Cost	8.88
Time to Maturity	15.08 Years
Average Duration	7.88 Years
Average Quality Rating	AAA
Number of Issues	120

STATE CASH ACCOUNTS

Description

State Cash Accounts represent the cash balances in more than 200 separate accounts 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:

1. Trust Fund Pool contains the cash balances of retirement-related accounts managed internally and cash balances in the Permanent School Fund.
2. 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.

Period Ending 9/30/93

	Market Value (Millions)	Qtr.	Yr.	3 Yrs. Annualized
Treasurer's Cash Pool	\$2,093	1.0%	4.5%	6.3%
Trust Fund Cash Pool	72	0.8	4.5	5.7
Benchmark*		1.0	N.A.	N.A.
91-Day T-Bills		0.8	3.1	4.5

* 75% State Street Short Term Investment Fund/25% 1-3 Year Treasuries.

Tab B

PORTFOLIO STATISTICS

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I. Composition of State Investment Portfolios 9/30/93	1
II. Cash Flow Available for Investment 6/30/93 - 9/30/93	3
III. Monthly Transactions and Asset Summary - Retirement Funds	4

**STATE OF MINNESOTA
STATE BOARD OF INVESTMENT
Composition of State Investment Portfolios By Type of Investment
Market Value September 30, 1993
(in Millions)**

	Cash And Short Term Securities		Bonds		Stocks		External Int'l.	Alternative Assets	Total
	Internal	External	Internal	External	Internal	External			
BASIC RETIREMENT FUNDS:									
Teachers Retirement Fund	\$32,678 0.77%	\$1,186,571 27.96%	\$0	\$2,133,296 50.27%	\$0	\$486,043 11.46%	\$404,962 9.54%	\$4,243,550 100%	
Public Employees Retirement Fund	\$27,778 1.22%	\$632,163 27.84%	\$0	\$1,136,544 50.04%	\$0	\$258,946 11.40%	\$215,749 9.50%	\$2,271,180 100%	
State Employees Retirement Fund	\$24,487 1.22%	\$557,263 27.84%	\$0	\$1,001,885 50.04%	\$0	\$228,266 11.40%	\$190,187 9.50%	\$2,007,088 100%	
Public Employees Police & Fire Fund	\$11,564 1.22%	\$263,158 27.84%	\$0	\$473,122 50.04%	\$0	\$107,795 11.40%	\$89,812 9.50%	\$945,451 100%	
Highway Patrol Retirement Fund	\$1,537 1.04%	\$41,280 27.89%	\$0	\$74,215 50.13%	\$0	\$16,909 11.42%	\$14,088 9.52%	\$148,029 100%	
Judges Retirement Fund	\$108 1.23%	\$2,451 27.84%	\$0	\$4,406 50.04%	\$0	\$1,004 11.40%	\$836 9.49%	\$8,805 100%	
Public Employees P.F. Consolidated	\$2,994 1.82%	\$45,571 27.67%	\$0	\$81,940 49.74%	\$0	\$18,666 11.33%	\$15,553 9.44%	\$164,724 100%	
Correctional Employees Retirement	\$1,474 1.40%	\$29,302 27.79%	\$0	\$52,681 49.95%	\$0	\$12,003 11.38%	\$10,000 9.48%	\$105,460 100%	
POST RETIREMENT FUND	\$345,946 3.97%	\$3,996,455 45.90%	\$0	\$4,364,634 50.13%	\$0	\$0	\$0	\$8,707,035 100%	

	Cash And		Bonds		Stocks		External Int'l	Alternative Assets	Total
	Short Term Securities	Internal	External	Internal	External				
MINNESOTA SUPPLEMENTAL FUNDS:									
Income Share Account	\$19,817 6.21%	\$101,079 31.66%	\$0	\$0	\$198,369 62.13%	\$0	\$0	\$319,265 100%	
Growth Share Account	\$7,372 7.22%	\$0	\$0	\$0	\$94,718 92.78%	\$0	\$0	\$102,090 100%	
Money Market Account	\$66,145 100%	\$0	\$0	\$0	\$0	\$0	\$0	\$66,145 100%	
Common Stock Index Account	\$0	\$0	\$0	\$0	\$39,220 100%	\$0	\$0	\$39,220 100%	
Bond Market Account	\$0	\$0	\$20,680 100%	\$0	\$0	\$0	\$0	\$20,680 100%	
Fixed Interest Account	\$0	\$0	\$72,034 100%	\$0	\$0	\$0	\$0	\$72,034 100%	
TOTAL RETIREMENT FUNDS	\$541,900 2.82%	\$101,079 0.53%	\$6,846,928 35.63%	\$0	\$9,655,030 50.24%	\$1,129,632 5.88%	\$941,187 4.90%	\$19,215,756 100%	
ASSIGNED RISK PLAN	\$2,651 0.65%	\$0	\$343,277 84.88%	\$0	\$58,506 14.47%	\$0	\$0	\$404,434 100%	
ENVIRONMENTAL TRUST FUND	\$0	\$46,147 72.96%	\$0	\$17,103 27.04%	\$0	\$0	\$0	\$63,250 100%	
PERMANENT SCHOOL FUND	\$53,064 11.13%	\$423,657 88.87%	\$0	\$0	\$0	\$0	\$0	\$476,721 100%	
TREASURERS CASH	\$2,093,410 100%	\$0	\$0	\$0	\$0	\$0	\$0	\$2,093,410 100%	
HOUSING FINANCE AGENCY	\$50,540 24.11%	\$159,090 75.89%	\$0	\$0	\$0	\$0	\$0	\$209,630 100%	
MINNESOTA DEBT SERVICE FUND	\$4,624 15.83%	\$24,585 84.17%	\$0	\$0	\$0	\$0	\$0	\$29,209 100%	
MISCELLANEOUS ACCOUNTS	\$45,009 28.86%	\$110,959 71.14%	\$0	\$0	\$0	\$0	\$0	\$155,968 100%	
GRAND TOTAL	\$2,791,198 12.32%	\$865,517 3.82%	\$7,190,205 31.75%	\$17,103 0.07%	\$9,713,536 42.89%	\$1,129,632 4.99%	\$941,187 4.16%	\$22,648,378 100%	

**STATE OF MINNESOTA
STATE BOARD OF INVESTMENT**

**Net Cash Flow Available For Investment
June 30, 1993 - September 30, 1993**

Teachers Retirement Fund	(\$132,300,000.00)
Public Employees Retirement Fund	(23,000,000.00)
State Employees Retirement Fund	(18,036,000.00)
Public Employees Police & Fire	0.00
Highway Patrol Retirement Fund	(959,000.00)
Judges Retirement Fund	900,000.00
Public Employees P&F Consolidated	103,488.17
Correctional Employees Retirement Fund	224,000.00
Post Retirement Fund	157,427,965.51
Supplemental Retirement Fund - Income	1,673,709.96
Supplemental Retirement Fund - Growth	(727,595.57)
Supplemental Retirement Fund - Money Market	(943,171.16)
Supplemental Retirement Fund - Index	1,565,503.74
Supplemental Retirement Fund - Bond Market	672,902.93
Supplemental Retirement Fund - Fixed Interest	(511,822.89)
Total Retirement Funds Net Cash Flow	(\$13,910,019.34)
Assigned Risk Plan	(\$4,994,010.60)
Permanent School Fund	3,311,927.16
Total Net Cash Flow	(\$15,592,102.78)

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT
Transaction and Asset Summary
Retirement Funds

	Net Transactions			Asset Summary (at Market Value)				
	Bonds (Millions)	Stocks (Millions)	Total (Millions)	Cash Flow (Millions)	Short-Term % of Fund	Bonds % of Fund	Equity % of Fund	Total Mkt. Value (Millions)
January 1990	-\$37	\$6	-\$31	\$85	3.9%	52.0%	44.1%	\$12,126
February	-12	115	103	48	3.4	51.1	45.5	12,232
March	-3	7	4	8	3.4	50.5	46.1	12,334
April	105	3	108	8	2.7	51.4	45.9	12,070
May	-6	27	21	52	2.8	50.0	47.2	12,721
June	23	-22	1	122	3.7	50.3	46.0	12,916
July	130	3	133	65	3.1	51.6	45.3	12,962
August	98	-38	60	53	3.2	53.3	43.5	12,293
September	61	-42	19	13	3.2	55.1	41.7	12,098
October	35	8	43	11	3.0	56.0	41.0	12,103
November	-58	61	3	106	3.7	54.2	42.1	12,652
December	-59	115	56	33	3.4	53.3	43.3	12,967
January 1991	6	-2	4	47	3.6	52.3	44.1	13,356
February	-6	11	5	60	3.9	50.6	45.5	13,790
March	82	1	83	6	3.3	50.8	45.9	13,961
April	-24	-9	-33	9	3.6	50.9	45.5	14,045
May	33	1	34	66	3.8	49.8	46.4	14,308
June	25	2	27	115	4.4	50.5	45.1	14,106
July	124	0	124	48	3.8	50.4	45.8	14,527
August	85	21	106	55	3.3	50.8	45.9	14,891
September	22	1	23	5	3.1	51.4	45.5	15,105
October	21	1	22	14	3.1	51.2	45.7	15,285
November	81	-48	33	64	3.3	52.3	44.3	15,083
December	-4	9	5	25	3.2	51.2	45.6	16,065
January 1992	-42	-3	-45	11	3.6	50.3	46.1	15,878
February	-19	0	-19	57	4.1	49.4	46.5	16,086
March	292	-300	-8	2	4.2	51.6	44.2	15,870
April	-6	2	-4	4	4.2	51.5	44.3	15,905
May	-13	5	-8	72	4.7	51.3	44.0	16,127
June	-22	0	-22	150	5.7	51.5	42.8	16,264
July	389	152	541	123	3.0	53.3	43.7	16,726
August	-149	151	2	-11	3.0	53.1	43.9	16,627
September	-200	200	0	-10	2.9	52.0	45.1	16,809
October	-282	282	0	10	2.9	49.8	47.3	16,771
November	-248	270	22	-9	2.7	47.5	49.8	17,057
December	-500	518	18	4	2.6	44.7	52.7	17,305
January 1993	-138	158	20	40	2.6	44.0	53.4	17,617
February	-253	266	13	2	2.6	42.9	54.5	17,811
March	-272	335	63	70	2.6	40.7	56.7	18,180
April	-412	423	11	8	2.6	38.9	58.5	18,101
May	-206	200	-6	1	2.5	37.2	60.3	18,387
June	-250	210	-40	15	2.8	36.3	60.9	18,573
July	-17	-26	-43	20	3.1	36.4	60.5	18,649
August	0	10	10	-12	3.0	36.0	61.0	19,183
September	6	1	7	-15	2.8	36.2	61.0	19,216

Tab C

EXECUTIVE DIRECTOR'S ADMINISTRATIVE REPORT

DATE: December 7, 1993

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

FROM: Howard Bicker

1. Budget Report

A report on the SBI's administrative budget for the period ending October 31, 1993 is in **Attachment A**.

2. Travel Report

A travel report for the period from August 16 - November 15, 1993 is included as **Attachment B**.

ATTACHMENT A

**STATE BOARD OF INVESTMENT
FISCAL YEAR 1994 ADMINISTRATIVE BUDGET REPORT
GENERAL FUND APPROPRIATION
FISCAL YEAR TO DATE THROUGH OCTOBER 31, 1993**

ITEM	FISCAL YEAR 1994 BUDGET	FISCAL YEAR 1994 EXPENDITURES
PERSONAL SERVICES		
CLASSIFIED EMPLOYEES	\$ 323,000	\$ 97,809
UNCLASSIFIED EMPLOYEES	1,127,000	327,919
SEVERENCE PAYOFF	0	2,662
WORKERS COMPENSATION INSURANCE	0	0
MISCELLANEOUS PAYROLL	7,000	1,782
SUBTOTAL	\$ 1,457,000	\$ 430,172
EXPENSES & CONTRACTUAL SERVICES		
RENTS & LEASES	85,000	27,317
REPAIRS/ALTERATIONS/MAINTENANCE	9,000	2,213
BONDS AND INSURANCE	1,000	959
PRINTING & BINDING	18,000	6,067
PROFESSIONAL/TECHNICAL SERVICES	54,000	0
DATA PROCESSING & SYSTEM SERVICES	202,500	50,625
PURCHASED SERVICES	35,000	8,383
SUBTOTAL	\$ 404,500	\$ 95,564
MISCELLANEOUS OPERATING EXPENSES		
COMMUNICATIONS	27,000	6,525
TRAVEL, IN-STATE	2,000	719
TRAVEL, OUT-STATE	40,000	7,169
FEES & OTHER FIXED CHARGES	8,000	2,506
SUBTOTAL	\$ 77,000	\$ 16,919
SUPPLIES/MATERIALS/PARTS	39,500	4,939
CAPITAL EQUIPMENT	35,000	0
TOTAL GENERAL FUND	\$ 2,013,000	\$ 547,594

ATTACHMENT B

STATE BOARD OF INVESTMENT

Travel Summary by Date
August 16, 1993 - November 15, 1993

<u>Purpose</u>	<u>Name(s)</u>	<u>Destination and Date</u>	<u>Total Cost</u>
Meeting With Consultant Richards & Tierney Manager Monitoring Weiss Peck, Brinson	H. Bicker	Chicago 9/2-3	\$771.65
Miscellaneous SIF Presentation	J. Heidelberg	9/16 Marshall, Dawson 9/20 St. Cloud	\$119.07
Miscellaneous Meeting with State Street Bank	M. Schmitt	9/22-26 Boston	\$1,224.66
Board Member Travel "Institutional Investment in Post Apartheid South Africa" sponsored by Global Business Access, Ltd.	J. Growe	10/1 Washington D.C.	\$1,473.00
Board Member Travel Council of Institutional Investors Annual Meeting	J. Growe M. McGrath L. Rotenberg	10/6-7 10/6-10 10/7-8 New York	\$527.17 \$1,097.16 \$349.00
Staff Conference National Association of State Investment Officers Annual Meeting	H. Bicker B. Lehman	10/17-20 Reno NV	\$1,945.20
Staff Education "Forum on Cooperation Between Shareholders and Corporations" sponsored by IRRC	J. Heidelberg	10/26-28	\$1,204.50

ATTACHMENT B (con't)

<u>Purpose</u>	<u>Name(s)</u>	<u>Destination and Date</u>	<u>Total Cost</u>
Staff Conference "Public Pension Fund Conference" sponsored by State Auditor	H. Bicker	10/28-30 Minneapolis	\$300.00
Board Member Travel "Public Pension Fund Conference" sponsored by State Auditor	J. Manahan	10/28-30 Minneapolis	\$300.00
Staff Conference "Should Pensions Be Used to Fix America?" sponsored by Pension 2000	H Bicker	11/3-5 Washington D C	\$1,348.20

Tab D



**STATE OF MINNESOTA
OFFICE OF THE STATE TREASURER**

303 State Administration Building
50 Sherburne Avenue
Saint Paul, Minnesota 55155

MICHAEL A. McGRATH
Treasurer

(612) 296-7091
Fax (612) 296-8615

DATE: December 7, 1993

TO: Members, State Board Investment

FROM: Michael McGrath, Chair
SBI Administrative Committee

SUBJECT: **Committee Report**

The SBI Administrative Committee met on November 22, 1993 to review the following agenda items:

INFORMATION ITEMS

1. Post Retirement Benefit Increase for January 1994

Mr. Bicker reported that the Post Retirement Fund will provide a post retirement benefit increase of 6.017% for eligible retirees effective January 1, 1994. This is the first increase granted under the new benefit increase formula enacted during the 1992 Legislative Session.

The benefit increase calculation has two components:

Inflation Component	2.8%
Investment Component	3.2%
Total Increase	6.0%

A more complete display of the calculation is included on **page 7**.

2. Fiscal Year 1993 Annual Report

A draft of the 1993 Annual Report was sent to Board members, IAC members and Board member designees last month with comments due by December 3, 1993. The final report will be sent to the printer in mid December and copies should be available for distribution by mid January 1994.

ACTION ITEMS

1. Approval of 1994 SBI Legislative Package

Mr. Bicker presented several items for the SBI's legislative package for the 1994 Session. The Committee discussed the proposal and is forwarding the following items to the Board for approval:

The changes can be summarized as follows:

- Add authority to invest in non rated debt. At its September 15, 1993 meeting the SBI approved a recommendation to seek legislative authority to invest in non rated debt and below investment grade debt. The draft statutory language reflects the guidelines approved by the Board.
- Remove international securities from the 35 percent cap placed on alternative investments. At its September 15, 1993 meeting the SBI approved removing international securities from the 35 percent cap placed on alternative investments.
- Clarification of investment authority to invest in mortgage securities, asset backed securities, bank collective funds, and real estate investment trusts. The SBI's authority to invest in mortgage securities and asset backed securities would be clarified to provide authority for all investment grade securities. The SBI's authority to invest in bank collective funds would be specified as well. The SBI would be allowed to invest in real estate investment trusts at a higher participation rate than authorized under current statute.
- Split the number of shares in Supplemental Investment Fund (SIF) accounts to reduce the share values of the accounts. The SBI would be authorized to split the shares of SIF accounts to reduce the share values of the accounts. The change would ease administrative handling of the accounts.
- Add an international account to the SIF. The addition of an international share account to the SIF would allow participants to expand their investment opportunities and further diversify their holdings. The account would use the same managers retained by the SBI to manage assets for the Basic and Post Funds.

- Make a technical correction to definition of required reserves for post retirement increase formula. The change would clarify the amount and date of the required reserves used in the formula to calculate the size of the investment increase portion of the post retirement increase.

Draft language for these changes begins on page 9.

RECOMMENDATION:

The Committee recommends that the SBI authorized the Executive Director to seek legislative approval of all statutory changes outlined above.

2. Recommendation from the Deferred Compensation Review Committee

Under legislation passed during the 1992 and 1993 Legislation sessions, the SBI is required to obtain consulting services to assist in its responsibilities with respect to several tax sheltered savings programs. Those plans are:

- 457 plan, the state's Deferred Compensation Plan.
- 401(a) plans with the Community College and State University Systems.
- 403(b) annuity program where local school districts provide an employer matching contribution negotiated by local labor agreements.

By statute, the SBI must retain consulting services to assist in soliciting bids and in periodically reviewing the services provided by the vendors retained.

The Deferred Compensation Review Committee met on November 3, 1993 to review responses to the request for proposal (RFP) for consulting services. The RFP was announced in the State Register on September 27, 1993 with responses due October 22, 1993. It was sent to 18 local and national benefit consulting firms. Three firms responded:

- Alexander & Alexander Consulting Group
- Foster Higgins
- Wyatt Asset Services

The Committee members are:

Peter Sausen, Chair	Governor's Designee
Christie Eller	State Attorney General's Designee
Jake Manahan	State Treasurer's Designee
Lisa Rotenberg	State Auditor's Designee
Elaine Voss	Secretary of State's Designee
Dave Bergstrom	Minnesota State Retirement System
Gary Austin	Teachers Retirement Association
Laurie Fiori Hacking	Public Employees Retirement Association

The Committee evaluated the responses for adherence to RFP requirements, perceived ability to meet the needs of the SBI for the services over the next three years, and the cost of the services proposed by the vendor. The Committee noted that each respondent had also submitted a proposal for the 403(b) Consultant RFP in 1992, and that the previous Search Committee had interviewed Foster Higgins and Wyatt at that time.

The current Committee concluded that Alexander & Alexander had submitted a proposal that was too costly. The Committee agreed that the Foster Higgins and Wyatt proposals properly addressed the services required in the RFP, but that Wyatt displayed a keener understanding of the issues involved. The Committee noted that the key individuals named in the current proposals by Foster Higgins and Wyatt were the same individuals interviewed in 1992. Based on the fact that in 1992 the Committee members had chosen Wyatt ahead of Foster Higgins after having interviewed both firms, the Committee concluded that it did not wish to interview the respondents. The Committee further noted that they were satisfied with Wyatt's work on the 403(b) project. The Committee concluded that The Wyatt Company offered the best opportunity to fulfill the SBI's needs in the deferred compensation area.

RECOMMENDATION:

The Committee recommends that the SBI authorize the executive director, with assistance from legal counsel, to negotiate and execute a contract with Wyatt Asset Services as deferred compensation consultant for a period of three years ending December 1996.

3. Approval of Dissolution of the Joint Product Agreement Between NWNL and MML

Northwestern National Life (NWNL) and Minnesota Mutual Life (MML) jointly provide a fixed annuity investment option to participants in the State's Deferred Compensation Plan. NWNL has asked to withdraw from the joint arrangement and has worked with MML to provide a proposal that will allow for orderly withdrawal.

Both companies have endorsed the proposal and are now seeking the necessary contractual changes to proceed with the withdrawal. By statute, the SBI must approve the contractual amendment.

Further information about the withdrawal appears in a memo to Board Members from Mr. Bicker beginning on **page 21**.

RECOMMENDATION:

The Committee recommends that the SBI authorize the executive director, with assistance from legal counsel, to negotiate and execute Contract Amendment Number 7 in substantially the form as presented in the attached material to effect the withdrawal of NWNL from its joint fixed annuity product offering with MML.

**MINNESOTA STATE BOARD OF INVESTMENT
CALCULATION OF JANUARY 1, 1994 BENEFIT INCREASE**

ACTUARILY VALUED REQUIRED RESERVES AT JAN. 1, 1994	6,875,719,000
LESS: RESERVES NOT ELIGIBLE FOR INCREASE	415,549,000
ACTUARILY DETERMINED ELIGIBLE RESERVES AT JAN. 1, 1994	6,460,170,000
CPI INFLATION RATE CAPPED AT 3.5%	2.800%
DOLLAR COST OF INFLATIONARY INCREASE	180,884,760
JUNE 30, 1993 TOTAL REQUIRED RESERVES	7,049,322,000
JUNE 30, 1993 TOTAL REQUIRED RESERVES ADJUSTED FOR INFLATIONARY INCREASE	7,230,206,760
MARKET VALUE OF ASSETS JUNE 30, 1993	8,269,233,081
LESS:	
INFLATION ADJUSTED REQUIRED RESERVES	7,230,206,760
CURRENT YEAR EXCESS MARKET VALUE	1,039,026,321
NEGATIVE BALANCE CARRYFORWARD	0
EXCESS MARKET VALUE AVAILABLE FOR INVESTMENT BASED BENEFIT INCREASE DIVIDED BY 5 YEAR PAY OUT PERIOD	1,039,026,321 5
CURRENT YEAR PORTION OF EXCESS MARKET VALUE	207,805,264
SECOND YEAR PORTION	0
THIRD YEAR PORTION	0
FOURTH YEAR PORTION	0
FIFTH YEAR PORTION	0
TOTAL FIVE YEAR	207,805,264
COST OF TRANSITION ADJUSTMENT	64,601,700
USE GREATER OF CURRENT YEAR EXCESS MARKET VALUE OR COST OF TRANSITION ADJUSTMENT	207,805,264
ELIGIBLE REQUIRED RESERVES JAN. 1, 1994	6,460,170,000
INVESTMENT BASED BENEFIT INCREASE	3.217%
INFLATION BASED BENEFIT INCREASE	2.800%
TOTAL BENEFIT INCREASE	6.017%
TOTAL DOLLAR VALUE OF BENEFIT INCREASE	\$388,690,024

1994 SBI LEGISLATIVE PACKAGE

DRAFT LEGISLATION

Sec. 1. Minnesota Statutes 1992, section 11A.17, subdivision 1, is amended to read:

Subdivision 1. **Purpose.** The purpose of the supplemental investment fund is to provide an investment vehicle for the assets of various public retirement plans and funds. The fund consists of ~~six~~ seven investment accounts: an income share account, a growth share account, an international share account, a money market account, a fixed interest account, a bond market account, and a common stock index account. The supplemental investment fund is a continuation of the supplemental retirement fund in existence on January 1, 1980.

Sec. 2. Minnesota Statutes 1992, section 11A.17, subdivision 9, is amended to read:

Subd. 9. **Valuation of investment shares.** The value of investment shares in the income share account, the growth share account, the international share account, the bond market account, and the common stock index account must be determined by dividing the total market value of the securities constituting the respective account by the total number of shares then outstanding in the investment account. When the value of investment shares in the income share account, the growth share account, the international share account, the bond market account, or the common stock index account exceeds \$10 a share, the state board may split on a 2 for 1 basis the number of shares in the account. The value of investment shares in the money market account and the fixed interest account is \$1 a share. Terms as to withdrawal schedules will be agreed upon by the public retirement fund and the state board.

Section 3. Minnesota Statutes 1992, section 11A.18, subdivision 9, is amended to read:

Subd. 9. **Calculation of postretirement adjustment.** (a) Annually, following June 30, the state board shall use the procedures in paragraphs (b), (c), and (d) to determine whether a postretirement adjustment is payable and to determine the amount of any postretirement adjustment.

(b) If the Consumer Price Index for urban wage earners and clerical workers all items index published by the Bureau of Labor Statistics of the United States Department of Labor increases from June 30 of the preceding year to June 30 of the current year, the state board shall certify the percentage increase. The amount certified may not exceed the lesser of the difference between the preretirement interest assumption and postretirement interest assumption in section 356.215, subdivision 4d, paragraph (a), or 3.5 percent.

(c) In addition to any percentage increase certified under paragraph (b), the board shall use the following procedures to determine if a postretirement adjustment is payable under this paragraph:

(1) The state board shall determine the market value of the fund on June 30 of that year;

(2) The amount of reserves required for the annuity or benefit payable to an annuitant and benefit recipient of the participating public pension plans or funds shall be determined by the commission-retained actuary as of the current June 30. An annuitant or benefit recipient who has been receiving an annuity or benefit for least 12 full months as of the current June 30 is eligible to receive a full postretirement adjustment. An annuitant or benefit recipient who has been receiving an annuity or benefit for at least one full month, but less than 12 full months as of the current June 30, is eligible to receive a partial postretirement adjustment. Each fund shall report separately the amount of the reserves for those annuitants and benefit recipients who are eligible to receive a full postretirement benefit adjustment. This amount is known as "eligible reserves." Each fund shall also report separately the amount of the reserves for those annuitants and benefit recipients who are not eligible to receive a postretirement adjustment. This amount is known as

"noneligible reserves." For an annuitant or benefit recipient who is eligible to receive a partial postretirement adjustment, each fund shall report separately as additional "eligible reserves" an amount that bears the same ratio to the total reserves required for the annuitant or benefit recipient as the number of full months of annuity or benefit receipt as of the current June 30 bears to 12 full months. The remainder of the annuitant's or benefit recipient's reserves shall be separately reported as additional "noneligible reserves." The amount of "eligible" and "noneligible" required reserves shall be certified to the board by the commission-retained actuary as soon as is practical following the current June 30;

(3) The state board shall determine the percentage increase certified under paragraph (b) multiplied by the eligible required reserves, as adjusted for mortality gains and losses under subdivision 11, determined under clause (2);

(4) The state board shall add the amount of ~~eligible and ineligible required reserves determined under clause (2)~~ required for the annuities or benefits payable to annuitants and benefit recipients of the participating public pension plans or funds as of the current June 30 to the amount determined under clause (3);

(5) The state board shall subtract the amount determined under clause (4) from the market value of the fund determined under clause (1);

(6) The state board shall adjust the amount determined under clause (5) by the cumulative current balance determined pursuant to clause (8) and any negative balance carried forward under clause (9);

(7) A positive amount resulting from the calculations in clauses (1) to (6) is the excess market value. A negative amount is the negative balance;

(8) The state board shall allocate one-fifth of the excess market value or one-fifth of the negative balance to each of five consecutive years, beginning with the fiscal year ending the current June 30; and

(9) To calculate the postretirement adjustment under this paragraph based on investment performance for a fiscal year, the state board shall add together all excess

market value allocated to that year and subtract from the sum of all negative balances allocated to that year. If this calculation results in a negative number, the entire negative balance must be carried forward and allocated to the next year. If the resulting amount is positive, a postretirement adjustment is payable under this paragraph. The board shall express a positive amount as a percentage of the total eligible required reserves certified to the board under clause (2).

(d) The state board shall determine the amount of any postretirement adjustment which is payable using the following procedure:

(1) The total "eligible" required reserves as of the first of January next following the end of the fiscal year for the annuitants and benefit recipients eligible to receive a full or partial postretirement adjustment as determined by clause (2) shall be certified to the state board by the commission-retained actuary. The total "eligible" required reserves shall be determined by the commission-retained actuary on the assumption that all annuitants and benefit recipients eligible to receive a full or partial postretirement adjustment will be alive on the January 1 in question; and

(2) The state board shall add the percentage certified under paragraph (b) to any positive percentage calculated under paragraph (c). The board shall not subtract from the percentage certified under paragraph (b) any negative amount calculated under paragraph (c). The sum of these percentages shall be carried to five decimal places and shall be certified to each participating public pension fund or plan as the full postretirement adjustment percentage.

(e) A retirement annuity payable in the event of retirement before becoming eligible for social security benefits as provided in section 352.116, subdivision 3; 353.29, subdivision 6; or 354.35 must be treated as the sum of a period certain retirement annuity and a life retirement annuity for the purposes of any postretirement adjustment. The period certain retirement annuity plus the life retirement annuity shall be the annuity amount payable until age 62 or 65, whichever applies. A postretirement adjustment

granted on the period certain retirement annuity must terminate when the period certain retirement annuity terminates.

Sec. 4. Minnesota Statutes 1993 Supplement, section 11A.24, subdivision 1, is amended to read:

Subdivision 1. **Securities generally.** The state board shall have the authority to purchase, sell, lend or exchange the following securities for funds or accounts specifically made subject to this section including puts and call options and future contracts traded on a contract market regulated by a governmental agency or by a financial institution regulated by a governmental agency. These securities may be owned as units in commingled trusts that own the securities described in subdivisions 2 to 5 ~~6~~.

Sec. 5. Minnesota Statutes, section 11A.24, subdivision 3, is amended to read:

Subd. 3 **Corporate obligations.** ~~(a)~~ (a) The state board may invest funds in bonds, notes, debentures, transportation equipment obligations, or any other longer term evidences of indebtedness issued or guaranteed by a corporation organized under the laws of the United States or any state thereof, or the Dominion of Canada or any province thereof ~~if they conform to the following provisions provided that:~~

~~(a)~~ (1) the principal and interest obligations of corporations incorporated or organized under the laws of the Dominion of Canada or any province thereof shall be payable in United States dollars; and

~~(b)~~ (2) obligations shall be rated among the top four quality categories by a nationally recognized rating agency.

(b) The state board may invest in unrated corporate obligations or corporate obligations not rated among the top four quality categories provided that:

(1) the aggregate value of these obligations may not exceed 5 percent of the market or book value, whichever is less, of the fund for which the state board is investing;

(2) the state board's participation is limited to 50 percent of a single offering subject to this clause, and

(3) the state board's participation is limited to 25 percent of an issuer's obligations subject to this clause

Sec. 6. Minnesota Statutes 1993 Supplement, section 11A.24, subdivision 4, is amended to read

Subd. 4. **Other obligations.** (a) The state board may invest funds in bankers acceptances, certificates of deposit, deposit notes, commercial paper, mortgage ~~participation certificates and pools~~ and asset backed securities, repurchase agreements and reverse repurchase agreements, guaranteed investment contracts, savings accounts, and guaranty fund certificates, surplus notes, or debentures of domestic mutual insurance companies if they conform to the following provisions:

(1) bankers acceptances and deposit notes of United States banks are limited to those issued by banks rated in the highest four quality categories by a nationally recognized rating agency;

(2) certificates of deposit are limited to those issued by (i) United States banks and savings institutions that are rated in the ~~highest~~ top four quality categories by a nationally recognized rating agency or whose certificates of deposit are fully insured by federal agencies; or (ii) credit unions in amounts up to the limit of insurance coverage provided by the National Credit Union Administration.

(3) commercial paper is limited to those issued by United States corporations or their Canadian subsidiaries and rated in the ~~highest~~ top two quality categories by a nationally recognized rating agency;

(4) ~~mortgage participation or pass through certificates evidencing interests in pools of first mortgages are trust deeds on improved real estate located in the United States where the loan to value ratio for each loan as calculated in accordance with section 61A.28,~~

~~subdivision 3, does not exceed 80 percent for fully amortizable residential properties and in all other respects meets the requirements of section 61A.28, subdivision 3, securities shall be rated among the top four quality categories by a nationally recognized rating agency.~~

(5) collateral for repurchase agreements and reverse repurchase agreements is limited to letters of credit and securities authorized in this section;

(6) guaranteed investment contracts are limited to those issued by insurance companies or banks rated in the top four quality categories by nationally recognized rating agency or to alternative guaranteed investment contracts where the underlying assets comply with the requirements of this section; and

(7) savings accounts are limited to those fully insured by federal agencies; and

(8) asset backed securities shall be rated in the top four quality categories by a nationally recognized rating agency.

(b) Sections 16A.58 and 16B.06 do not apply to certificates of deposit and collateralization agreements executed by the state board under paragraph (a), clause (2).

(c) In addition to investments authorized by paragraph (a), clause (4), the state board may purchase from the Minnesota housing finance agency all or any part of a pool of residential mortgages, not in default, that has previously been financed by the issuance of bonds or notes of the agency. The state board may also enter into a commitment with the agency, at the time of any issue of bonds or notes, to purchase at a specified future date, not exceeding 12 years from the date of the issue, the amount of mortgage loans then outstanding and not in default that have been made or purchased from the proceeds of the bonds or notes. The state board may charge reasonable fees for any such commitment and may agree to purchase the mortgage loans at a price sufficient to produce a yield to the state board comparable, in its judgment, to the yield available on similar mortgage loans at the date of the bonds or notes. The state board may also enter into agreements with the agency for the investment of any portion of the funds of the agency. The agreement must

cover the period of the investment, withdrawal privileges, and any guaranteed rate of return.

Sec. 7. Minnesota Statutes 1992 section 11A.24, subdivision 5, is amended to read:

Subd. 5 **Corporate stocks.** The state board may invest funds in stocks or convertible issues of any corporation organized under the laws of the United States or the states thereof, the Dominion of Canada or its provinces, or any corporation listed on the New York Stock Exchange or the American Stock Exchange, if they conform to the following provisions:

(a) The aggregate value of corporate stock investments, as adjusted for realized profits and losses, shall not exceed 85 percent of the market or book value, whichever is less, of a fund, less the aggregate value of investments according to subdivision 6;

(b) Investments shall not exceed five percent of the total outstanding shares of any one corporation, except that the state board may hold up to 20 percent of the shares of a real estate investment trust

Sec. 8. Minnesota Statutes 1992 section 11A.24, subdivision 6, is amended to read:

Subd. 6 **Other investments.** (a) In addition to the investments authorized in subdivisions 1 to 5, and subject to the provisions in paragraph (b), the state board may invest funds in:

(1) Venture capital investment businesses through participation in limited partnerships and corporations,

(2) real estate ownership interests or loans secured by mortgages or deeds of trust through investment in limited partnerships, bank sponsored collective funds, trusts, shares of real estate investment trusts, mortgage participation certificates, and insurance company commingled accounts, including separate accounts;

(3) regional and mutual funds through bank sponsored collective funds and open-end investment companies registered under the Federal Investment Company Act of 1940;

(4) resource investments through limited partnerships, private placements and corporations; and

(5) international securities.

(b) The investments authorized in paragraph (a) must conform to the following provisions:

(1) the aggregate value of all investments made according to paragraph (a), clauses (1) through (4) may not exceed 35 percent of the market value of the fund for which the state board is investing;

(2) there must be at least four unrelated owners of the investment other than the state board of investments made under paragraph (a), clause (1), (2), (3), or (4);

(3) state board participation in an investment vehicle is limited to 20 percent thereof for investments made under paragraph (a), clause (1), (2), (3), or (4); and

(4) state board participation in a limited partnership does not include a general partnership interest or other interest involving general liability . The state board may not engage in any activity as a limited partner which creates general liability.

Sec. 9. Minnesota Statutes 1993 Supplement, section 352D.04, subdivision 1, is amended to read:

Subdivision 1. (a) An employee exercising an option to participate in the retirement program provided by this chapter may elect to purchase shares in one or a combination of the income share account, the growth share account, the international share account, the money market account, the bond market account, the fixed interest account, or the common stock index account established in section 11A.17. The employee may elect to participate in one or more of the investment accounts in the fund by specifying, on a form

provided by the executive director, the percentage of the employee's contributions provided in subdivision 2 to be used to purchase shares in each of the accounts

(b) A participant may indicate in writing on forms provided by the Minnesota state retirement system a choice of options for subsequent purchases of shares. Until a different written indication is made by the participant, the executive director shall purchase shares in the supplemental fund as selected by the participant. If no initial option is chosen, 100 percent income shares must be purchased for a participant. A change in choice of investment option is effective no later than the first pay date first occurring after 30 days following the receipt of the request for a change.

(c) One month before the start of a new guaranteed investment contract, a participant or former participant may elect to transfer all or a portion of the participant's shares previously purchased in the income share, growth share, common stock index, bond market, international share, or money market accounts to the new guaranteed investment contract in the fixed interest account. Upon expiration of a guaranteed investment contract, the participant's shares attributable to that contract must be transferred to a new guaranteed investment contract unless the executive director is otherwise directed by the participant. Shares in the fixed interest account may not be withdrawn from the fund or transferred to another account until the guaranteed investment contract has expired unless the participant qualifies for withdrawal under section 352D.05 or for benefit payments under sections 352D.06 to 352D.075

(d) A participant or former participant may also change the investment options selected for all or a portion of the participant's shares previously purchased in accounts other than the fixed interest account. Changes in investment options for the participant's shares must be effected as soon as cash flow to an account practically permits, but no later than six months after the requested change.

Sec. 10. Minnesota Statutes 1992, section 353D.05, subdivision 2, is amended to read:

Subd. 2. **Investment options.** (a) A participant may elect to purchase shares in the income share account, the growth share account, the international share account, the money market account, the bond market account, the fixed interest account, or the common stock index account established by section 11A.17, or a combination of those accounts. The participant may elect to purchase shares in a combination of those accounts by specifying the percentage of the total contributions to be used to purchase shares in each of the accounts.

(b) A participant or a former participant may indicate in writing a choice of options for subsequent purchases of shares. After a choice is made, until the participant or former participant makes a different written indication, the executive director of the association shall purchase shares in the supplemental investment account or accounts specified by the participant. If no initial option is indicated by a participant or the specifications made by the participant exceeds 100 percent to be invested in more than one account, the executive director shall invest all contributions made by or on behalf of a participant in the income share account. If the specifications are less than 100 percent, the executive director shall invest the remaining percentage in the income share account. A choice of investment options is effective the first of the month following the date of receipt of the signed written choice of options.

(c) One month before the start of a new guaranteed investment contract, a participant or former participant may elect to transfer all or a portion of the participant's or former participant's shares previously purchased in the income share, growth share, common stock index, bond market, international share, or money market accounts to the new guaranteed investment contract in the fixed interest account. Upon expiration of a guaranteed investment contract, the participant's or former participant's shares attributable to that contract must be transferred to a new guaranteed investment contract unless the

executive director is otherwise directed by the participant. Shares in the fixed interest account may not be withdrawn from the fund or transferred to another account until the guaranteed investment contract has expired, unless the participant qualified for a benefit payment under section 353D.07.

(d) A participant or former participant may also change the investment options selected for all or a portion of the individual's previously purchased shares in accounts other than the guaranteed return account. A change under this paragraph is effective the first of the month following the date of receipt of a signed written choice of options.

(e) The change or selection of an investment option or the transfer of all or a portion of the deceased or former participant's shares in the income share, growth share, common stock index, bond market, international share, money market, or ~~guaranteed investment fixed interest~~ accounts must not be made following death of the participant or former participant.

**MINNESOTA
STATE
BOARD OF
INVESTMENT**



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Mark B. Dayton

State Treasurer
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Attorney General
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Executive Director:

Howard J. Bicker

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DATE: December 7, 1993

TO: Members, State Board of Investment

FROM: Howard Bicker

SUBJECT: Dissolution of the Joint Product Arrangement Between
Northwestern National Life and Minnesota Mutual Life

The fixed annuity option offered by Minnesota Mutual to participants of the state Deferred Compensation Plan is actually a joint product offering between Minnesota Mutual Life (MM) and Northwestern National Life (NWNL). MM and Great-West Life are the two outside vendors offering investment options for the Deferred Compensation Plan. MM and NWNL maintained a joint arrangement for several plan offerings: State University 403(b) annuities, University of Minnesota retirement plans, and the state Deferred Compensation Plan.

The joint arrangement calls for half of all incoming contributions to go to each company and for each company to jointly guarantee the principal amount of the fixed annuities under the arrangement. The joint guarantee means that each company guarantees 100 percent of the principal even though it receives only 50 percent of the contributions. In the event, for example, that NWNL went out of business, MM would be liable to make good on 100 percent of the principal under the arrangement.

As part of a corporate refocusing, NWNL recently withdrew from the the group pension business. The company no longer devotes resources to the 457 plan area and cannot offer the underwriting support to effectively price future annuity products. The result is that NWNL wishes to withdraw from the joint product arrangement. The company has worked with MM to offer a proposal for the orderly withdrawal from the arrangement. NWNL put forth its proposal earlier in 1993 and has stated it would abide by the agreement if approved and implemented by December 31, 1993.

The State University System and the University of Minnesota have agreed to the withdrawal under essentially the same terms as presented.

The proposal has several features:

- NWNL and MM will maintain their joint liability on remaining assets over the period.
- 100 percent of new contributions after the effective date are invested by MM and become MM liabilities;
- NWNL will transfer Plan assets it currently holds to MM over a ten year period;
- NWNL will pay a stipulated interest rate on remaining assets over the same period;
- MM will blend this interest rate with its credited rate before crediting member accounts.

Minnesota State Retirement System had its consultant, Thomas Cavanaugh of Gabriel Roeder Smith & Co., review the proposed joint underwriting agreement and proposed contract amendments and the impact the change would have on the investment risk associated with the fixed product in question. Mr. Cavanaugh concluded that if a few minor issues in the underwriting agreement were answered satisfactorily "it is in the best interests of the Plan and its participants to allow the NWNL phase-out as proposed." In subsequent discussions and correspondence these issues were resolved. The rates at which the payments are to be made appear reasonable and, as stipulated in the amendments, have been agreed to by NWNL and MM.

The contract between the State and NWNL/MM for the Deferred Compensation plan must be amended and, by statute, must be approved by the Board

CONTRACT AMENDMENT NUMBER 7

By agreement by and among THE MINNESOTA STATE BOARD OF INVESTMENT, NORTHWESTERN NATIONAL LIFE INSURANCE COMPANY (herein "Northwestern National") and THE MINNESOTA MUTUAL LIFE INSURANCE COMPANY (herein "Minnesota Mutual"), Group Annuity Contract 844047 is amended as follows:

1. The three paragraphs on page 1 of the Contract are deleted in their entirety and are replaced with the following:

This contract is issued to the Contractholder jointly by Northwestern National Life Insurance Company (herein "Northwestern National") and The Minnesota Mutual Life Insurance Company (herein "Minnesota Mutual"), both of which may be referred to in this contract as "the Insurers," subject to the provisions of that certain Joint Underwriting Agreement, dated _____, 1993, by and between Northwestern National and Minnesota Mutual (herein the "Underwriting Agreement"), which Underwriting Agreement is attached to this contract and is made a part hereof.

The Underwriting Agreement describes certain obligations under this contract for which Northwestern National is not liable, and, with respect to such obligations, Northwestern National shall not be an issuer of this contract and the Contractholder shall not be a Contractholder of the Northwestern National, nor shall the term "Insurers" wherever appearing in this contract refer to Northwestern National.

The Insurers agree to accept contributions hereunder from the Contractholder, to invest and account for such contributions in the manner provided herein, and to pay benefits in such amounts and to such persons as are designated in writing by the Contractholder; provided, in accordance with the Underwriting agreement, that contributions hereunder on and after July 1, 1993 shall be received solely by Minnesota Mutual and Minnesota Mutual shall have sole responsibility to invest and account for, and to pay benefits attributable to, such contributions.

Northwestern National and Minnesota Mutual are jointly and severally liable only for those benefits and payments provided by this contract attributable to contributions received under this contract prior to July 1, 1993, as more fully set forth in the Underwriting Agreement. The obligations under this contract, exclusive of obligations for purchased Annuity Payments which are paid pursuant to annuities having annuity commencement dates prior to July 1, 1993 ("Guaranteed Annuity Payments"), shall become the sole liability of Minnesota Mutual on the later of: (1) July 1, 2003, or (2) the date on which Northwestern National shall have satisfied all of its obligations to make payments to Minnesota Mutual, exclusive of payments required in connection with Guaranteed Annuity Payments, in accordance with the Underwriting Agreement.

2. The first paragraph of Subsection 5.02 of the Contract is amended to read as follows:

This contract may be modified at any time by written agreement between Minnesota Mutual and the Contractholder if only benefits for which Minnesota Mutual is solely liable, as specified in the Underwriting Agreement, are affected by the modification. The contract may be modified at any time by written agreement between Minnesota Mutual, Northwestern National and the Contractholder when benefits for which Minnesota Mutual and Northwestern National are jointly and severally liable, as specified in the Underwriting Agreement, are affected by the modification.

These amendments shall be effective on July 1, 1993.

Agreed to on this ____ day of _____, 1993 for the parties as indicated below.

For NORTHWESTERN NATIONAL LIFE
INSURANCE COMPANY
Minneapolis, Minnesota

For THE MINNESOTA MUTUAL LIFE
INSURANCE COMPANY
Saint Paul, Minnesota

By: _____

By: _____

Position: _____

Position: _____

For the MINNESOTA STATE RETIREMENT
SYSTEM

For the MINNESOTA STATE BOARD OF
INVESTMENT

By: _____

By: _____

Position: _____

Position: _____

Approved as to form and Execution
by the Attorney General's Office

By: _____

Assistant Attorney General

**STATE DEFERRED COMPENSATION
JOINT UNDERWRITING AGREEMENT**

This Agreement, made this _____ day of _____, 1993, between the Northwestern National Life Insurance Company, Minneapolis, Minnesota, a Minnesota corporation (herein "Northwestern National") and The Minnesota Mutual Life Insurance Company, Saint Paul, Minnesota, a Minnesota corporation (herein "Minnesota Mutual") (Northwestern National and Minnesota Mutual hereinafter collectively referred to as the "Insurers") describes the relationship of Northwestern National and Minnesota Mutual with respect to the contractual obligations as described in the recitals below.

RECITALS

- (A) The Insurers are life insurance companies organized under the laws of the State of Minnesota.
- (B) The Insurers have jointly issued a number of group annuity contracts, group life contracts, and individual annuity policies. The Insurers have executed an Agreement, made on the 1st day of January, 1992, (herein "Prior Agreement") which describes the rights, duties and obligations of the Insurers with respect to those contracts and policies.
- (C) This Agreement is intended to further describe the obligations of the Insurers with respect to Group Deferred Annuity Contract 844047 issued to The Minnesota State Board of Investment and having an effective date of October 1, 1980 (herein "the Contract").

- (D) Prior to the Effective Date of this Agreement, payments of obligations under the Contract may be satisfied by Northwestern National, by Minnesota Mutual, or jointly by the two of them. Also prior to the Effective Date of this Agreement, it has been the understanding of the Insurers that each of them was responsible and contractually liable for fifty percent (50%) of any payment, benefit or disbursement under the Contract where such payment was properly made in satisfaction of a claim against the Insurers under the Contract.
- (E) This Agreement shall supersede that Prior Agreement and shall be interpreted to entirely describe all of the rights, duties and obligations of the Insurers with respect to the Contract.
- (F) It is the intent of the Insurers that, to the extent that Northwestern National is not jointly and severally liable with Minnesota Mutual for certain obligations under the Contract in accordance with the terms of this Agreement, Northwestern National shall not be considered to have issued the Contract nor to be an insurer under the Contract, nor shall any holder of the Contract ("Contractholder") be considered to be a Contractholder of Northwestern National, with respect to such obligations. It is also the intent of the Insurers to modify their respective obligations pursuant to the Contract in a manner consistent with this Agreement by means of certain amendments to the Contract effective as of July 1, 1993.

(G) It is further the intent of the parties that, to the extent that obligations under the Contracts are joint and several liabilities of the Insurers, those obligations shall remain joint and several liabilities of both Insurers until all payments required of each Insurer to the other, as described herein, are satisfied.

Accordingly, in consideration of the mutual covenants and agreements herein contained, it is agreed between the Insurers:

1. ADMINISTRATION OF THE CONTRACTS.

(A) To facilitate the handling of all matters relating to the management and administration of the Contract, Minnesota Mutual currently has the responsibility for all matters of contract administration under the Contract. It shall continue to:

- (1) collect premiums or other contract contributions from the Contractholder under the Contract;
- (2) establish and maintain contract and participant records under the Contract; and
- (3) be responsible for the disbursement of all funds which shall become payable under the Contract. Acting in this administrative role, Minnesota Mutual shall continue to act for itself and for Northwestern National to the extent that

Northwestern National remains jointly and severally liable for obligations under the Contract.

2. PREMIUMS.

On and after July 1, 1993, Minnesota Mutual shall be entitled to receive and retain one hundred percent (100%) of the premiums or contributions received under the Contract.

3. LIABILITIES.

(A) Joint Liabilities.

- (1) Current Purchased Annuity Benefits. The Insurers shall each remain jointly and severally liable for all annuity payments made under the Contract which are paid pursuant to annuities having annuity commencement dates prior to July 1, 1993 ("Annuity Payments").
- (2) Withdrawals From Current Accumulations. The Insurers shall continue to be jointly and severally liable for all withdrawals and payments under the Contract, other than for Annuity Payments, which are attributable to premiums and contributions received prior to July 1, 1993. This liability shall be equal to the sum of the accumulation values under the Contract which

are attributable to premiums and contributions received prior to July 1, 1993 (hereinafter "Joint Fund Liability").

- (3) Division of Joint Fund Liability. Effective July 1, 1993, and as of the beginning of each calendar quarter thereafter, the Joint Fund Liability shall be divided into the Northwestern National liability ("NWNL Liability") and the Minnesota Mutual liability ("MML Liability") as follows:

- (a) NWNL Liability. The NWNL Liability as of the beginning of any calendar quarter shall be the sum of:

- (i) the lesser of:

- (a) the Joint Fund Liability as described in Section 3(A)(2) above; or

- (b) the dollar amount of total Tabular NWNL Liability as determined from the following table as may be adjusted in accordance with Section 4(C).

For the Calendar <u>Quarter Beginning:</u>	<u>Tabular NWNL Liability at the Beginning of the Calendar Quarter</u>
July 1, 1993	\$76,238,151.00
October 1, 1993	74,728,000.32
January 1, 1994	72,865,979.95
April 1, 1994	70,371,028.97
July 1, 1994	69,045,677.28
October 1, 1994	67,459,959.15
January 1, 1995	66,422,425.25
April 1, 1995	63,663,943.94
July 1, 1995	62,752,168.69
October 1, 1995	60,723,487.62
January 1, 1996	58,628,033.68
April 1, 1996	56,951,876.24
July 1, 1996	54,457,508.64
October 1, 1996	52,207,491.48
January 1, 1997	49,683,326.31
April 1, 1997	47,752,832.50
July 1, 1997	45,510,321.77
October 1, 1997	43,871,478.64
January 1, 1998	42,142,227.36
April 1, 1998	39,666,096.80
July 1, 1998	37,624,521.34
October 1, 1998	35,683,579.23
January 1, 1999	33,894,147.10
April 1, 1999	30,551,925.27

<u>For the Calendar Quarter Beginning:</u>	<u>Tabular NWNL Liability at the Beginning of the Calendar Quarter</u>
July 1, 1999	28,983,294.92
October 1, 1999	26,899,747.75
January 1, 2000	24,787,547.05
April 1, 2000	22,529,957.87
July 1, 2000	20,333,269.80
October 1, 2000	18,596,979.21
January 1, 2001	17,479,446.61
April 1, 2001	16,020,144.57
July 1, 2001	13,711,187.63
October 1, 2001	12,440,336.02
January 1, 2002	10,843,924.37
April 1, 2002	7,672,389.04
July 1, 2002	5,290,187.25
October 1, 2002	3,715,928.08
January 1, 2003	3,094,997.63
April 1, 2003	1,019,466.43
July 1, 2003	0.00

and

(ii) the balance of all unpaid past due quarterly payments under Section 4(B) with interest thereon, as determined in accordance with Section 5(A).

(b) MML Liability. The MML Liability as of the beginning of any calendar quarter shall be equal to the excess, if any, of the Joint Fund Liability over the NWNL Liability.

(B) Liabilities Solely Of Minnesota Mutual.

(1) Withdrawals and Payments. Minnesota Mutual shall be solely liable for all withdrawals and payments under the Contract which are attributable to premiums and contributions received on or after July 1, 1993.

(2) Annuity Benefits Purchased On Or After Effective Date. Minnesota Mutual shall be solely liable for all annuity payments under the Contract which are paid pursuant to annuities having annuity commencement dates on or after July 1, 1993.

4. AMOUNTS DUE MINNESOTA MUTUAL FROM NORTHWESTERN NATIONAL.

(A) Reimbursement for Annuity Payments. Northwestern National will reimburse Minnesota Mutual 50% of all Annuity Payments, as described in Section 3(A)(1) of this Agreement. Such reimbursement will be made on the first day of the month following the date of any Annuity Payment.

(B) Quarterly Payments. Northwestern National shall pay to Minnesota Mutual on the first business day of each calendar quarter one of the following amounts:

(1) Whenever the Joint Fund Liability exceeds the Tabular NWNL Liability at the beginning of both the prior calendar quarter and the current calendar quarter, Northwestern National shall pay to Minnesota Mutual the applicable amount shown in the table below (as adjusted in accordance with Section 4(C)). The amounts due from Northwestern National pursuant to this section 4(B) (1) are in addition to any amounts due under Section 4(A).

For the Calendar

<u>Quarter Beginning:</u>	<u>Quarterly Scheduled Payment</u>
October 1, 1993	\$2,830,574.00
January 1, 1994	3,198,868.00
April 1, 1994	3,729,303.00
July 1, 1994	2,542,691.00
October 1, 1994	2,722,985.00
January 1, 1995	2,173,581.00
April 1, 1995	3,852,540.00
July 1, 1995	1,994,319.00
October 1, 1995	3,021,581.00
January 1, 1996	3,088,905.00
April 1, 1996	2,603,803.00
July 1, 1996	3,415,905.00
October 1, 1996	3,114,775.00

For the Calendar

<u>Quarter Beginning:</u>	<u>Quarterly Scheduled Payment</u>
January 1, 1997	3,362,277.00
April 1, 1997	2,693,517.00
July 1, 1997	2,992,495.00
October 1, 1997	2,328,648.00
January 1, 1998	2,401,499.00
April 1, 1998	3,093,904.00
July 1, 1998	2,636,215.00
October 1, 1998	2,483,984.00
January 1, 1999	2,321,379.00
April 1, 1999	3,804,655.00
July 1, 1999	2,004,765.00
October 1, 1999	2,484,350.00
January 1, 2000	2,496,407.00
April 1, 2000	2,589,118.00
July 1, 2000	2,511,066.00
October 1, 2000	1,996,339.00
January 1, 2001	1,363,445.00
April 1, 2001	1,685,380.00
July 1, 2001	2,518,372.00
October 1, 2001	1,441,949.00
January 1, 2002	1,755,084.00
April 1, 2002	3,303,861.00
July 1, 2002	2,477,943.00
October 1, 2002	1,637,789.00

For the Calendar

Quarter Beginning: Quarterly Scheduled Payment

January 1, 2003	666,043.00
April 1, 2003	2,111,480.00
July 1, 2003	1,031,575.00

The payments listed in the above table shall be adjusted to reconcile any variances attributable to the differences between the estimated and actual NWNL Liability for July 1, 1993.

- (2) Whenever the Tabular NWNL Liability exceeds the Joint Fund Liability at the beginning of either the prior or current calendar quarter, Northwestern National shall pay to Minnesota Mutual an amount equal to (a), minus (b), plus (c), where:

(a) is the lesser of the Joint Fund Liability or the Tabular NWNL Liability at the beginning of the prior calendar quarter;

(b) is the lesser of the Joint Fund Liability or the Tabular NWNL Liability at the beginning of such current calendar quarter, increased by the sum of any payments made in accordance with Section 4(C) during the prior calendar quarter; and

(c) is interest for the prior calendar quarter in an amount determined by applying the corresponding rate specified in Section 5(A) to the lesser of the Joint Fund Liability or the Tabular NWNL Liability at the beginning of the prior calendar quarter.

Payments due pursuant to this Section 4(B)(2) shall be in addition to amounts owed to Minnesota Mutual under Section 4(A). In the event a payment is due under this Section 4(B)(2), Northwestern National may delay payment until the total amount due Minnesota Mutual is determined. Such payment will accrue interest from the beginning of the quarter to the date of payment in accordance with Section 5(A).

In the event that the conditions described in this Subparagraph 4(B)(2) are the result of a termination of the Contract giving rise to the payment of a Lump Sum Transfer Value, as defined in the Contract, then the payment due Minnesota Mutual shall be adjusted by the market value adjustment percentage as is determined to be appropriate by Northwestern National.

(C) Extraordinary Withdrawals. For purposes of this Section 4(C), the terms set forth below shall be defined as follows:

"Total Accumulation Value" means, as of the beginning of the current calendar quarter, the sum of (a) the Joint Fund Liability and (b) the liabilities under the Contract attributable to premiums and contributions received on or after July 1, 1993.

"Extraordinary Withdrawals" means withdrawals from the Contract during a calendar quarter in excess of 3% of the Total Accumulation Value as of the beginning of that calendar quarter.

Whenever an Extraordinary Withdrawal occurs, Northwestern National shall pay to Minnesota Mutual at the end of such calendar quarter an amount equal to [(a), minus (b), minus (c)] multiplied by (d), where:

- (a) is the portion of the Extraordinary Withdrawal attributable to withdrawals from the Joint Fund Liability, using a first-in, first-out method, during such calendar quarter;
- (b) is the sum of contributions made under the Contract during such calendar quarter, multiplied by the ratio of the beginning of quarter NWNL Liability to Total Accumulation Value;
- (c) is the amount of any Northwestern National payments due or paid pursuant to Section 4(B) during such calendar quarter;
- and

(d) is a fraction, of which the numerator is the NWNL Liability and the denominator is the Joint Fund Liability, both as of the beginning of such calendar quarter.

If the resulting amount is less than zero, no payment shall be due from either Insurer.

No payment due under this Section 4(C) shall be in excess of the sum of the next four quarterly payments due under the Table Described in Section 4(B)(1). Northwestern National may delay payment until the total amount due Minnesota Mutual is determined. Such payment will accrue interest in accordance with Section 5(A) from the first day of the immediately following calendar quarter to the date of payment.

Following any payment made by Northwestern National pursuant to this Section 4(C), the Insurers shall adjust and restate the table of Tabular NWNL Liability in Section 3(A)(3)(a) and the table of quarterly payments in Section 4(B)(1) to reflect the effect of such payments.

(D) Payment of Past Due Amounts. In addition to the amounts due under Sections 4(A), 4(B) and 4(C) in any calendar quarter, Northwestern National shall pay to Minnesota Mutual as of the beginning of any calendar quarter an amount equal to the balance of all unpaid past due payments hereunder with the interest thereon, as determined in accordance with Section 5(B).

5. NORTHWESTERN NATIONAL INTEREST CREDITS.

(A) The Northwestern National interest rate credited during a calendar quarter shall be the corresponding effective annual interest rate listed in the following table, which shall be the rate applied in determining the NWNL Liability described in Section 3(A)(3) and the quarterly payments described in Section 4(B):

<u>For Quarter</u> <u>Beginning</u>	<u>Effective Annual</u> <u>Interest Rate</u>	<u>For Quarter</u> <u>Beginning</u>	<u>Effective Annual</u> <u>Interest Rate</u>
July 1, 1993	7.05%	July 1, 1998	5.85%
October 1, 1993	7.05%	October 1, 1998	5.85%
January 1, 1994	7.05%	January 1, 1999	5.85%
April 1, 1994	7.05%	April 1, 1999	5.85%
July 1, 1994	6.85%	July 1, 1999	5.60%
October 1, 1994	6.85%	October 1, 1999	5.60%
January 1, 1995	6.85%	January 1, 2000	5.60%
April 1, 1995	6.85%	April 1, 2000	5.60%
July 1, 1995	6.65%	July 1, 2000	5.35%
October 1, 1995	6.65%	October 1, 2000	5.35%
January 1, 1996	6.65%	January 1, 2001	5.35%
April 1, 1996	6.65%	April 1, 2001	5.35%
July 1, 1996	6.45%	July 1, 2001	5.10%
October 1, 1996	6.45%	October 1, 2001	5.10%
January 1, 1997	6.45%	January 1, 2002	5.10%
April 1, 1997	6.45%	April 1, 2002	5.10%

<u>For Quarter</u> <u>Beginning</u>	<u>Effective Annual</u> <u>Interest Rate</u>	<u>For Quarter</u> <u>Beginning</u>	<u>Effective Annual</u> <u>Interest Rate</u>
July 1, 1997	6.15%	July 1, 2002	4.85%
October 1, 1997	6.15%	October 1, 2002	4.85%
January 1, 1998	6.15%	January 1, 2003	4.85%
April 1, 1998	6.15%	April 1, 2003	4.85%

(B) Interest payable by Northwestern National on outstanding past due amounts due Minnesota Mutual shall be equal to the 10-Year U.S. Treasury rate, increased by one hundred fifty basis points, applied to such outstanding past due amounts. The 10-Year U.S. Treasury rate will be determined as of the date such amounts due were first payable, from the Weekly Treasury Rates published by the Federal Reserve Board weekly in "Statistical Release H.15(519), Selected Interest Rates" under "U.S. government securities—Treasury constant maturities", or any successor publication which is published by the Federal Reserve System, or if such statistical release is not published at the time of determination hereunder, then such other index which shall be designated by the Insurers. Interest payable pursuant to this Section 5(B) shall be compounded annually.

6. AMOUNTS DUE NORTHWESTERN NATIONAL FROM MINNESOTA MUTUAL

If Northwestern National is required to make a payment under the Contract because of the failure of Minnesota Mutual to pay an obligation for which the Insurers are jointly and severally liable pursuant to Section 3(A)(1) or 3(A)(2) of this Agreement, then there shall be due to Northwestern National from Minnesota Mutual, as of the beginning of any calendar

quarter, an amount equal to the balance of all such payments made by Northwestern National, less any amounts previously paid by Minnesota Mutual pursuant to this Section 6, with interest thereon as determined in accordance with Section 5(B).

7. SETTLEMENT.

Amounts due from either of the Insurers under this Agreement shall be wired to an account designated by the other in the usual course of business on the first business day of the calendar quarter for which both of the Insurers are open for business except where alternative settlement is provided for in this Agreement.

8. RESERVES.

The Insurers will continue to hold assets sufficient to fund their respective liabilities under the Contract. The Insurers shall continue to compute reserves and hold assets in support of those reserves which are sufficient to fund their respective portions of the contractual obligations under the Contract. The reserves established by the Insurers shall be in accordance with the laws of the State of Minnesota.

9. REPORTS.

With respect to the Contract, Northwestern National and Minnesota Mutual shall provide each other with such reports containing accurate financial

and other contract information on a timely basis, as may be reasonably requested by either of them from the other. Reports shall be provided to the requesting party by the date and time specified, if reasonable.

10. OVERSIGHTS.

It is understood and agreed that, if failure to comply with any terms of this Agreement is shown to be unintentional and the result of misunderstanding or oversight on the part of either Northwestern National or Minnesota Mutual, both Northwestern National and Minnesota Mutual shall be restored to the position each would have occupied had no misunderstanding or oversight occurred.

11. ARBITRATION.

If any dispute shall arise between Northwestern National and Minnesota Mutual with reference to the interpretation of this Agreement or their rights with respect to any transaction involved, the dispute shall be referred to three arbitrators, one to be chosen by each party and the third by the two so chosen, all of whom shall be experienced professionals involved in the insurance business.

If either party refuses or neglects to appoint an arbitrator within sixty (60) days after the receipt of written notice from the other party requesting it to do so, the requesting party may nominate two arbitrators

who shall choose the third. Each party shall submit its case to the arbitrators within sixty (60) days of the appointment of the arbitrators.

The arbitrators shall consider this Agreement an honorable engagement rather than merely a legal obligation and they are relieved of all judicial formalities and may abstain from following the strict rules of law or legal procedure. The decision of a majority of the arbitrators shall be final and binding on both the Insurers. The expense of the arbitrators and of the arbitration shall be divided equally between the Insurers.

Notwithstanding the preceding, in the event of a dispute hereunder involving a third party, this arbitration provision shall be null and void at the request of either of the Insurers.

12. NOTICES.

All notices, requests or other communications given to the Insurers hereto shall be given in writing (including telex, facsimile transmission or similar writing) at the address or facsimile number(s) specified as follows:

If to Northwestern National:

Northwestern National Life Insurance Company

20 Washington Avenue South

Minneapolis, Minnesota 55401

Attention: The Office of the Secretary

Facsimile: 612/342-7531

If to Minnesota Mutual:

The Minnesota Mutual Life Insurance Company

400 Robert Street North

St. Paul, Minnesota 55101

Attention: The Office of the Secretary

Facsimile: 612/298-3853

Each of the Insurers may change its address or facsimile number for notices hereunder by notice to the other given in accordance with this Section 12. Each notice, request or other communication shall be effective (a) if given by facsimile, when such facsimile is transmitted to the facsimile number specified in this Section 12, and confirmation of receipt is made by the appropriate Insurer; (b) if given to a reputable overnight courier and properly addressed, two (2) business days after the date on which it was sent; or (c) if given by any other means, when actually delivered at the address specified in this Section.

13. MODIFICATION.

No change or modification of this Agreement shall be valid or binding upon Northwestern National or Minnesota Mutual nor shall any waiver of any term or condition hereof be deemed effective unless such change, modification or waiver shall be in writing signed by both Northwestern National and Minnesota Mutual.

14. ASSIGNMENT.

This Agreement shall inure to the benefit of and be binding upon the successors and assigns of Northwestern National and Minnesota Mutual; provided, however, that neither of the Insurers shall assign voluntarily its rights or obligations under this Agreement without the express written consent of the other.

15. ENFORCEABLE LAW.

The provisions of this Agreement shall be construed and enforced according to the laws of the State of Minnesota. In the case of an arbitration, the arbitration hearing shall be held in either St. Paul or Minneapolis, Minnesota.

16. COUNTERPARTS.

This Agreement may be executed in any number of counterparts, each of which shall be deemed an original, but said counterparts shall constitute but one and the same instrument which may be sufficiently evidenced by any one counterpart.

17. EFFECTIVE DATE.

The Effective Date of this Agreement shall be July 1, 1993.

IN WITNESS WHEREOF the Insurers have signed and sealed this Agreement the day and year first above written.

NORTHWESTERN NATIONAL LIFE
INSURANCE COMPANY

By: _____

Its: _____

And: _____

Its: _____

THE MINNESOTA MUTUAL LIFE
INSURANCE COMPANY

By: _____

Its: _____

And: _____

Its: _____

GABRIEL, ROEDER, SMITH & COMPANY

Actuaries & Consultants

24 Woodbine Avenue • Northport, New York 11768 • 516-757-0047

December 2, 1993

Mr. David Bergstrom
Executive Director
Minnesota State Retirement System
Minnesota State Bank Building
175 W. Lafayette Frontage Road
Suite 300
St. Paul, MN 55107-1425

Mr. Howard J. Bicker
Executive Director
Minnesota State Board of Investments
Suite 105, MEA Building
55 Sherborne Avenue
St. Paul, MN 55155

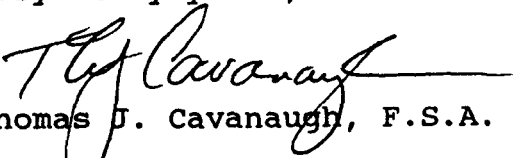
Dear Messrs. Bergstrom and Bicker:

We have reviewed the Minnesota Mutual/Northwestern National response to our October 20, 1993 report regarding the withdrawal of NWNL from its current joint underwriting agreement with MML as it affects the Minnesota State Deferred Compensation Plan. The response was made in a November 3 letter to Mr. Bergstrom from Mr. Jaymes G. Hubbell, F.S.A. of MML.

Mr. Hubbell's letter adequately responds to the minor concurs we had raised in our report. Therefore, we reaffirm the conclusion of our report that the withdrawal of NWNL is in the best interests of the Plan and its participants, and should be allowed to proceed.

If we can provide anything further in this matter, please do not hesitate to contact us.

Very truly yours,


Thomas J. Cavanaugh, F.S.A.

TJC/kq

THE MINNESOTA MUTUAL LIFE INSURANCE COMPANY
400 ROBERT STREET NORTH
ST. PAUL, MINNESOTA 55101-2098
PH 612/298-3671
FAX 612/298-7938

JAYMES G. HUBBELL, FSA
SECOND VICE PRESIDENT AND ACTUARY

MINNESOTA MUTUAL

November 3, 1993

Dave Bergstrom
Executive Director
Minnesota State Retirement System
175 West Lafayette Frontage Road
St. Paul, MN 55107-1425

Dear Dave,

This letter constitutes the Minnesota Mutual / Northwestern National response to Tom Cavanaugh's October 20th report. We appreciate the careful analysis provided by Mr. Cavanaugh and are grateful for this opportunity to comment.

Impact on Crediting Rates

MML disagrees with the comment "those participants terminating during the early years of the phase-out might be slightly disadvantaged." So long as MML maintains competitive interest crediting rates, these participants will not be disadvantaged. MML might be disadvantaged by crediting a rate higher than normal pricing would require for a few years, but the participants would not be disadvantaged.

Underwriting Agreement

Issue 1: The adjustment called for at the end of Section 4(B) (1)

Mr. Cavanaugh is correct in observing the actual NWNL liabilities as of July 1, 1993 should be known by now. The numbers were determined after July 1, 1993 so no estimation is involved. However, there always is the possibility that a participant's balance may have been over- or understated as of July 1. It is common for contracts of this type to include a provision for addressing clerical error. While the wording addresses the particular need for adjustment where an estimated liability was used, both MML and NWNL feel this provision adequately addresses potential clerical errors impacting July 1, 1993 balances as well.

Dave Bergstrom
November 3, 1993
Page 2

Issue 2 and 3: Section 4(C) "credit" / formula

The handling of extraordinary withdrawals is more complicated than identifying MML and NWNL's respective shares of liabilities. The language here appears in part because of the interests of the two companies which needed to be accommodated in this agreement. NWNL developed its payment structure assuming a high level of certainty that it would never have to accelerate the payment schedule. MML, however, found it unacceptable to have its assets supporting this contract subject to liquidation before NWNL was required to accelerate its payment schedule. Considerable time was expended developing the compromise embodied in Section 4(C). The formulas recognize that MML is likely to be in a better cash flow position and hence better able to deal with extraordinary withdrawals. This is evident from the "credit" assigned to NWNL for current contributions.

The end result does require NWNL to accelerate payments in the event of extraordinary withdrawals, but not by a full proportionate share. The compromise reached is one NWNL would accept without lowering the interest rates guaranteed in the ten-year payment schedule.

Issue 4: Inconsistencies in payment due dates.

We're open to suggestions as to how to address this concern. It is highly unlikely that any payment will be made by NWNL other than the scheduled payments listed in the agreement. Only in the case of extraordinarily large withdrawals will additional payments be required. Under those circumstances MML will need a few days after the end of the quarter to determine how much NWNL is obligated to pay. MML is making all the payments to participants and keeping the records. NWNL can't wire the money until MML has determined the need for and the amount of any additional payment. We think this delay in payment under these highly unlikely circumstances is a practical necessity. The plan is not disadvantaged because interest accrues on the payment from the end of the quarter.

Issue 5: Section 4(C) restatement of the payment schedule

These jointly underwritten contracts entail two levels of liability for the insurers. I'll refer to them as the contract liability and the contingent liability.

Dave Bergstrom
November 3, 1993
Page 3

The contract liability relates to the portion of benefits each insurer agrees to pay. The annuity contract doesn't spell this out. Hence, an agreement between the two companies is used to document the responsibilities of each for funding and benefit payments. Contract liability is what each company reflects on its balance sheet. A logical consequence of the agreement between companies is that each company assumes contractual liability associated with the contributions it receives. Historically, the contributions have been divided equally between the insures, and so the liabilities have also been equally divided.

The contingent liability relates to liability each company assumes for the failure of the other company. If MML fails, the contractowner can look to NWNL for payment. And if NWNL fails, the contractowner can look to MML for payment. Contingent liability is not a balance sheet item for either company. Moreover, it is a general business liability which is assumed without any specific funding. Offsetting the contingent liability is the right of the surviving company to make a claim to the assets of the failed company on behalf of annuity participants.

Mr. Cavanaugh clearly grasps the importance of the continuation of the joint guarantee. We do believe, however, that the restatement of the payment schedule impacts only the contractual liabilities and has no bearing on the joint (contingent) liability.

The purpose of the restatement is simply to recognize the acceleration of payments. If a homeowner makes an additional principal payment on his/her mortgage, the amortization schedule is modified to reflect the reduction in principal outstanding and the reduction in future payments or period. Section 4(C) recognizes the same need under this arrangement. To the extent NWNL makes additional payments, the remaining NWNL liability is reduced and certain future payments are reduced. It really has nothing to do with the joint and several liability.

It is theoretically possible that there could be very large withdrawals that would cause the NWNL Liability to equal the Joint Fund Liability. However, under these circumstances MML would continue to be jointly and severally liable for the Joint Fund Liability for the entire 10 years. The joint and several liability is independent of what portion of the funding is provided by each company (a contract liability concern). Note that NWNL is jointly liable for the entire pre-July 1, 1993 accumulations for ten years even though its funding is being reduced to zero over that period.

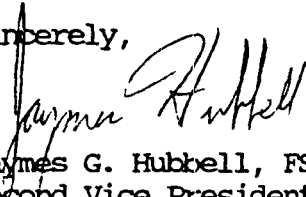
Dave Bergstrom
November 3, 1993
Page 4

Conclusion

It appears to us that Mr Cavanaugh has performed a thorough review and did not hesitate to critically analyze even the most complicated portions of the joint underwriting agreement. We welcome the opportunity to provide additional clarification of the issues raised in the report. We conclude that the joint underwriting agreement does adequately address these issues without modification. We believe this letter provides sufficient clarification.

I will contact you to see what additional clarification you would like to have provided.

Sincerely,



Jaymes G. Hubbell, FSA
Second Vice President and Actuary

JGH/dc

cc: ✓ Howard Bicker
Executive Director
Minnesota State Board of Investments
Suite 105, MEA Building
55 Sherburn Avenue
St. Paul MN 55155

GABRIEL, ROEDER, SMITH & COMPANY

Actuaries & Consultants

24 Woodbine Avenue • Northport, New York 11768 • 516-757-0047

October 20, 1993

Mr. David Bergstrom
Executive Director
Minnesota State Retirement System
Minnesota State Bank Building
175 W. Lafayette Frontage Road, Suite 300
St Paul, MN 55107-1425

Mr. Howard J. Bicker
Executive Director
Minnesota State Board of Investments
Suite 105, MEA Building
55 Sherburne Avenue
St. Paul, MN 55155

Dear Messrs. Bergstrom and Bicker:

As requested, we have reviewed the proposed withdrawal of Northwestern National Life Insurance Company (NWNL) from its current joint underwriting agreement with Minnesota Mutual Life Insurance Company (MML) as it affects the Minnesota State Deferred Compensation Plan. We are recommending that the State agree to the withdrawal basically as proposed. Our reasons for this recommendation follow.

Background

The current contract with MML/NWNL calls for the companies to jointly guarantee the principal of a fixed interest rate product offered under the Deferred Compensation Plan. Recently NWNL has decided to phase out its participation in the large pension case market. In order to complete the phase-out, NWNL must eventually remove itself as a guarantor under the product offered to the Plan.

After exploring several alternatives, one approach that was acceptable to both NWNL and MML is being proposed. Under this approach, NWNL would pay out the Plan assets it currently holds over a ten year period of time, and pay a stipulated interest rate on remaining assets over the same period. MML would then blend this return with its credited rate before crediting members' accounts. All new monies deferred under the contract after the beginning of the ten year period would be paid to MML.

Messrs. Bergstrom and Bicker
October 20, 1993
Page 2

Our review included the projected impact on crediting rates under various scenarios as detailed in Mr. Jym Hubbell's letter to you of June 18, 1993, the proposed joint underwriting agreement and contract amendments enclosed in Mr. Hubbell's letter of September 24, 1993, and the impact the change would have on the investment risk associated with the fixed product in question. Each area will be addressed separately.

Impact on Crediting Rates

Mr. Hubbell provided projected crediting rates for different future interest rate environments in his letter of June 14. Although he was not happy in having to subsidize the rates during the early years of the NWNL payout, he indicated that he was confident that MML would remain competitive with the other fixed products offered under the Plan.

We have reviewed the methodology used by Mr. Hubbell in performing his analysis. The assumptions he used to perform the projections appear reasonable, and, based on those assumptions, we concur with his conclusions. It would not appear that the NWNL phase-out would have a significant impact on crediting rates over the ten year period, although those participants terminating during the early years of the phase-out might be slightly disadvantaged. We believe this result is acceptable given the alternative of continuing with an unwilling product provider that has complete control over setting interest rate levels on its portion of Plan assets.

Underwriting Agreement

The purpose of the underwriting agreement should be to specify the payments to be made by NWNL to MML during the phase-out, and the liability that NWNL accepts during that time period. As long as that is accomplished, which it is, most of the details should be left to NWNL and MML. Having said that, subject to review by the Attorney General, there are several issues that we suggest be clarified before the agreement is signed. They are:

- o The adjustment called for at the end of Section 4(B)(1) is confusing. We would think that the actual NWNL liabilities as of July 1, 1993 would be known by now, and that the schedules in the agreement would reflect the actual liability.
- o Under Section 4(C), a "credit" is given to NWNL, if a large withdrawal occurs, for a portion of current contributions under the contract. It is not clear why they should be given a credit for dollars that are solely MML liability.

- o Again under Section 4(C), it would seem that the formula to determine NWNL's payment to MML should be axd-b-c using the definitions in the section.
- o Section 4(D) calls for payment of any past-due amounts immediately whereas sections 4(B)(2) and 4(C) permit NWNL to delay payment until the total amount due is determined. This conflict should be eliminated.
- o Section 4(C) calls for a restatement of the payment schedule and NWNL liability following a payment made pursuant to that section. We would like to see a clarification that the point of this restatement is to maintain joint liability until all funds have been transferred from NWNL to MML. If this were not done, it would be possible under the proposed agreement for NWNL to be solely liable for the remaining assets of the pre-agreement group following a significant withdrawal.

If the issues noted above are answered to your satisfaction, we would recommend approval of the proposed underwriting agreement.

Investment Risk

Presumably the reason for the original joint underwriting was to spread the risk of default between the two companies. The issue now is whether the withdrawal of one guarantor twelve years after the initial agreement would increase the risk to the Plan participants. A comparison of the ratings and asset distribution of the two companies will help to answer this question.

A comparison of the ratings given recently by three organizations is shown in the table below.

	<u>MML</u>	<u>NWNL</u>
A.M. Best Company	A++	A
Standard & Poor's	AA+	A+
Weiss Research	C+	C

While both companies' ratings are close, MML is slightly higher at all three organizations. Since the ratings are a combination of objective and subjective factors, a look at asset distribution will provide an additional basis for comparison. Insurance companies invest little, if any, general account assets in equities. The three main categories are bonds, mortgages, and real estate. If an insurance company has difficulties, it is generally because of a relatively high percentage of assets in below investment grade (i.e. junk) bonds, non-performing mortgages, and/or real estate. The following table shows the distribution for MML and NWNL (the figures were taken from Weiss Research's 4/93 "Insurance Safety Directory").

Messrs. Bergstrom and Bicker
October 20, 1993
Page 4

	<u>Below Investment Grade Bonds</u>	<u>Performing Mortgages</u>	<u>Non-performing Mortgages</u>	<u>Real Estate</u>
MML	5.2%	15.4%	0.2%	2.2%
NWNL	10.6	31.9	1.0	4.5

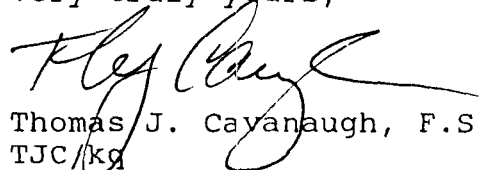
Again, MML shows a lower risk profile than NWNL. On the basis of these comparisons, we would conclude that the withdrawal of NWNL would not increase, and would likely decrease the default risk for participants.

Conclusions

Subject to the minor issues noted above regarding the underwriting agreement, it is our conclusion that it is in the best interests of the Plan and its participants to allow the NWNL phase-out as proposed. While it is possible that tougher negotiation may have resulted in a better payout schedule from NWNL, it must be kept in mind that since it is to MML's advantage to maximize the payout from NWNL, a higher payout is not likely. Allowing the current situation to continue would definitely not be to the participants' advantage because NWNL would have control over the interest rate they credited on the subject funds in the future.

If we can provide any further details regarding our review or if you would like to discuss our recommendations, please do not hesitate to contact us.

Very truly yours,


Thomas J. Cavanaugh, F.S.A.
TJC/kg

THE MINNESOTA MUTUAL LIFE INSURANCE COMPANY
400 ROBERT STREET NORTH
ST. PAUL, MINNESOTA 55101-2098
PH 612/298-3671
FAX 612/298-7938

JAYMES G. HUBBELL, FSA
SECOND VICE PRESIDENT AND ACTUARY

MINNESOTA MUTUAL

September 24, 1993

David Bergstrom
Executive Director
Minn. State Retirement System
175 West Lafayette Frontage Road
St. Paul, MN 55107-1425

✓ Howard J. Bicker
Executive Director
Minn. State Board of Investments
Suite 105, MEA Building
55 Sherburne Avenue
St. Paul, MN 55155

Re: Drafts of Contract 844047 and Joint Underwriting Agreement

Dear Dave and Howard,

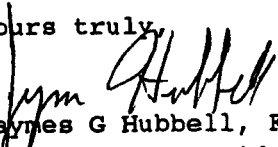
Enclosed are copies of the proposed amendment to group annuity contract 844047. As you know, Northwestern National Life Insurance Company ("NWNL") has determined that it no longer wishes to compete in the large case pension business and has negotiated an agreement with the Minnesota Mutual Life Insurance Company ("MML") whereby MML will assume the liabilities previously allocated to NWNL over a ten year period. The enclosed amendments reflect MML's assumption of these liabilities.

I have also enclosed for your review and comment a copy of the proposed agreement describing the transfer of risk between the Companies. Counsel to the Companies have determined that the agreement should become a part of the group annuity contract as it directly affects the contractual liabilities of the Insurers.

I presume you will want to forward copies of these documents to your consultant, Tom Cavanaugh. Please advise as to when you would like to meet to discuss these documents.

Since the Minnesota Attorney General's office is a party to the approval process we will need to copy to the Attorney General soon.

Yours truly,


Jaymes G Hubbell, FSA
Second Vice President and Actuary

enclosure

cc: Don Swanson, NWNL
Sandra Bruns, NWNL

CONTRACT AMENDMENT NUMBER 7

By agreement by and among THE MINNESOTA STATE BOARD OF INVESTMENT, NORTHWESTERN NATIONAL LIFE INSURANCE COMPANY (herein "Northwestern National") and THE MINNESOTA MUTUAL LIFE INSURANCE COMPANY (herein "Minnesota Mutual"), Group Annuity Contract 844047 is amended as follows:

1. The three paragraphs on page 1 of the Contract are deleted in their entirety and are replaced with the following:

This contract is issued to the Contractholder jointly by Northwestern National Life Insurance Company (herein "Northwestern National") and The Minnesota Mutual Life Insurance Company (herein "Minnesota Mutual"), both of which may be referred to in this contract as "the Insurers," subject to the provisions of that certain Joint Underwriting Agreement, dated _____, 1993, by and between Northwestern National and Minnesota Mutual (herein the "Underwriting Agreement"), which Underwriting Agreement is attached to this contract and is made a part hereof.

The Underwriting Agreement describes certain obligations under this contract for which Northwestern National is not liable, and, with respect to such obligations, Northwestern National shall not be an issuer of this contract and the Contractholder shall not be a Contractholder of the Northwestern National, nor shall the term "Insurers" wherever appearing in this contract refer to Northwestern National.

The Insurers agree to accept contributions hereunder from the Contractholder, to invest and account for such contributions in the manner provided herein, and to pay benefits in such amounts and to such persons as are designated in writing by the Contractholder; provided, in accordance with the Underwriting agreement, that contributions hereunder on and after July 1, 1993 shall be received solely by Minnesota Mutual and Minnesota Mutual shall have sole responsibility to invest and account for, and to pay benefits attributable to, such contributions.

Northwestern National and Minnesota Mutual are jointly and severally liable only for those benefits and payments provided by this contract attributable to contributions received under this contract prior to July 1, 1993, as more fully set forth in the Underwriting Agreement. The obligations under this contract, exclusive of obligations for purchased Annuity Payments which are paid pursuant to annuities having annuity commencement dates prior to July 1, 1993 ("Guaranteed Annuity Payments"), shall become the sole liability of Minnesota Mutual on the later of: (1) July 1, 2003, or (2) the date on which Northwestern National shall have satisfied all of its obligations to make payments to Minnesota Mutual, exclusive of payments required in connection with Guaranteed Annuity Payments, in accordance with the Underwriting Agreement.

2. The first paragraph of Subsection 5.02 of the Contract is amended to read as follows:

This contract may be modified at any time by written agreement between Minnesota Mutual and the Contractholder if only benefits for which Minnesota Mutual is solely liable, as specified in the Underwriting Agreement, are affected by the modification. The contract may be modified at any time by written agreement between Minnesota Mutual, Northwestern National and the Contractholder when benefits for which Minnesota Mutual and Northwestern National are jointly and severally liable, as specified in the Underwriting Agreement, are affected by the modification.

These amendments shall be effective on July 1, 1993.

Agreed to on this ____ day of _____, 1993 for the parties as indicated below.

For NORTHWESTERN NATIONAL LIFE
INSURANCE COMPANY
Minneapolis, Minnesota

For THE MINNESOTA MUTUAL LIFE
INSURANCE COMPANY
Saint Paul, Minnesota

By: _____

By: _____

Position: _____

Position: _____

For the MINNESOTA STATE RETIREMENT
SYSTEM

For the MINNESOTA STATE BOARD OF
INVESTMENT

By: _____

By: _____

Position: _____

Position: _____

Approved as to form and Execution
by the Attorney General's Office

By: _____

Assistant Attorney General

**STATE DEFERRED COMPENSATION
JOINT UNDERWRITING AGREEMENT**

This Agreement, made this _____ day of _____, 1993, between the Northwestern National Life Insurance Company, Minneapolis, Minnesota, a Minnesota corporation (herein "Northwestern National") and The Minnesota Mutual Life Insurance Company, Saint Paul, Minnesota, a Minnesota corporation (herein "Minnesota Mutual") (Northwestern National and Minnesota Mutual hereinafter collectively referred to as the "Insurers") describes the relationship of Northwestern National and Minnesota Mutual with respect to the contractual obligations as described in the recitals below.

RECITALS

- (A) The Insurers are life insurance companies organized under the laws of the State of Minnesota.

- (B) The Insurers have jointly issued a number of group annuity contracts, group life contracts, and individual annuity policies. The Insurers have executed an Agreement, made on the 1st day of January, 1992, (herein "Prior Agreement") which describes the rights, duties and obligations of the Insurers with respect to those contracts and policies.

- (C) This Agreement is intended to further describe the obligations of the Insurers with respect to Group Deferred Annuity Contract 844047 issued to The Minnesota State Board of Investment and having an effective date of October 1, 1980 (herein "the Contract").

- (D) Prior to the Effective Date of this Agreement, payments of obligations under the Contract may be satisfied by Northwestern National, by Minnesota Mutual, or jointly by the two of them. Also prior to the Effective Date of this Agreement, it has been the understanding of the Insurers that each of them was responsible and contractually liable for fifty percent (50%) of any payment, benefit or disbursement under the Contract where such payment was properly made in satisfaction of a claim against the Insurers under the Contract.
- (E) This Agreement shall supersede that Prior Agreement and shall be interpreted to entirely describe all of the rights, duties and obligations of the Insurers with respect to the Contract.
- (F) It is the intent of the Insurers that, to the extent that Northwestern National is not jointly and severally liable with Minnesota Mutual for certain obligations under the Contract in accordance with the terms of this Agreement, Northwestern National shall not be considered to have issued the Contract nor to be an insurer under the Contract, nor shall any holder of the Contract ("Contractholder") be considered to be a Contractholder of Northwestern National, with respect to such obligations. It is also the intent of the Insurers to modify their respective obligations pursuant to the Contract in a manner consistent with this Agreement by means of certain amendments to the Contract effective as of July 1, 1993.

(G) It is further the intent of the parties that, to the extent that obligations under the Contracts are joint and several liabilities of the Insurers, those obligations shall remain joint and several liabilities of both Insurers until all payments required of each Insurer to the other, as described herein, are satisfied.

Accordingly, in consideration of the mutual covenants and agreements herein contained, it is agreed between the Insurers:

1. ADMINISTRATION OF THE CONTRACTS.

(A) To facilitate the handling of all matters relating to the management and administration of the Contract, Minnesota Mutual currently has the responsibility for all matters of contract administration under the Contract. It shall continue to:

- (1) collect premiums or other contract contributions from the Contractholder under the Contract;
- (2) establish and maintain contract and participant records under the Contract; and
- (3) be responsible for the disbursement of all funds which shall become payable under the Contract. Acting in this administrative role, Minnesota Mutual shall continue to act for itself and for Northwestern National to the extent that

Northwestern National remains jointly and severally liable for obligations under the Contract.

2. PREMIUMS.

On and after July 1, 1993, Minnesota Mutual shall be entitled to receive and retain one hundred percent (100%) of the premiums or contributions received under the Contract.

3. LIABILITIES.

(A) Joint Liabilities.

- (1) **Current Purchased Annuity Benefits.** The Insurers shall each remain jointly and severally liable for all annuity payments made under the Contract which are paid pursuant to annuities having annuity commencement dates prior to July 1, 1993 ("Annuity Payments").
- (2) **Withdrawals From Current Accumulations.** The Insurers shall continue to be jointly and severally liable for all withdrawals and payments under the Contract, other than for Annuity Payments, which are attributable to premiums and contributions received prior to July 1, 1993. This liability shall be equal to the sum of the accumulation values under the Contract which

are attributable to premiums and contributions received prior to July 1, 1993 (hereinafter "Joint Fund Liability").

- (3) Division of Joint Fund Liability. Effective July 1, 1993, and as of the beginning of each calendar quarter thereafter, the Joint Fund Liability shall be divided into the Northwestern National liability ("NWNL Liability") and the Minnesota Mutual liability ("MML Liability") as follows:

- (a) NWNL Liability. The NWNL Liability as of the beginning of any calendar quarter shall be the sum of:

(i) the lesser of:

(a) the Joint Fund Liability as described in Section 3(A)(2) above; or

(b) the dollar amount of total Tabular NWNL Liability as determined from the following table as may be adjusted in accordance with Section 4(C).

For the Calendar
Quarter Beginning:

Tabular NWNL Liability at the Beginning
of the Calendar Quarter

July 1, 1993	\$76,238,151.00
October 1, 1993	74,728,000.32
January 1, 1994	72,865,979.95
April 1, 1994	70,371,028.97
July 1, 1994	69,045,677.28
October 1, 1994	67,459,959.15
January 1, 1995	66,422,425.25
April 1, 1995	63,663,943.94
July 1, 1995	62,752,168.69
October 1, 1995	60,723,487.62
January 1, 1996	58,628,033.68
April 1, 1996	56,951,876.24
July 1, 1996	54,457,508.64
October 1, 1996	52,207,491.48
January 1, 1997	49,683,326.31
April 1, 1997	47,752,832.50
July 1, 1997	45,510,321.77
October 1, 1997	43,871,478.64
January 1, 1998	42,142,227.36
April 1, 1998	39,666,096.80
July 1, 1998	37,624,521.34
October 1, 1998	35,683,579.23
January 1, 1999	33,894,147.10
April 1, 1999	30,551,925.27

<u>For the Calendar Quarter Beginning:</u>	<u>Tabular NWNL Liability at the Beginning of the Calendar Quarter</u>
July 1, 1999	28,983,294.92
October 1, 1999	26,899,747.75
January 1, 2000	24,787,547.05
April 1, 2000	22,529,957.87
July 1, 2000	20,333,269.80
October 1, 2000	18,596,979.21
January 1, 2001	17,479,446.61
April 1, 2001	16,020,144.57
July 1, 2001	13,711,187.63
October 1, 2001	12,440,336.02
January 1, 2002	10,843,924.37
April 1, 2002	7,672,389.04
July 1, 2002	5,290,187.25
October 1, 2002	3,715,928.08
January 1, 2003	3,094,997.63
April 1, 2003	1,019,466.43
July 1, 2003	0.00

and

(ii) the balance of all unpaid past due quarterly payments under Section 4(B) with interest thereon, as determined in accordance with Section 5(A).

(b) **MML Liability.** The MML Liability as of the beginning of any calendar quarter shall be equal to the excess, if any, of the Joint Fund Liability over the NWNL Liability.

(B) Liabilities Solely Of Minnesota Mutual.

(1) **Withdrawals and Payments.** Minnesota Mutual shall be solely liable for all withdrawals and payments under the Contract which are attributable to premiums and contributions received on or after July 1, 1993.

(2) **Annuity Benefits Purchased On Or After Effective Date.** Minnesota Mutual shall be solely liable for all annuity payments under the Contract which are paid pursuant to annuities having annuity commencement dates on or after July 1, 1993.

4. AMOUNTS DUE MINNESOTA MUTUAL FROM NORTHWESTERN NATIONAL.

(A) **Reimbursement for Annuity Payments.** Northwestern National will reimburse Minnesota Mutual 50% of all Annuity Payments, as described in Section 3(A)(1) of this Agreement. Such reimbursement will be made on the first day of the month following the date of any Annuity Payment.

(B) Quarterly Payments. Northwestern National shall pay to Minnesota Mutual on the first business day of each calendar quarter one of the following amounts:

(1) Whenever the Joint Fund Liability exceeds the Tabular NWNL Liability at the beginning of both the prior calendar quarter and the current calendar quarter, Northwestern National shall pay to Minnesota Mutual the applicable amount shown in the table below (as adjusted in accordance with Section 4(C)). The amounts due from Northwestern National pursuant to this section 4(B)(1) are in addition to any amounts due under Section 4(A).

For the Calendar

<u>Quarter Beginning:</u>	<u>Quarterly Scheduled Payment</u>
October 1, 1993	\$2,830,574.00
January 1, 1994	3,198,868.00
April 1, 1994	3,729,303.00
July 1, 1994	2,542,691.00
October 1, 1994	2,722,985.00
January 1, 1995	2,173,581.00
April 1, 1995	3,852,540.00
July 1, 1995	1,994,319.00
October 1, 1995	3,021,581.00
January 1, 1996	3,088,905.00
April 1, 1996	2,603,803.00
July 1, 1996	3,415,905.00
October 1, 1996	3,114,775.00

For the Calendar

<u>Quarter Beginning:</u>	<u>Quarterly Scheduled Payment</u>
January 1, 1997	3,362,277.00
April 1, 1997	2,693,517.00
July 1, 1997	2,992,495.00
October 1, 1997	2,328,648.00
January 1, 1998	2,401,499.00
April 1, 1998	3,093,904.00
July 1, 1998	2,636,215.00
October 1, 1998	2,483,984.00
January 1, 1999	2,321,379.00
April 1, 1999	3,804,655.00
July 1, 1999	2,004,765.00
October 1, 1999	2,484,350.00
January 1, 2000	2,496,407.00
April 1, 2000	2,589,118.00
July 1, 2000	2,511,066.00
October 1, 2000	1,996,339.00
January 1, 2001	1,363,445.00
April 1, 2001	1,685,380.00
July 1, 2001	2,518,372.00
October 1, 2001	1,441,949.00
January 1, 2002	1,755,084.00
April 1, 2002	3,303,861.00
July 1, 2002	2,477,943.00
October 1, 2002	1,637,789.00

For the Calendar

<u>Quarter Beginning:</u>	<u>Quarterly Scheduled Payment</u>
January 1, 2003	666,043.00
April 1, 2003	2,111,480.00
July 1, 2003	1,031,575.00

The payments listed in the above table shall be adjusted to reconcile any variances attributable to the differences between the estimated and actual NWNL Liability for July 1, 1993.

- (2) Whenever the Tabular NWNL Liability exceeds the Joint Fund Liability at the beginning of either the prior or current calendar quarter, Northwestern National shall pay to Minnesota Mutual an amount equal to (a), minus (b), plus (c), where:

(a) is the lesser of the Joint Fund Liability or the Tabular NWNL Liability at the beginning of the prior calendar quarter;

(b) is the lesser of the Joint Fund Liability or the Tabular NWNL Liability at the beginning of such current calendar quarter, increased by the sum of any payments made in accordance with Section 4(C) during the prior calendar quarter; and

(c) is interest for the prior calendar quarter in an amount determined by applying the corresponding rate specified in Section 5(A) to the lesser of the Joint Fund Liability or the Tabular NWNL Liability at the beginning of the prior calendar quarter.

Payments due pursuant to this Section 4(B)(2) shall be in addition to amounts owed to Minnesota Mutual under Section 4(A). In the event a payment is due under this Section 4(B)(2), Northwestern National may delay payment until the total amount due Minnesota Mutual is determined. Such payment will accrue interest from the beginning of the quarter to the date of payment in accordance with Section 5(A).

In the event that the conditions described in this Subparagraph 4(B)(2) are the result of a termination of the Contract giving rise to the payment of a Lump Sum Transfer Value, as defined in the Contract, then the payment due Minnesota Mutual shall be adjusted by the market value adjustment percentage as is determined to be appropriate by Northwestern National.

(C) Extraordinary Withdrawals. For purposes of this Section 4(C), the terms set forth below shall be defined as follows:

"Total Accumulation Value" means, as of the beginning of the current calendar quarter, the sum of (a) the Joint Fund Liability and (b) the liabilities under the Contract attributable to premiums and contributions received on or after July 1, 1993.

"Extraordinary Withdrawals" means withdrawals from the Contract during a calendar quarter in excess of 3% of the Total Accumulation Value as of the beginning of that calendar quarter.

Whenever an Extraordinary Withdrawal occurs, Northwestern National shall pay to Minnesota Mutual at the end of such calendar quarter an amount equal to [(a), minus (b), minus (c)] multiplied by (d), where:

- (a) is the portion of the Extraordinary Withdrawal attributable to withdrawals from the Joint Fund Liability, using a first-in, first-out method, during such calendar quarter;
- (b) is the sum of contributions made under the Contract during such calendar quarter, multiplied by the ratio of the beginning of quarter NWNL Liability to Total Accumulation Value;
- (c) is the amount of any Northwestern National payments due or paid pursuant to Section 4(B) during such calendar quarter;
- and

(d) is a fraction, of which the numerator is the NWNL Liability and the denominator is the Joint Fund Liability, both as of the beginning of such calendar quarter.

If the resulting amount is less than zero, no payment shall be due from either Insurer.

No payment due under this Section 4(C) shall be in excess of the sum of the next four quarterly payments due under the Table Described in Section 4(B)(1). Northwestern National may delay payment until the total amount due Minnesota Mutual is determined. Such payment will accrue interest in accordance with Section 5(A) from the first day of the immediately following calendar quarter to the date of payment.

Following any payment made by Northwestern National pursuant to this Section 4(C), the Insurers shall adjust and restate the table of Tabular NWNL Liability in Section 3(A)(3)(a) and the table of quarterly payments in Section 4(B)(1) to reflect the effect of such payments.

(D) Payment of Past Due Amounts. In addition to the amounts due under Sections 4(A), 4(B) and 4(C) in any calendar quarter, Northwestern National shall pay to Minnesota Mutual as of the beginning of any calendar quarter an amount equal to the balance of all unpaid past due payments hereunder with the interest thereon, as determined in accordance with Section 5(B).

5. **NORTHWESTERN NATIONAL INTEREST CREDITS.**

(A) The Northwestern National interest rate credited during a calendar quarter shall be the corresponding effective annual interest rate listed in the following table, which shall be the rate applied in determining the NWNL Liability described in Section 3(A)(3) and the quarterly payments described in Section 4(B):

<u>For Quarter</u> <u>Beginning</u>	<u>Effective Annual</u> <u>Interest Rate</u>	<u>For Quarter</u> <u>Beginning</u>	<u>Effective Annual</u> <u>Interest Rate</u>
July 1, 1993	7.05%	July 1, 1998	5.85%
October 1, 1993	7.05%	October 1, 1998	5.85%
January 1, 1994	7.05%	January 1, 1999	5.85%
April 1, 1994	7.05%	April 1, 1999	5.85%
July 1, 1994	6.85%	July 1, 1999	5.60%
October 1, 1994	6.85%	October 1, 1999	5.60%
January 1, 1995	6.85%	January 1, 2000	5.60%
April 1, 1995	6.85%	April 1, 2000	5.60%
July 1, 1995	6.65%	July 1, 2000	5.35%
October 1, 1995	6.65%	October 1, 2000	5.35%
January 1, 1996	6.65%	January 1, 2001	5.35%
April 1, 1996	6.65%	April 1, 2001	5.35%
July 1, 1996	6.45%	July 1, 2001	5.10%
October 1, 1996	6.45%	October 1, 2001	5.10%
January 1, 1997	6.45%	January 1, 2002	5.10%
April 1, 1997	6.45%	April 1, 2002	5.10%

<u>For Quarter</u> <u>Beginning</u>	<u>Effective Annual</u> <u>Interest Rate</u>	<u>For Quarter</u> <u>Beginning</u>	<u>Effective Annual</u> <u>Interest Rate</u>
July 1, 1997	6.15%	July 1, 2002	4.85%
October 1, 1997	6.15%	October 1, 2002	4.85%
January 1, 1998	6.15%	January 1, 2003	4.85%
April 1, 1998	6.15%	April 1, 2003	4.85%

(B) Interest payable by Northwestern National on outstanding past due amounts due Minnesota Mutual shall be equal to the 10-Year U.S. Treasury rate, increased by one hundred fifty basis points, applied to such outstanding past due amounts. The 10-Year U.S. Treasury rate will be determined as of the date such amounts due were first payable, from the Weekly Treasury Rates published by the Federal Reserve Board weekly in "Statistical Release H.15(519), Selected Interest Rates" under "U.S. government securities--Treasury constant maturities", or any successor publication which is published by the Federal Reserve System, or if such statistical release is not published at the time of determination hereunder, then such other index which shall be designated by the Insurers. Interest payable pursuant to this Section 5(B) shall be compounded annually.

6. AMOUNTS DUE NORTHWESTERN NATIONAL FROM MINNESOTA MUTUAL

If Northwestern National is required to make a payment under the Contract because of the failure of Minnesota Mutual to pay an obligation for which the Insurers are jointly and severally liable pursuant to Section 3(A)(1) or 3(A)(2) of this Agreement, then there shall be due to Northwestern National from Minnesota Mutual, as of the beginning of any calendar

quarter, an amount equal to the balance of all such payments made by Northwestern National, less any amounts previously paid by Minnesota Mutual pursuant to this Section 6, with interest thereon as determined in accordance with Section 5(B).

7. SETTLEMENT.

Amounts due from either of the Insurers under this Agreement shall be wired to an account designated by the other in the usual course of business on the first business day of the calendar quarter for which both of the Insurers are open for business except where alternative settlement is provided for in this Agreement.

8. RESERVES.

The Insurers will continue to hold assets sufficient to fund their respective liabilities under the Contract. The Insurers shall continue to compute reserves and hold assets in support of those reserves which are sufficient to fund their respective portions of the contractual obligations under the Contract. The reserves established by the Insurers shall be in accordance with the laws of the State of Minnesota.

9. REPORTS.

With respect to the Contract, Northwestern National and Minnesota Mutual shall provide each other with such reports containing accurate financial

and other contract information on a timely basis, as may be reasonably requested by either of them from the other. Reports shall be provided to the requesting party by the date and time specified, if reasonable.

10. OVERSIGHTS.

It is understood and agreed that, if failure to comply with any terms of this Agreement is shown to be unintentional and the result of misunderstanding or oversight on the part of either Northwestern National or Minnesota Mutual, both Northwestern National and Minnesota Mutual shall be restored to the position each would have occupied had no misunderstanding or oversight occurred.

11. ARBITRATION.

If any dispute shall arise between Northwestern National and Minnesota Mutual with reference to the interpretation of this Agreement or their rights with respect to any transaction involved, the dispute shall be referred to three arbitrators, one to be chosen by each party and the third by the two so chosen, all of whom shall be experienced professionals involved in the insurance business.

If either party refuses or neglects to appoint an arbitrator within sixty (60) days after the receipt of written notice from the other party requesting it to do so, the requesting party may nominate two arbitrators

who shall choose the third. Each party shall submit its case to the arbitrators within sixty (60) days of the appointment of the arbitrators.

The arbitrators shall consider this Agreement an honorable engagement rather than merely a legal obligation and they are relieved of all judicial formalities and may abstain from following the strict rules of law or legal procedure. The decision of a majority of the arbitrators shall be final and binding on both the Insurers. The expense of the arbitrators and of the arbitration shall be divided equally between the Insurers.

Notwithstanding the preceding, in the event of a dispute hereunder involving a third party, this arbitration provision shall be null and void at the request of either of the Insurers.

12. NOTICES.

All notices, requests or other communications given to the Insurers hereto shall be given in writing (including telex, facsimile transmission or similar writing) at the address or facsimile number(s) specified as follows:

If to Northwestern National:

Northwestern National Life Insurance Company

20 Washington Avenue South

Minneapolis, Minnesota 55401

Attention: The Office of the Secretary

Facsimile: 612/342-7531

If to Minnesota Mutual:

The Minnesota Mutual Life Insurance Company

400 Robert Street North

St. Paul, Minnesota 55101

Attention: The Office of the Secretary

Facsimile: 612/298-3853

Each of the Insurers may change its address or facsimile number for notices hereunder by notice to the other given in accordance with this Section 12. Each notice, request or other communication shall be effective (a) if given by facsimile, when such facsimile is transmitted to the facsimile number specified in this Section 12, and confirmation of receipt is made by the appropriate Insurer; (b) if given to a reputable overnight courier and properly addressed, two (2) business days after the date on which it was sent; or (c) if given by any other means, when actually delivered at the address specified in this Section.

13. MODIFICATION.

No change or modification of this Agreement shall be valid or binding upon Northwestern National or Minnesota Mutual nor shall any waiver of any term or condition hereof be deemed effective unless such change, modification or waiver shall be in writing signed by both Northwestern National and Minnesota Mutual.

14. ASSIGNMENT.

This Agreement shall inure to the benefit of and be binding upon the successors and assigns of Northwestern National and Minnesota Mutual; provided, however, that neither of the Insurers shall assign voluntarily its rights or obligations under this Agreement without the express written consent of the other.

15. ENFORCEABLE LAW.

The provisions of this Agreement shall be construed and enforced according to the laws of the State of Minnesota. In the case of an arbitration, the arbitration hearing shall be held in either St. Paul or Minneapolis, Minnesota.

16. COUNTERPARTS.

This Agreement may be executed in any number of counterparts, each of which shall be deemed an original, but said counterparts shall constitute but one and the same instrument which may be sufficiently evidenced by any one counterpart.

17. EFFECTIVE DATE.

The Effective Date of this Agreement shall be July 1, 1993.

IN WITNESS WHEREOF the Insurers have signed and sealed this Agreement the day and year first above written.

NORTHWESTERN NATIONAL LIFE
INSURANCE COMPANY

By: _____

Its: _____

And: _____

Its: _____

(Corporate Seal)

THE MINNESOTA MUTUAL LIFE
INSURANCE COMPANY

By: _____

Its: _____

And: _____

Its: _____

(Corporate Seal)

ACKNOWLEDGEMENT AND CONSENT

The provisions of this Joint Underwriting Agreement, including the provisions dividing liabilities under the Contract between the Insurers, are hereby acknowledged and consented to by the Minnesota State Board of Investment.

MINNESOTA STATE BOARD OF INVESTMENT

By: _____

Its: _____

w: \dfg\juasdc.doc

9/24/93

June 18, 1993

Howard Bicker
Executive Director
Minnesota State Board of Investments
Suite 105, MEA Building
55 Sherburne Avenue
St. Paul, MN 55155

RE: ANALYSIS OF THE IMPACT OF THE NWNL AMORTIZATION SCHEDULE ON FUTURE
GENERAL ACCOUNT INTEREST CREDITING RATES

Dear Howard:

The purpose of this letter to is share with you the analysis we have performed on the NWNL amortization schedule. MML is concerned that future interest rates be competitive. This can happen only if the expense savings (and economies of scale) resulting from NWNL's exit can offset the decline in the NWNL amortization schedule interest rates.

We constructed computer models to simulate the interest crediting rates. A baseline projection assumes that NWNL's investment performance mirrors MML's. Another interpretation of the baseline projection is that NWNL would continue to credit rates recommended by MML even though not supportable by NWNL investment performance. NWNL would be quick to point out that this baseline projection is not representative of a real option available in the future. However, the baseline is useful because it represents a basis which has been consistent with the past crediting practice--one which has resulted in competitive interest crediting rates.

The baseline projection assumes a continuation of the joint guarantee and the expenses associated with such an arrangement. The baseline projection does not enjoy the economies of scale which would be realized by consolidation with one company.

The "NWNL Exit Basis" projection treats the NWNL amortization schedule as part of MML's asset portfolio. The gross yield for the plan is the weighted average of the current NWNL interest rate from the amortization schedule and the current portfolio rate earned on the simulated MML asset portfolio. The simulated MML asset portfolio starts out with a fairly realistic cash flow projection on existing 6/30/93 assets. The model simulates reinvestment of investment cash flow and transfer payments from NWNL in fixed-income investment rates at assumed market yields. Three interest scenarios have been used in the projections. The static projection assumes reinvestment at 6.77% in 10-year amortizing fixed-income investments. The increasing rate scenario has market rates increasing 50 b.p. per year. The decreasing rate scenario drops to 5% in a couple of years and stays there.

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The net yield under the NWNL Exit Basis is the gross yield minus a "spread" for the recovery of expenses. This pricing spread is reduced under this basis (relative to the baseline projection) for two reasons. First, MML incurs no commissions on these new funds. Second, MML has decided to not allocate investment and overhead expense on assets which otherwise would have been NWNL assets under the joint contract. In reality, the commission expense savings is a true expense savings only to the extent that NWNL fails to recover its commission expense via the rates used in the amortization schedule. NWNL has maintained that it will not recover all of the commission expense that has been incurred on past contributions.

The pricing spread in the NWNL exit projection is increased somewhat (i.e., the reductions in spread discussed above are offset) because MML incurs 100% of the contract administration expense as opposed to 50% under the joint contract. However, I understand that NWNL has factored in this expense savings to NWNL in the amortization schedule interest rates. So the net impact should be a wash. Nevertheless, in the simulation we have to show it as an increased expense to MML.

Various scenarios involving variations in market yield on new investments and contribution and withdrawal levels were run. I've attached summaries for each scenario projected. The summaries show quarter by quarter projected crediting rates for the baseline projection and the NWNL Exit projection. The difference in the projected crediting rates is broken down into the expense components and the impact of the difference between the NWNL and MML 6/30/93 asset investment performance. The investment yield on new investments is the same under both the baseline and the NWNL Exit projections. The only investment difference comes about because of differences between the NWNL amortization schedule interest rates and the scheduled returns on existing MML 6/30 investments. NWNL would be quick to point out that the scheduled return on MML assets is not guaranteed while the NWNL rates are guaranteed. That's a valid point. MML's projected yields do reflect anticipated defaults and prepayments, but actual experience may be different than that assumed. It should also be noted that NWNL's amortization schedule interest rates are net of expenses, so the allocation of the difference in projected crediting rates among expense and investment yield components is not true. However, one can take the view that the NWNL amortization schedule rate is a gross yield so far as MML is concerned. That's exactly what our analysis does.

RESULTS (see attachments)

Scenario #1 assumes contributions and withdrawals follow historical trends and market interest rates remain at current levels. Long term this projection suggests the plan will do better under the NWNL Exit Basis than under the existing arrangement (which, according to NWNL requires NWNL to credit a rate higher than can be supported with actual investment results). Short term the rates would suffer. MML would prefer that NWNL raise the amortization schedule rates in the early years and reduce them in later years so that there

Howard Bicker
June 18, 1993
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would be no impact on crediting rates. That request has been made (for the U of M) but NWNL did not agree to it. NWNL makes the argument that they have already set the early year amortization schedule rates at levels that are higher than can currently be supported and they cannot increase them any more.

This leaves MML having to decide between dropping the crediting rate abruptly or temporarily supplementing NWNL's rates. I would prefer to not have to make this choice. However, the historical track record of crediting rates is very important and we definitely will supplement crediting rates rather than reduce them. We have every intention of eventually recovering this supplement and it appears that we would be able to do so without ever making the interest crediting rates uncompetitive. But these are just models and they are not perfect. So, by supplementing the rates today we have no assurance that we will be able to recover. Thankfully, the amount of the supplement required is relatively small and is required only during the first couple of years. I would prefer to be in a better position, but this arrangement, from my perspective, is significantly better than having NWNL forced to continue against their will and having them declare their own crediting rate on their one-half of the business.

Scenarios 2-5 explore the implications of declining deposits and/or increasing withdrawals during the ten-year period. The new investment yield is assumed to remain at 6.77%. While the assumptions under these scenarios are more onerous, the model suggests the impact on crediting rates would not be material.

Scenarios 6 & 7 explore the implications of increasing and decreasing market interest rates, respectively. The NWNL Exit Basis is beneficial to crediting rates in scenario 6 because the NWNL amortization schedule is of shorter duration than MML's 6/30/93 asset portfolio. That is, funds get reinvested more rapidly, which is beneficial under an increasing interest rate environment. Conversely, scenario 7 suggests that the NWNL Exit Basis is less favorable in a declining interest rate environment. However, our model is not super sophisticated. There is a distinct possibility that under this declining interest rate scenario MML's investment cash flow would be accelerated and the duration of MML assets would become shorter than NWNL's amortization schedule. Should that happen, the NWNL amortization schedule would be preferable to accelerated calls and prepayments on MML's asset portfolio.

The results we are sharing with you are based on updated studies performed in June. The first studies were performed earlier this year and were based on MML's 9/30/92 asset portfolio. That portfolio yield has declined a whole bunch since 9/30/92 due to investment of normal investment cash flow, prepayments and new contributions at prevailing lower market interest rates. NWNL based its amortization schedule on its 9/30/92 asset portfolio, but has agreed to apply these rates to 6/30/93 account values (perhaps NWNL anticipated having to do so when they set the rates in the first place?). As a result of all this the analysis looks much better today than when we first did it.

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SUMMARY

Based on the analysis we have performed I'm confident MML can maintain competitive interest rates under the NWNL Exit Basis. In the first couple of years it appears we will need to up front some of the future expense savings in order to do that. I'm not thrilled about that, but I view it as preferable to having NWNL as an unwilling partner whose primary objective is to exit the business.

Given the need to review these changes with the Attorney General's office and SBI, I'm anxious to move ahead. I'm available to meet with you to discuss the analysis we have performed. However, I will be out of the country from July 9th through July 23rd. So, the sooner we can address your questions, the better.

Yours truly,


Jim Hubbell, FSA
Second Vice President and Actuary

JGH/dc

Attachment

cc: Dave Bergstrom - MSRS
✓ Jim Heidelberg - SBI
Ken Lang - MSRS

CONTRIBUTIONS CONTINUE AT HISTORICAL LEVEL
 WITHDRAWALS CONTINUE AT HISTORICAL LEVEL
 YIELD ON NEW INVESTMENTS IS A LEVEL 6.77 PERCENT
 THE NEW INVESTMENTS ARE PREDOMINATELY BONDS AND MORTGAGES

ANALYSIS OF DIFFERENCE

ASSUMPTIONS:

QUARTER	TOTAL PLAN ASSETS	REMAINING MNML BALANCE	CREDITING RATE		DIFFERENCE	INVESTMENT AND OVERHEAD EXPENSE SAVINGS	IMPACT OF NO ACQUISITION EXPENSE ON MNML TRANSFER TO MNML		IMPACT OF HML HAVING TO ASSUME 100% OF ADMINISTRATION EXPENSES	IMPACT OF DIFFERENCE BETWEEN MNML AND MNML 6/30/93 ASSET INVESTMENT PERFORMANCE
			BASELINE CREDITING RATE PROJECTION	PROJECTED MNML EXIT BASIS			ACQUISITION EXPENSE ON MNML TRANSFER TO MNML	IMPACT OF HML HAVING TO ASSUME 100% OF ADMINISTRATION EXPENSES		
1	140,442,438	70,221,219	7.23%	7.04%	-0.19%	0.00%	0.00%	-0.10%	-0.09%	
2	143,945,389	68,504,431	7.12%	6.96%	-0.16%	0.01%	0.01%	-0.10%	-0.07%	
3	147,509,916	66,976,154	7.02%	6.89%	-0.13%	0.01%	0.02%	-0.09%	-0.06%	
4	151,138,769	65,148,625	6.87%	6.79%	-0.07%	0.02%	0.02%	-0.09%	-0.03%	
5	154,821,081	62,455,703	6.74%	6.62%	-0.12%	0.02%	0.03%	-0.08%	-0.09%	
6	158,530,918	60,643,832	6.68%	6.58%	-0.10%	0.03%	0.04%	-0.08%	-0.09%	
7	162,312,598	59,596,698	6.62%	6.54%	-0.08%	0.03%	0.04%	-0.07%	-0.09%	
8	166,167,969	57,742,076	6.49%	6.46%	-0.03%	0.04%	0.05%	-0.07%	-0.05%	
9	170,083,223	56,479,478	6.39%	6.33%	-0.06%	0.04%	0.05%	-0.07%	-0.09%	
0	174,038,002	54,519,902	6.33%	6.29%	-0.04%	0.05%	0.06%	-0.06%	-0.09%	
1	178,069,485	53,319,531	6.27%	6.25%	-0.02%	0.05%	0.06%	-0.06%	-0.06%	
2	182,177,853	51,600,683	6.19%	6.20%	0.01%	0.05%	0.07%	-0.05%	-0.09%	
3	186,359,078	49,838,945	6.10%	6.09%	-0.01%	0.06%	0.08%	-0.05%	-0.08%	
4	190,588,952	48,716,860	6.07%	6.07%	0.00%	0.06%	0.08%	-0.05%	-0.08%	
5	194,904,251	46,654,104	6.03%	6.05%	0.02%	0.06%	0.08%	-0.05%	-0.08%	
6	199,306,211	44,302,861	5.97%	6.01%	0.04%	0.07%	0.09%	-0.04%	-0.07%	
7	203,789,810	42,567,588	5.91%	5.91%	-0.00%	0.07%	0.09%	-0.04%	-0.12%	
8	208,326,272	41,258,490	5.88%	5.89%	0.02%	0.08%	0.09%	-0.04%	-0.11%	
9	212,954,640	39,139,713	5.85%	5.88%	0.03%	0.08%	0.09%	-0.03%	-0.11%	
0	217,678,440	37,585,086	5.81%	5.85%	0.05%	0.08%	0.10%	-0.03%	-0.10%	
1	222,494,668	36,179,088	5.77%	5.78%	0.02%	0.08%	0.10%	-0.03%	-0.14%	
2	227,379,896	35,429,981	5.75%	5.77%	0.03%	0.09%	0.10%	-0.03%	-0.13%	
3	232,367,319	33,459,150	5.73%	5.77%	0.04%	0.09%	0.10%	-0.03%	-0.13%	
4	237,459,148	31,825,107	5.70%	5.75%	0.05%	0.09%	0.10%	-0.02%	-0.12%	
5	242,654,506	30,603,674	5.65%	5.70%	0.04%	0.09%	0.11%	-0.02%	-0.13%	
6	247,932,759	27,878,411	5.64%	5.70%	0.06%	0.10%	0.11%	-0.02%	-0.13%	
7	253,324,867	26,537,770	5.62%	5.69%	0.07%	0.10%	0.11%	-0.02%	-0.12%	
8	258,829,254	24,325,742	5.59%	5.68%	0.09%	0.10%	0.11%	-0.02%	-0.11%	
9	264,448,075	22,369,376	5.58%	5.66%	0.07%	0.10%	0.11%	-0.01%	-0.13%	
0	270,174,186	19,428,744	5.57%	5.66%	0.09%	0.11%	0.12%	-0.01%	-0.12%	
1	276,025,265	17,226,547	5.56%	5.66%	0.10%	0.11%	0.12%	-0.01%	-0.12%	
2	282,003,090	15,017,469	5.54%	5.66%	0.11%	0.11%	0.12%	-0.01%	-0.12%	
3	288,107,776	13,934,419	5.52%	5.63%	0.11%	0.11%	0.12%	-0.01%	-0.11%	
4	294,330,361	12,522,783	5.51%	5.63%	0.12%	0.11%	0.12%	-0.01%	-0.11%	
5	300,687,451	10,048,483	5.51%	5.64%	0.13%	0.12%	0.12%	-0.00%	-0.10%	
6	307,184,064	6,376,221	5.49%	5.64%	0.14%	0.12%	0.12%	-0.00%	-0.09%	
7	313,819,764	6,529,034	5.51%	5.64%	0.13%	0.12%	0.12%	-0.00%	-0.11%	
8	320,605,352	4,341,798	5.50%	5.65%	0.15%	0.12%	0.12%	-0.00%	-0.10%	
9	327,539,025	1,977,511	5.49%	5.65%	0.16%	0.12%	0.12%	-0.00%	-0.09%	
0	334,624,938	646,064	5.48%	5.65%	0.17%	0.12%	0.12%	0.00%	-0.08%	

CONTRIBUTIONS AT ONE-HALF HISTORICAL LEVEL
WITHDRAWALS AT TWICE HISTORICAL LEVEL

YIELD ON NEW INVESTMENTS IS A LEVEL 6.77 PERCENT

THE NEW INVESTMENTS ARE PREDOMINATELY BONDS AND MORTGAGES

ANALYSIS OF DIFFERENCE

QUARTER	TOTAL PLAN ASSETS	REMAINING MNWL BALANCE	BASELINE CREDITING RATE PROJECTION	CREDITING RATE PROJECTED MNWL EXIT BASIS	DIFFERENCE	INVESTMENT AND OVERHEAD EXPENSE SAVINGS	IMPACT OF NO ACQUISITION EXPENSE ON MNWL TRANSFER TO MNWL	IMPACT OF MNWL HAVING TO ASSUME 100% OF ADMINISTRATION EXPENSES	IMPACT OF DIFFERENCE BETWEEN MNWL AND MNWL 6/30/93 ASSET INVESTMENT PERFORMANCE
1	140,442,438	70,221,219	7.23%	7.04%	-0.19%	0.00%	0.00%	-0.10%	-0.09%
2	141,509,987	68,504,431	7.15%	6.98%	-0.16%	0.00%	0.01%	-0.10%	-0.08%
3	142,568,493	66,976,154	7.08%	6.94%	-0.14%	0.01%	0.02%	-0.10%	-0.07%
4	143,619,362	65,148,625	6.95%	6.88%	-0.09%	0.01%	0.02%	-0.10%	-0.03%
5	144,650,351	62,455,703	6.84%	6.70%	-0.14%	0.02%	0.03%	-0.09%	-0.10%
6	145,634,364	60,643,832	6.80%	6.67%	-0.13%	0.02%	0.04%	-0.09%	-0.10%
7	146,614,961	59,596,698	6.76%	6.64%	-0.11%	0.02%	0.05%	-0.09%	-0.09%
8	147,592,377	57,742,076	6.63%	6.57%	-0.06%	0.03%	0.06%	-0.09%	-0.06%
9	148,551,292	56,479,478	6.54%	6.44%	-0.10%	0.03%	0.06%	-0.09%	-0.10%
0	149,469,990	54,519,902	6.50%	6.41%	-0.08%	0.03%	0.07%	-0.08%	-0.10%
1	150,384,771	53,319,531	6.45%	6.38%	-0.06%	0.04%	0.07%	-0.08%	-0.09%
2	151,294,043	51,600,693	6.37%	6.34%	-0.03%	0.04%	0.08%	-0.08%	-0.07%
3	152,192,185	49,838,945	6.28%	6.22%	-0.06%	0.04%	0.09%	-0.08%	-0.11%
4	153,053,443	48,716,860	6.25%	6.20%	-0.04%	0.05%	0.09%	-0.08%	-0.10%
5	153,913,429	46,654,104	6.22%	6.19%	-0.04%	0.05%	0.10%	-0.07%	-0.11%
6	154,771,582	44,302,861	6.16%	6.15%	-0.01%	0.05%	0.10%	-0.07%	-0.09%
7	155,621,094	42,567,588	6.09%	6.03%	-0.06%	0.06%	0.11%	-0.07%	-0.16%
8	156,431,366	41,258,490	6.06%	6.02%	-0.04%	0.06%	0.11%	-0.07%	-0.15%
9	157,240,268	39,139,713	6.04%	6.01%	-0.03%	0.06%	0.12%	-0.06%	-0.15%
0	158,049,323	37,585,086	5.99%	5.98%	-0.01%	0.07%	0.12%	-0.06%	-0.14%
1	158,853,456	36,179,088	5.95%	5.89%	-0.06%	0.07%	0.13%	-0.06%	-0.19%
2	159,627,271	35,429,981	5.93%	5.89%	-0.05%	0.07%	0.13%	-0.06%	-0.19%
3	160,402,381	33,459,150	5.91%	5.86%	-0.03%	0.07%	0.13%	-0.05%	-0.18%
4	161,178,941	31,825,107	5.86%	5.86%	-0.01%	0.08%	0.14%	-0.05%	-0.17%
5	161,953,821	30,603,674	5.82%	5.79%	-0.03%	0.08%	0.14%	-0.05%	-0.20%
6	162,704,135	27,878,411	5.81%	5.80%	-0.01%	0.08%	0.15%	-0.05%	-0.19%
7	163,459,442	26,537,770	5.78%	5.79%	0.01%	0.08%	0.15%	-0.04%	-0.18%
8	164,215,333	24,325,742	5.75%	5.78%	0.03%	0.09%	0.16%	-0.04%	-0.17%
9	164,971,868	22,369,376	5.74%	5.75%	0.01%	0.09%	0.16%	-0.04%	-0.21%
0	165,719,385	19,428,744	5.73%	5.76%	0.03%	0.10%	0.17%	-0.03%	-0.20%
1	166,473,647	17,226,547	5.72%	5.76%	0.05%	0.10%	0.17%	-0.03%	-0.19%
2	167,233,519	15,017,469	5.69%	5.76%	0.07%	0.10%	0.18%	-0.03%	-0.18%
3	167,996,512	13,934,419	5.66%	5.73%	0.07%	0.10%	0.18%	-0.02%	-0.18%
4	168,750,661	12,522,783	5.66%	5.74%	0.08%	0.11%	0.18%	-0.02%	-0.18%
5	169,510,296	10,048,483	5.65%	5.75%	0.10%	0.11%	0.18%	-0.02%	-0.18%
6	170,277,774	8,376,221	5.63%	5.75%	0.12%	0.11%	0.19%	-0.01%	-0.17%
7	171,049,547	6,529,034	5.67%	5.77%	0.10%	0.12%	0.19%	-0.01%	-0.19%
8	171,833,555	4,341,798	5.66%	5.78%	0.12%	0.12%	0.19%	-0.01%	-0.18%
9	172,625,037	1,977,511	5.64%	5.79%	0.15%	0.12%	0.20%	-0.00%	-0.17%
0	173,425,068	646,064	5.62%	5.79%	0.17%	0.12%	0.20%	-0.00%	-0.15%

CONTRIBUTIONS CEASE AFTER TWO YEARS
 WITHDRAWALS CONTINUE AT HISTORICAL LEVEL
 YIELD ON NEW INVESTMENTS IS A LEVEL 6.77 PERCENT
 THE NEW INVESTMENTS ARE PREDOMINATELY BONDS AND MORTGAGES

ANALYSIS OF DIFFERENCE

ASSUMPTIONS:

TOTAL PLAN ASSETS	REMAINING MMNL BALANCE	BASELINE CREDITING RATE PROJECTION	CREDITING RATE PROJECTED MMNL EXIT BASIS	DIFFERENCE	INVESTMENT AND OVERHEAD EXPENSE SAVINGS	IMPACT OF NO ACQUISITION EXPENSE ON MMNL TRANSFER TO MMNL	IMPACT OF MMNL HAVING TO ASSUME 100% OF ADMINISTRATION EXPENSES	IMPACT OF DIFFERENCE BETWEEN MMNL AND MMNL 6/30/93 ASSET INVESTMENT PERFORMANCE
140,442,436	70,221,219	7.23%	7.04%	-0.19%	0.00%	0.00%	-0.10%	-0.09%
143,945,389	68,504,431	7.12%	6.96%	-0.16%	0.01%	0.01%	-0.10%	-0.07%
147,509,916	66,976,154	7.02%	6.89%	-0.13%	0.01%	0.02%	-0.09%	-0.06%
151,138,769	65,148,625	6.87%	6.79%	-0.07%	0.02%	0.03%	-0.09%	-0.03%
154,821,081	62,455,703	6.74%	6.62%	-0.12%	0.02%	0.04%	-0.08%	-0.09%
158,530,918	60,643,832	6.68%	6.58%	-0.10%	0.03%	0.04%	-0.07%	-0.09%
162,312,598	59,596,698	6.62%	6.54%	-0.08%	0.03%	0.04%	-0.07%	-0.09%
166,167,969	57,742,076	6.49%	6.46%	-0.03%	0.04%	0.05%	-0.07%	-0.05%
170,083,223	56,479,478	6.39%	6.33%	-0.06%	0.04%	0.05%	-0.07%	-0.09%
171,187,284	54,519,902	6.35%	6.30%	-0.05%	0.05%	0.05%	-0.06%	-0.09%
172,288,831	53,319,531	6.30%	6.27%	-0.03%	0.05%	0.07%	-0.06%	-0.08%
173,386,426	51,600,683	6.23%	6.23%	0.00%	0.05%	0.07%	-0.06%	-0.06%
174,474,427	49,836,945	6.16%	6.13%	-0.02%	0.05%	0.08%	-0.06%	-0.09%
175,527,077	48,716,860	6.13%	6.12%	-0.01%	0.06%	0.08%	-0.06%	-0.09%
176,579,995	46,654,104	6.11%	6.10%	-0.00%	0.06%	0.09%	-0.06%	-0.09%
177,632,644	44,302,861	6.05%	6.07%	0.02%	0.06%	0.10%	-0.05%	-0.08%
178,678,214	42,567,588	5.99%	5.97%	-0.02%	0.07%	0.10%	-0.05%	-0.14%
179,686,183	41,258,490	5.97%	5.96%	-0.01%	0.07%	0.11%	-0.05%	-0.13%
180,694,350	39,139,713	5.95%	5.95%	0.00%	0.07%	0.11%	-0.05%	-0.13%
181,704,326	37,585,086	5.90%	5.93%	0.02%	0.07%	0.12%	-0.05%	-0.12%
182,711,082	36,179,088	5.87%	5.85%	-0.02%	0.08%	0.12%	-0.04%	-0.17%
183,689,245	35,429,981	5.85%	5.84%	-0.01%	0.08%	0.12%	-0.04%	-0.16%
184,670,438	33,459,150	5.83%	5.84%	0.01%	0.08%	0.13%	-0.04%	-0.16%
185,654,797	31,825,107	5.80%	5.83%	0.03%	0.08%	0.13%	-0.04%	-0.15%
186,639,245	30,603,674	5.75%	5.77%	0.01%	0.08%	0.14%	-0.04%	-0.17%
187,600,944	27,878,411	5.74%	5.77%	0.03%	0.09%	0.14%	-0.03%	-0.17%
188,569,289	26,537,770	5.72%	5.76%	0.04%	0.09%	0.15%	-0.03%	-0.16%
189,540,094	24,325,742	5.69%	5.76%	0.06%	0.09%	0.15%	-0.03%	-0.15%
190,513,304	22,369,376	5.69%	5.73%	0.05%	0.10%	0.16%	-0.03%	-0.18%
191,479,365	19,428,744	5.67%	5.74%	0.07%	0.10%	0.16%	-0.02%	-0.17%
192,453,913	17,226,547	5.66%	5.75%	0.08%	0.10%	0.17%	-0.02%	-0.17%
193,435,956	15,017,469	5.64%	5.75%	0.10%	0.11%	0.17%	-0.02%	-0.16%
194,423,031	13,934,419	5.62%	5.72%	0.10%	0.11%	0.18%	-0.02%	-0.16%
195,403,319	12,522,783	5.61%	5.73%	0.11%	0.11%	0.18%	-0.02%	-0.16%
196,391,044	10,040,483	5.60%	5.74%	0.13%	0.11%	0.19%	-0.01%	-0.15%
197,388,583	8,376,221	5.59%	5.74%	0.15%	0.11%	0.19%	-0.01%	-0.14%
198,392,471	6,529,034	5.62%	5.76%	0.13%	0.12%	0.19%	-0.01%	-0.17%
199,410,657	4,341,798	5.61%	5.77%	0.16%	0.12%	0.20%	-0.01%	-0.16%
200,436,359	1,977,511	5.60%	5.78%	0.18%	0.12%	0.20%	-0.00%	-0.14%
201,476,686	646,064	5.58%	5.78%	0.20%	0.12%	0.20%	-0.00%	-0.13%

CONTRIBUTIONS CEASE AFTER FOUR YEARS
 WITHDRAWALS CONTINUE AT HISTORICAL LEVEL
 YIELD ON NEW INVESTMENTS IS A LEVEL 6.77 PERCENT
 THE NEW INVESTMENTS ARE PREDOMINATELY BONDS AND MORTGAGES

ANALYSIS OF DIFFERENCE

TOTAL PLAN ASSETS	REMAINING MNL BALANCE	BASELINE CREDITING RATE PROJECTION	CREDITING RATE		DIFFERENCE	INVESTMENT AND OVERHEAD EXPENSE SAVINGS	IMPACT OF NO ACQUISITION EXPENSE ON MNL TRANSFER TO MNL	IMPACT OF MNL HAVING TO ASSUME 100% OF ADMINISTRATION EXPENSES	IMPACT OF DIFFERENCE BETWEEN MNL AND MNL 6/30/93 ASSET INVESTMENT PERFORMANCE
			PROJECTED MNL	EXIT BASIS					
140,442,438	70,221,219	7.23%	7.04%		-0.19%	0.00%	0.00%	-0.10%	-0.09%
143,945,389	68,504,431	7.12%	6.96%		-0.16%	0.01%	0.01%	-0.10%	-0.07%
147,509,916	66,976,154	7.02%	6.89%		-0.13%	0.01%	0.02%	-0.09%	-0.06%
151,138,769	65,148,625	6.87%	6.79%		-0.07%	0.02%	0.02%	-0.09%	-0.03%
154,821,081	62,455,703	6.74%	6.62%		-0.12%	0.02%	0.03%	-0.08%	-0.09%
158,530,918	60,643,832	6.68%	6.58%		-0.10%	0.03%	0.04%	-0.08%	-0.09%
162,312,598	59,596,698	6.62%	6.54%		-0.08%	0.03%	0.04%	-0.07%	-0.09%
166,167,969	57,742,076	6.49%	6.46%		-0.03%	0.04%	0.05%	-0.07%	-0.05%
170,083,223	56,479,478	6.39%	6.33%		-0.06%	0.04%	0.05%	-0.07%	-0.09%
174,038,002	54,519,902	6.33%	6.29%		-0.04%	0.05%	0.06%	-0.06%	-0.09%
178,069,485	53,319,531	6.27%	6.25%		-0.02%	0.05%	0.06%	-0.06%	-0.08%
182,177,853	51,600,683	6.19%	6.20%		0.01%	0.05%	0.07%	-0.06%	-0.06%
186,359,078	49,838,945	6.10%	6.09%		-0.01%	0.06%	0.07%	-0.05%	-0.09%
190,588,952	48,716,860	6.07%	6.07%		0.00%	0.06%	0.08%	-0.05%	-0.08%
194,904,251	46,654,104	6.03%	6.05%		0.02%	0.06%	0.08%	-0.05%	-0.08%
199,306,211	44,302,861	5.97%	6.01%		0.04%	0.07%	0.09%	-0.04%	-0.07%
203,789,810	42,567,588	5.91%	5.91%		-0.00%	0.07%	0.09%	-0.04%	-0.12%
204,910,608	41,258,490	5.89%	5.90%		0.01%	0.07%	0.09%	-0.04%	-0.12%
206,031,999	39,139,713	5.87%	5.89%		0.02%	0.08%	0.10%	-0.04%	-0.12%
207,155,598	37,585,086	5.83%	5.87%		0.04%	0.08%	0.10%	-0.04%	-0.11%
208,276,408	36,179,088	5.80%	5.80%		0.01%	0.08%	0.11%	-0.03%	-0.15%
209,369,058	35,429,981	5.79%	5.80%		0.01%	0.08%	0.11%	-0.03%	-0.14%
210,465,175	33,459,150	5.77%	5.80%		0.03%	0.09%	0.11%	-0.03%	-0.14%
211,564,867	31,825,107	5.74%	5.79%		0.04%	0.09%	0.12%	-0.03%	-0.13%
212,665,074	30,603,674	5.70%	5.73%		0.03%	0.09%	0.12%	-0.03%	-0.15%
213,742,982	27,878,411	5.69%	5.73%		0.04%	0.09%	0.13%	-0.03%	-0.15%
214,827,851	26,537,770	5.67%	5.73%		0.06%	0.09%	0.13%	-0.03%	-0.14%
215,915,627	24,325,742	5.65%	5.72%		0.07%	0.10%	0.13%	-0.02%	-0.13%
217,006,195	22,369,376	5.64%	5.70%		0.06%	0.10%	0.14%	-0.02%	-0.16%
218,090,016	19,428,744	5.63%	5.71%		0.08%	0.10%	0.14%	-0.02%	-0.15%
219,182,630	17,228,547	5.62%	5.71%		0.09%	0.11%	0.15%	-0.02%	-0.15%
220,283,126	15,017,469	5.60%	5.71%		0.11%	0.11%	0.15%	-0.01%	-0.14%
221,389,039	13,934,419	5.58%	5.69%		0.11%	0.11%	0.16%	-0.01%	-0.15%
222,488,622	12,522,783	5.58%	5.69%		0.12%	0.11%	0.16%	-0.01%	-0.14%
223,596,059	10,048,483	5.57%	5.70%		0.13%	0.11%	0.16%	-0.01%	-0.13%
224,713,679	8,376,221	5.56%	5.70%		0.15%	0.12%	0.17%	-0.01%	-0.13%
225,838,067	6,529,034	5.59%	5.72%		0.13%	0.12%	0.17%	-0.01%	-0.15%
226,977,162	4,341,798	5.58%	5.73%		0.15%	0.12%	0.17%	-0.00%	-0.14%
228,126,148	1,977,511	5.57%	5.74%		0.17%	0.12%	0.18%	-0.00%	-0.13%
229,286,131	646,064	5.55%	5.74%		0.19%	0.12%	0.18%	-0.00%	-0.12%

CONTRIBUTIONS CEASE AFTER SIX YEARS
 WITHDRAWALS CONTINUE AT HISTORICAL LEVEL
 YIELD ON NEW INVESTMENTS IS A LEVEL 6.77 PERCENT
 THE NEW INVESTMENTS ARE PREDOMINATELY BONDS AND MORTGAGES

ANALYSIS OF DIFFERENCE

SUMPTIONS:

QUARTER	TOTAL PLAN ASSETS	REMAINING MML BALANCE	CREDITING RATE		DIFFERENCE	INVESTMENT AND OVERHEAD EXPENSE SAVINGS	IMPACT OF NO ACQUISITION EXPENSE ON MML TRANSFER TO MML	IMPACT OF HAVING TO ASSUME 100% OF ADMINISTRATION EXPENSES	IMPACT OF DIFFERENCE BETWEEN MML AND MML 6/30/93 ASSET INVESTMENT PERFORMANCE
			BASELINE CREDITING RATE PROJECTION	PROJECTED MML EXIT BASIS					
1	140,442,438	70,221,219	7.23%	7.04%	-0.19%	0.00%	0.00%	-0.10%	-0.09%
2	143,945,369	66,504,431	7.12%	6.96%	-0.16%	0.01%	0.01%	-0.10%	-0.07%
3	147,509,916	66,976,154	7.02%	6.89%	-0.13%	0.01%	0.02%	-0.09%	-0.06%
4	151,138,769	65,148,625	6.87%	6.79%	-0.07%	0.02%	0.02%	-0.09%	-0.03%
5	154,821,081	62,455,703	6.74%	6.62%	-0.12%	0.02%	0.03%	-0.08%	-0.09%
6	158,530,918	60,643,832	6.68%	6.58%	-0.10%	0.03%	0.04%	-0.08%	-0.09%
7	162,312,598	59,596,698	6.62%	6.54%	-0.08%	0.03%	0.04%	-0.07%	-0.09%
8	166,167,969	57,742,076	6.49%	6.46%	-0.03%	0.04%	0.05%	-0.07%	-0.05%
9	170,083,223	56,479,478	6.39%	6.33%	-0.06%	0.04%	0.05%	-0.07%	-0.09%
10	174,038,002	54,519,902	6.33%	6.29%	-0.04%	0.05%	0.06%	-0.06%	-0.09%
11	178,069,485	53,319,531	6.27%	6.25%	-0.02%	0.05%	0.06%	-0.06%	-0.06%
12	182,177,853	51,600,663	6.19%	6.20%	0.01%	0.06%	0.07%	-0.06%	-0.09%
13	186,359,078	49,838,945	6.10%	6.09%	-0.01%	0.06%	0.07%	-0.05%	-0.09%
14	190,588,952	48,716,860	6.07%	6.07%	0.00%	0.06%	0.08%	-0.05%	-0.08%
15	194,904,251	46,654,104	6.03%	6.05%	0.02%	0.06%	0.08%	-0.05%	-0.08%
16	199,306,211	44,302,861	5.97%	6.01%	0.04%	0.07%	0.09%	-0.04%	-0.07%
17	203,789,810	42,567,588	5.91%	5.91%	-0.00%	0.07%	0.09%	-0.04%	-0.12%
18	208,326,272	41,258,490	5.88%	5.89%	0.02%	0.08%	0.09%	-0.04%	-0.11%
19	212,954,640	39,139,713	5.85%	5.88%	0.03%	0.08%	0.09%	-0.03%	-0.11%
20	217,678,440	37,585,086	5.81%	5.85%	0.05%	0.08%	0.10%	-0.03%	-0.10%
21	222,494,668	36,179,088	5.77%	5.78%	0.02%	0.08%	0.10%	-0.03%	-0.14%
22	227,379,896	35,429,981	5.75%	5.77%	0.03%	0.09%	0.10%	-0.03%	-0.13%
23	232,367,319	33,459,150	5.73%	5.77%	0.04%	0.09%	0.10%	-0.03%	-0.13%
24	237,459,148	31,825,107	5.70%	5.75%	0.05%	0.09%	0.10%	-0.02%	-0.12%
25	242,654,506	30,603,674	5.65%	5.70%	0.04%	0.09%	0.11%	-0.02%	-0.13%
26	243,865,694	27,878,411	5.64%	5.70%	0.06%	0.10%	0.11%	-0.02%	-0.13%
27	245,084,255	26,537,770	5.63%	5.70%	0.07%	0.10%	0.11%	-0.02%	-0.12%
28	246,306,252	24,325,742	5.61%	5.69%	0.08%	0.10%	0.12%	-0.02%	-0.12%
29	247,531,520	22,369,376	5.60%	5.67%	0.07%	0.10%	0.12%	-0.02%	-0.14%
30	248,750,529	19,428,744	5.59%	5.68%	0.08%	0.11%	0.13%	-0.01%	-0.13%
31	249,978,737	17,226,547	5.59%	5.68%	0.09%	0.11%	0.13%	-0.01%	-0.13%
32	251,215,305	15,017,469	5.57%	5.68%	0.11%	0.11%	0.13%	-0.01%	-0.12%
33	252,457,766	13,934,419	5.55%	5.66%	0.11%	0.11%	0.14%	-0.01%	-0.13%
34	253,694,441	12,522,783	5.55%	5.66%	0.12%	0.11%	0.14%	-0.01%	-0.12%
35	254,939,477	10,048,483	5.54%	5.67%	0.13%	0.12%	0.14%	-0.01%	-0.12%
36	256,195,157	6,376,221	5.53%	5.67%	0.15%	0.12%	0.15%	-0.01%	-0.11%
37	257,458,117	6,529,034	5.55%	5.69%	0.13%	0.12%	0.15%	-0.00%	-0.13%
38	258,736,283	4,341,798	5.54%	5.69%	0.15%	0.12%	0.15%	-0.00%	-0.12%
39	260,024,813	1,977,511	5.54%	5.70%	0.17%	0.12%	0.16%	-0.00%	-0.11%
40	261,324,811	646,064	5.52%	5.70%	0.18%	0.12%	0.16%	-0.00%	-0.10%

CONTRIBUTIONS CONTINUE AT HISTORICAL LEVEL
 WITHDRAWALS CONTINUE AT HISTORICAL LEVEL
 YIELD ON NEW INVESTMENTS STARTS AT 6.77, INCREASES 12.5 BASIS POINTS EACH QUARTER
 THE NEW INVESTMENTS ARE PREDOMINATELY BONDS AND MORTGAGES

ANALYSIS OF DIFFERENCE

QUARTER	TOTAL PLAN ASSETS	REMAINING MNWL BALANCE	CREDITING RATE		DIFFERENCE	INVESTMENT AND OVERHEAD EXPENSE SAVINGS	IMPACT OF NO ACQUISITION EXPENSE ON MNWL TRANSFER TO MNWL	IMPACT OF MNWL HAVING TO ASSUME 100% OF ADMINISTRATION EXPENSES	IMPACT OF DIFFERENCE BETWEEN MNWL AND MNWL 6/30/93 ASSET INVESTMENT PERFORMANCE
			BASELINE CREDITING RATE PROJECTION	PROJECTED MNWL EXIT BASIS					
	140,442,438	70,221,219	7.23%	7.04%	-0.19%	0.00%	0.00%	-0.10%	-0.09%
	143,945,389	68,504,431	7.12%	6.97%	-0.16%	0.01%	0.01%	-0.10%	-0.08%
	147,512,168	66,976,154	7.05%	6.92%	-0.13%	0.01%	0.02%	-0.09%	-0.07%
	151,149,787	65,148,625	6.94%	6.85%	-0.08%	0.02%	0.02%	-0.09%	-0.04%
	154,854,355	62,455,703	6.85%	6.73%	-0.13%	0.02%	0.03%	-0.08%	-0.10%
	158,603,686	60,643,832	6.84%	6.73%	-0.11%	0.03%	0.04%	-0.08%	-0.10%
	162,445,505	59,596,698	6.84%	6.74%	-0.09%	0.03%	0.04%	-0.07%	-0.10%
	166,385,072	57,742,076	6.81%	6.75%	-0.06%	0.04%	0.05%	-0.07%	-0.08%
	170,421,375	56,479,478	6.78%	6.69%	-0.09%	0.04%	0.06%	-0.07%	-0.12%
	174,532,570	54,519,902	6.81%	6.74%	-0.07%	0.05%	0.06%	-0.06%	-0.12%
	178,762,716	53,319,531	6.85%	6.79%	-0.06%	0.05%	0.06%	-0.06%	-0.11%
	183,116,744	51,600,683	6.89%	6.85%	-0.04%	0.06%	0.07%	-0.06%	-0.11%
	187,602,041	49,838,945	6.90%	6.84%	-0.06%	0.06%	0.07%	-0.05%	-0.14%
	192,194,758	48,716,860	6.96%	6.92%	-0.05%	0.06%	0.08%	-0.05%	-0.14%
	196,935,328	46,654,104	7.04%	7.01%	-0.03%	0.07%	0.08%	-0.05%	-0.13%
	201,834,389	44,302,861	7.12%	7.11%	-0.01%	0.07%	0.09%	-0.04%	-0.12%
	206,902,555	42,567,588	7.17%	7.13%	-0.04%	0.07%	0.09%	-0.04%	-0.17%
	212,108,655	41,258,490	7.26%	7.23%	-0.03%	0.08%	0.09%	-0.04%	-0.16%
	217,498,607	39,139,713	7.35%	7.35%	-0.01%	0.08%	0.10%	-0.03%	-0.15%
	223,085,110	37,585,086	7.46%	7.47%	0.01%	0.08%	0.10%	-0.03%	-0.14%
	228,877,629	36,179,088	7.54%	7.53%	-0.02%	0.09%	0.10%	-0.03%	-0.17%
	234,853,313	35,429,981	7.65%	7.64%	-0.01%	0.09%	0.10%	-0.03%	-0.17%
	241,048,661	33,459,150	7.76%	7.77%	0.02%	0.09%	0.10%	-0.02%	-0.15%
	247,483,065	31,825,107	7.88%	7.91%	0.03%	0.09%	0.11%	-0.02%	-0.14%
	254,168,435	30,603,674	7.96%	7.99%	0.03%	0.09%	0.11%	-0.02%	-0.15%
	261,085,409	27,878,411	8.08%	8.15%	0.07%	0.10%	0.11%	-0.02%	-0.12%
	268,285,375	26,537,770	8.21%	8.29%	0.08%	0.10%	0.11%	-0.02%	-0.11%
	275,772,244	24,325,742	8.34%	8.45%	0.11%	0.10%	0.11%	-0.01%	-0.10%
	283,569,950	22,369,376	8.46%	8.57%	0.11%	0.10%	0.11%	-0.01%	-0.10%
	291,674,429	19,428,744	8.59%	8.74%	0.15%	0.11%	0.12%	-0.01%	-0.06%
	300,125,351	17,226,547	8.71%	8.90%	0.19%	0.11%	0.12%	-0.01%	-0.04%
	308,930,721	15,017,469	8.85%	9.06%	0.21%	0.11%	0.12%	-0.01%	-0.01%
	318,112,051	13,934,419	8.97%	9.19%	0.22%	0.11%	0.12%	-0.01%	-0.01%
	327,659,215	12,522,783	9.09%	9.33%	0.24%	0.12%	0.12%	-0.01%	0.01%
	337,605,423	10,048,483	9.22%	9.50%	0.28%	0.12%	0.12%	-0.00%	0.04%
	347,983,376	8,376,221	9.36%	9.65%	0.30%	0.12%	0.12%	-0.00%	0.06%
	358,806,990	6,529,034	9.51%	9.81%	0.31%	0.12%	0.12%	-0.00%	0.07%
	370,102,130	4,341,798	9.64%	9.98%	0.34%	0.12%	0.12%	-0.00%	0.09%
	381,893,469	1,977,511	9.77%	10.14%	0.37%	0.12%	0.12%	-0.00%	0.12%
	394,206,587	646,064	9.91%	10.29%	0.38%	0.13%	0.12%	0.00%	0.13%

ANALYSIS OF DIFFERENCE

CONTRIBUTIONS CONTINUE AT HISTORICAL LEVEL
 WITHDRAWALS CONTINUE AT HISTORICAL LEVEL
 YIELD ON NEW INVESTMENTS STARTS AT 6.77, DECREASES 12.5 BASIS POINTS EACH QUARTER, MINIMUM 5.00%
 THE NEW INVESTMENTS ARE PREDOMINATELY BONDS AND MORTGAGES

QUARTER	TOTAL PLAN ASSETS	REMAINING MNWL BALANCE	CREDITING RATE		DIFFERENCE	INVESTMENT AND OVERHEAD EXPENSE SAVINGS	IMPACT OF NO ACQUISITION EXPENSE ON MNWL TRANSFER TO MNWL	IMPACT OF MNWL HAVING TO ASSUME 100% OF ADMINISTRATION EXPENSES	IMPACT OF DIFFERENCE BETWEEN MNWL AND MNWL 6/30/93 ASSET INVESTMENT PERFORMANCE
			BASELINE CREDITING RATE PROJECTION	PROJECTED MNWL EXIT BASIS					
1	140,442,438	70,221,219	7.23%	7.04%	-0.19%	0.00%	0.00%	-0.10%	-0.09%
2	143,945,389	68,504,431	7.11%	6.95%	-0.16%	0.01%	0.01%	-0.10%	-0.07%
3	147,507,664	66,976,154	6.99%	6.87%	-0.13%	0.01%	0.02%	-0.09%	-0.06%
4	151,127,752	65,148,625	6.79%	6.73%	-0.06%	0.02%	0.02%	-0.09%	-0.02%
5	154,787,819	62,455,703	6.63%	6.52%	-0.11%	0.02%	0.03%	-0.08%	-0.08%
6	158,458,211	60,643,832	6.52%	6.42%	-0.09%	0.03%	0.04%	-0.08%	-0.08%
7	162,179,907	59,596,698	6.40%	6.33%	-0.07%	0.03%	0.04%	-0.07%	-0.07%
8	165,951,442	57,742,076	6.17%	6.16%	-0.01%	0.04%	0.05%	-0.07%	-0.02%
9	169,746,328	56,479,478	5.99%	5.96%	-0.03%	0.04%	0.05%	-0.07%	-0.06%
0	173,545,948	54,519,902	5.86%	5.84%	-0.01%	0.05%	0.06%	-0.06%	-0.06%
1	177,380,885	53,319,531	5.70%	5.72%	0.02%	0.05%	0.06%	-0.06%	-0.04%
2	181,246,955	51,600,663	5.50%	5.56%	0.06%	0.05%	0.07%	-0.06%	-0.01%
3	185,129,149	49,838,945	5.32%	5.36%	0.04%	0.06%	0.07%	-0.05%	-0.04%
4	189,003,593	48,716,860	5.18%	5.23%	0.05%	0.06%	0.08%	-0.05%	-0.03%
5	192,904,176	46,654,104	5.04%	5.10%	0.06%	0.06%	0.08%	-0.05%	-0.04%
6	196,823,580	44,302,861	4.91%	4.99%	0.08%	0.07%	0.08%	-0.04%	-0.03%
7	200,770,841	42,567,588	4.82%	4.86%	0.04%	0.07%	0.09%	-0.04%	-0.08%
8	204,730,764	41,258,490	4.75%	4.80%	0.05%	0.07%	0.09%	-0.04%	-0.07%
9	208,741,746	39,139,713	4.70%	4.75%	0.05%	0.08%	0.09%	-0.04%	-0.09%
0	212,804,900	37,585,086	4.61%	4.68%	0.07%	0.08%	0.10%	-0.03%	-0.07%
1	216,912,844	36,179,088	4.54%	4.58%	0.04%	0.08%	0.10%	-0.03%	-0.11%
2	221,047,126	35,429,981	4.50%	4.55%	0.05%	0.08%	0.10%	-0.03%	-0.11%
3	225,243,369	33,459,150	4.46%	4.51%	0.05%	0.09%	0.10%	-0.03%	-0.11%
4	229,496,829	31,825,107	4.39%	4.46%	0.06%	0.09%	0.10%	-0.03%	-0.10%
5	233,803,488	30,603,674	4.33%	4.38%	0.05%	0.09%	0.10%	-0.02%	-0.12%
6	238,147,062	27,878,411	4.30%	4.35%	0.05%	0.10%	0.11%	-0.02%	-0.13%
7	242,551,281	26,537,770	4.25%	4.31%	0.06%	0.10%	0.11%	-0.02%	-0.13%
8	247,016,687	24,325,742	4.20%	4.27%	0.07%	0.10%	0.11%	-0.02%	-0.12%
9	251,538,653	22,369,376	4.17%	4.22%	0.05%	0.10%	0.11%	-0.02%	-0.15%
0	256,113,897	19,428,744	4.14%	4.19%	0.05%	0.11%	0.12%	-0.01%	-0.16%
1	260,754,152	17,226,547	4.12%	4.17%	0.05%	0.11%	0.12%	-0.01%	-0.17%
2	265,463,698	15,017,469	4.08%	4.14%	0.06%	0.11%	0.12%	-0.01%	-0.16%
3	270,237,942	13,934,419	4.05%	4.10%	0.05%	0.11%	0.12%	-0.01%	-0.17%
4	275,074,110	12,522,783	4.03%	4.08%	0.06%	0.11%	0.12%	-0.01%	-0.17%
5	279,986,701	10,048,483	4.01%	4.07%	0.06%	0.12%	0.12%	-0.01%	-0.17%
6	284,974,207	8,376,221	3.98%	4.04%	0.06%	0.12%	0.12%	-0.00%	-0.17%
7	290,036,064	6,529,034	3.99%	4.04%	0.05%	0.12%	0.12%	-0.00%	-0.19%
8	295,182,878	4,341,798	3.97%	4.02%	0.05%	0.12%	0.12%	-0.00%	-0.19%
9	300,408,321	1,977,511	3.95%	4.00%	0.06%	0.12%	0.12%	-0.00%	-0.19%
0	305,714,614	646,064	3.92%	3.98%	0.07%	0.12%	0.12%	-0.00%	-0.18%

MINNESOTA STATE DEFERRED COMPENSATION PLAN

June 14th, 1993 Outline

Effective July 1, 1993 NWNL will begin an orderly withdrawal from its involvement in the Minnesota State Deferred Compensation Contract:

1. All contributions received after July 1, 1993 will be MML liabilities only. No joint guarantee will apply to these contributions.
2. The joint guarantee on fixed account contributions (and future interest credited thereon) received before July 1, 1993 will continue for ten years. After ten years these funds will become MML-only liabilities.
3. MML will also be solely liable for fixed account funds resulting from (1) transfers to the fixed account from separate accounts or other investment options or (2) retirement annuities purchased after July 1, 1993.
4. Retirement annuities purchased prior to July 1, 1993 will continue to be jointly guaranteed beyond the ten year transition.
5. NWNL will transfer assets (cash) to MML during the ten year transition period according to a predetermined amortization schedule to fund the increased liabilities being assumed by MML.
6. Interest crediting rates will continue to be competitive relative to alternative fixed rate investments. NWNL is providing guarantees which will protect the plans against potentially deteriorating performance on real estate and commercial mortgage investments.

Suggested discussion outline for 6/16 SDC meeting

I. Status of other joint contracts

A. U of M

1. Series of discussions with Administration/Faculty
2. On course for July 1 effective date
3. Participant communication June 2
4. Basis slightly different from original plan
 - a. Simpler
 - b. Continuation of joint guarantee for 10 years
5. Contracts amendments now being developed

B. MSUS

1. Discussions with Nan Wright--Plan Administrator
2. Go along with U of M
3. Ochs to handle communications with participants
4. Contract amendments now being developed

II. SDC Update

A. Update basis for consistency with U of M

B. Review revised basis (see separate discussion outline)

III. Future direction

MML/NWNL JOINT CONTRACTS

new

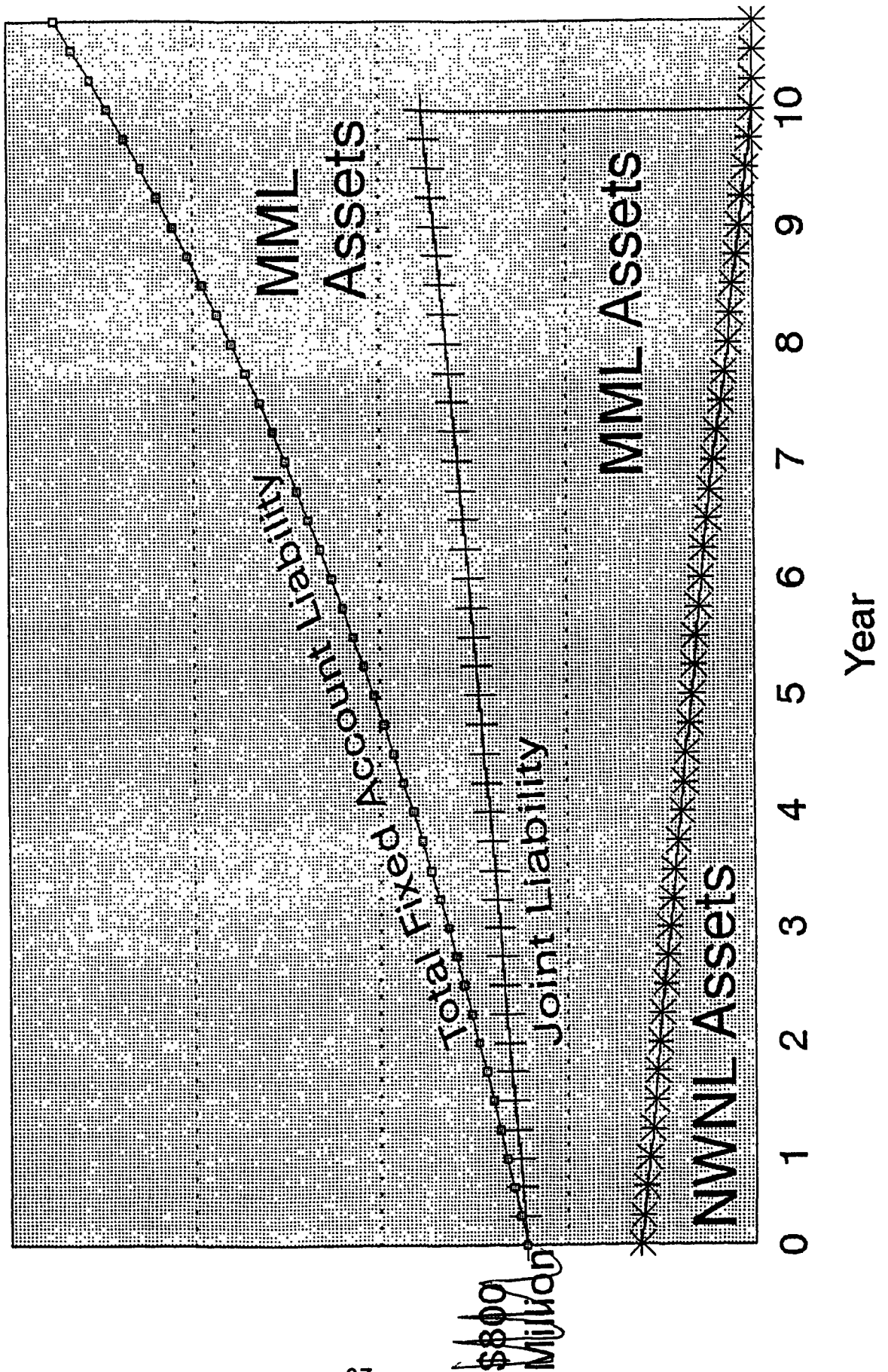
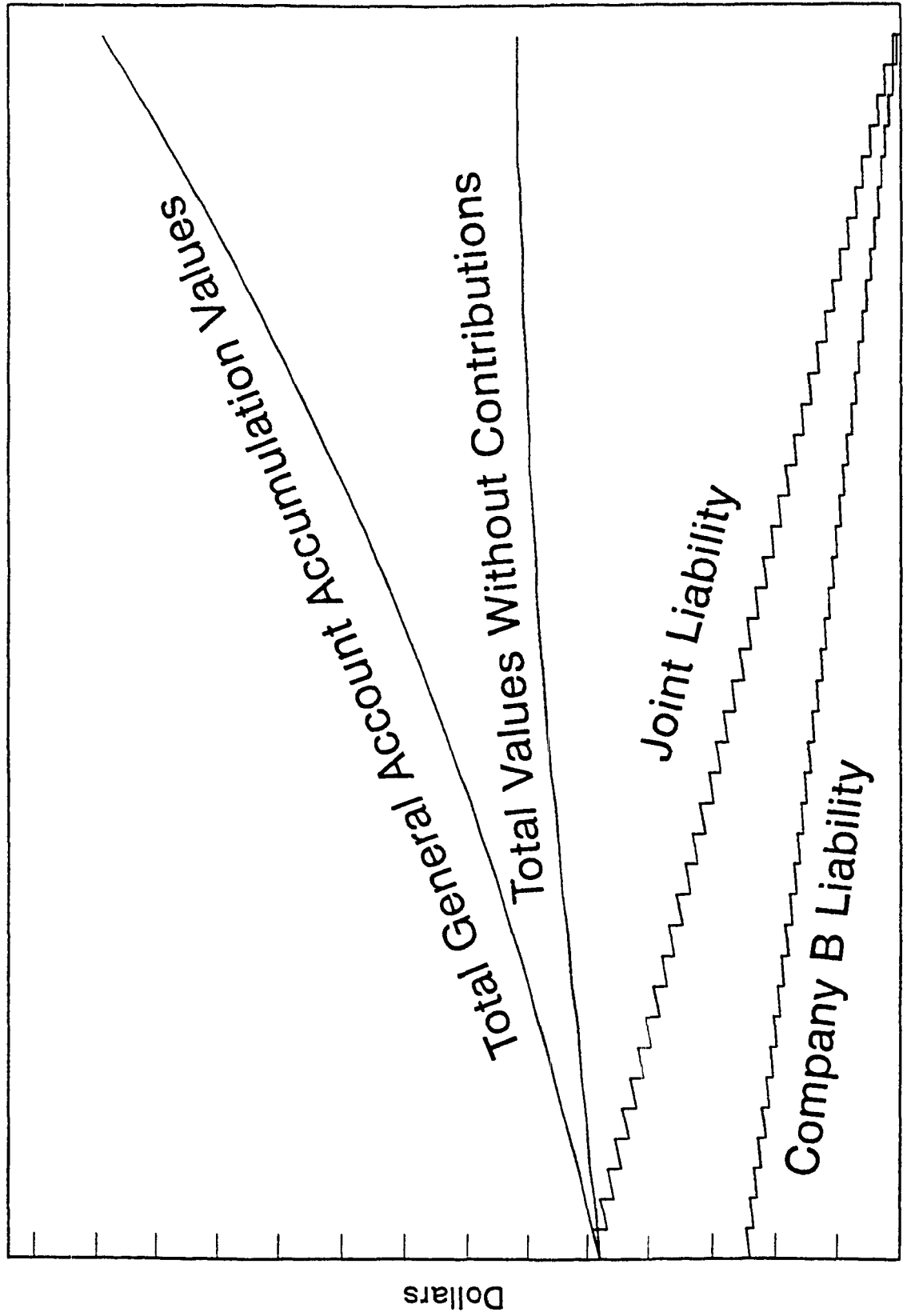


Illustration #1



QTR	NWNL SHARE OF PROJECTED GENERAL ACCOUNT ASSETS	NWNL BOOK VALUE	TOTAL PAYMENT MADE BY NWNL	PRINCIPAL PORTION OF NWNL PAYMENT	INTEREST AMORTIZATION PORTION OF NWNL PAYMENT	SCHEDULE INTEREST RATE
1	50.00%	70,221,219	2,923,000	1,716,788	1,206,212	7.05%
2	47.57%	68,504,431	2,705,000	1,528,278	1,176,722	7.05%
3	45.36%	66,976,154	2,978,000	1,827,529	1,150,471	7.05%
4	43.04%	65,148,625	3,812,000	2,692,921	1,119,079	7.05%
5	40.26%	62,455,703	2,855,000	1,811,872	1,043,128	6.85%
6	38.16%	60,643,832	2,060,000	1,047,133	1,012,867	6.85%
7	36.60%	59,596,698	2,850,000	1,854,622	995,378	6.85%
8	34.62%	57,742,076	2,227,000	1,262,598	964,402	6.85%
9	33.07%	56,479,478	2,876,000	1,959,576	916,424	6.65%
10	31.18%	54,519,902	2,085,000	1,200,371	884,629	6.65%
11	29.79%	53,319,531	2,584,000	1,718,848	865,152	6.65%
12	28.16%	51,600,683	2,599,000	1,761,738	837,262	6.65%
13	26.57%	49,838,945	1,907,000	1,122,085	784,915	6.45%
14	25.39%	48,716,860	2,830,000	2,062,757	767,243	6.45%
15	23.76%	46,654,104	3,086,000	2,351,243	734,757	6.45%
16	22.05%	44,302,861	2,433,000	1,735,273	697,727	6.45%
17	20.71%	42,567,588	1,949,000	1,309,098	639,902	6.15%
18	19.62%	41,258,490	2,739,000	2,118,777	620,223	6.15%
19	18.20%	39,139,713	2,143,000	1,554,628	588,372	6.15%
20	17.09%	37,585,086	1,971,000	1,405,998	565,002	6.15%
21	16.08%	36,179,088	1,267,000	749,108	517,892	5.85%
22	15.40%	35,429,981	2,478,000	1,970,831	507,169	5.85%
23	14.23%	33,459,150	2,113,000	1,634,043	478,957	5.85%
24	13.23%	31,825,107	1,677,000	1,221,433	455,567	5.85%
25	12.45%	30,603,674	3,145,000	2,725,263	419,737	5.60%
26	11.09%	27,878,411	1,723,000	1,340,641	382,359	5.60%
27	10.32%	26,537,770	2,576,000	2,212,028	363,972	5.60%
28	9.26%	24,325,742	2,290,000	1,956,366	333,634	5.60%
29	8.33%	22,369,376	3,234,000	2,940,631	293,369	5.35%
30	7.07%	19,428,744	2,457,000	2,202,197	254,803	5.35%
31	6.14%	17,226,547	2,435,000	2,209,078	225,922	5.35%
32	5.23%	15,017,469	1,280,000	1,083,050	196,950	5.35%
33	4.75%	13,934,419	1,586,000	1,411,636	174,364	5.10%
34	4.18%	12,522,783	2,631,000	2,474,300	156,700	5.10%
35	3.28%	10,048,483	1,798,000	1,672,262	125,738	5.10%
36	2.67%	8,376,221	1,952,000	1,847,187	104,813	5.10%
37	2.04%	6,529,034	2,265,000	2,187,236	77,764	4.85%
38	1.33%	4,341,798	2,416,000	2,364,287	51,713	4.85%
39	0.59%	1,977,511	1,355,000	1,331,447	23,553	4.85%
40	0.19%	646,064	650,000	642,305	7,695	4.85%

QTR	NWNL SHARE OF PROJECTED GENERAL ACCOUNT ASSETS	NWNL BOOK VALUE	TOTAL PAYMENT MADE BY NWNL	PRINCIPAL PORTION OF NWNL PAYMENT	INTEREST PORTION OF NWNL PAYMENT	AMORTIZATION SCHEDULE INTEREST RATE
1	50.00%	70,221,219	2,923,000	1,813,602	1,109,398	6.47%
2	47.55%	68,407,617	2,705,000	1,624,254	1,080,746	6.47%
3	45.31%	66,783,363	2,978,000	1,922,915	1,055,085	6.47%
4	42.97%	64,860,447	3,812,000	2,787,295	1,024,705	6.47%
5	40.16%	62,073,153	2,855,000	1,874,330	980,670	6.47%
6	38.04%	60,198,823	2,060,000	1,108,942	951,058	6.47%
7	36.48%	59,089,881	2,850,000	1,916,462	933,538	6.47%
8	34.48%	57,173,419	2,227,000	1,323,739	903,261	6.47%
9	32.91%	55,849,680	2,876,000	1,993,652	882,348	6.47%
10	31.01%	53,856,027	2,085,000	1,234,149	850,851	6.47%
11	29.62%	52,621,878	2,584,000	1,752,647	831,353	6.47%
12	27.98%	50,869,231	2,599,000	1,795,337	803,663	6.47%
13	26.39%	49,073,894	1,907,000	1,131,700	775,300	6.47%
14	25.20%	47,942,194	2,830,000	2,072,580	757,420	6.47%
15	23.57%	45,869,614	3,086,000	2,361,324	724,676	6.47%
16	21.86%	43,508,291	2,433,000	1,745,629	687,371	6.47%
17	20.52%	41,762,661	1,949,000	1,289,208	659,792	6.47%
18	19.45%	40,473,454	2,739,000	2,099,575	639,425	6.47%
19	18.03%	38,373,878	2,143,000	1,536,746	606,254	6.47%
20	16.93%	36,837,132	1,971,000	1,389,024	581,976	6.47%
21	15.93%	35,448,108	1,267,000	706,969	560,031	6.47%
22	15.28%	34,741,139	2,478,000	1,929,138	548,862	6.47%
23	14.11%	32,812,001	2,113,000	1,594,616	518,384	6.47%
24	13.13%	31,217,385	1,677,000	1,183,809	493,191	6.47%
25	12.36%	30,033,577	3,145,000	2,670,511	474,489	6.47%
26	11.02%	27,363,066	1,723,000	1,290,701	432,299	6.47%
27	10.27%	26,072,364	2,576,000	2,164,093	411,907	6.47%
28	9.22%	23,908,272	2,290,000	1,912,282	377,718	6.47%
29	8.30%	21,995,989	3,234,000	2,886,494	347,506	6.47%
30	7.05%	19,109,495	2,457,000	2,155,096	301,904	6.47%
31	6.12%	16,954,399	2,435,000	2,167,144	267,856	6.47%
32	5.23%	14,787,255	1,280,000	1,046,382	233,618	6.47%
33	4.75%	13,740,873	1,586,000	1,368,913	217,087	6.47%
34	4.19%	12,371,960	2,631,000	2,435,540	195,460	6.47%
35	3.29%	9,936,420	1,798,000	1,641,018	156,982	6.47%
36	2.69%	8,295,401	1,952,000	1,820,944	131,056	6.47%
37	2.05%	6,474,457	2,265,000	2,162,713	102,287	6.47%
38	1.34%	4,311,745	2,416,000	2,347,880	68,120	6.47%
39	0.60%	1,963,864	1,355,000	1,323,974	31,026	6.47%
40	0.19%	639,891	650,000	639,891	10,109	6.47%

QTR	NWNL SHARE OF PROJECTED GENERAL ACCOUNT ASSETS	NWNL BOOK VALUE	TOTAL PAYMENT MADE BY NWNL	PRINCIPAL PORTION OF NWNL PAYMENT	INTEREST PORTION OF NWNL PAYMENT	AMORTIZATION SCHEDULE INTEREST RATE
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2	47.57%	68,504,431	2,705,000	1,528,278	1,176,722	7.05%
3	45.36%	66,976,154	2,978,000	1,827,529	1,150,471	7.05%
4	43.04%	65,148,625	3,812,000	2,692,921	1,119,079	7.05%
5	40.26%	62,455,703	2,855,000	1,811,872	1,043,128	6.85%
6	38.16%	60,643,832	2,060,000	1,047,133	1,012,867	6.85%
7	36.60%	59,596,698	2,850,000	1,854,622	995,378	6.85%
8	34.62%	57,742,076	2,227,000	1,262,598	964,402	6.85%
9	33.07%	56,479,478	2,876,000	1,959,576	916,424	6.65%
10	31.18%	54,519,902	2,085,000	1,200,371	884,629	6.65%
11	29.79%	53,319,531	2,584,000	1,718,848	865,152	6.65%
12	28.16%	51,600,683	2,599,000	1,761,738	837,262	6.65%
13	26.57%	49,838,945	1,907,000	1,122,085	784,915	6.45%
14	25.39%	48,716,860	2,830,000	2,062,757	767,243	6.45%
15	23.76%	46,654,104	3,086,000	2,351,243	734,757	6.45%
16	22.05%	44,302,861	2,433,000	1,735,273	697,727	6.45%
17	20.71%	42,567,588	1,949,000	1,309,098	639,902	6.15%
18	19.62%	41,258,490	2,739,000	2,118,777	620,223	6.15%
19	18.20%	39,139,713	2,143,000	1,554,628	588,372	6.15%
20	17.09%	37,585,086	1,971,000	1,405,998	565,002	6.15%
21	16.08%	36,179,088	1,267,000	749,108	517,892	5.85%
22	15.40%	35,429,981	2,478,000	1,970,831	507,169	5.85%
23	14.23%	33,459,150	2,113,000	1,634,043	478,957	5.85%
24	13.23%	31,825,107	1,677,000	1,221,433	455,567	5.85%
25	12.45%	30,603,674	3,145,000	2,725,263	419,737	5.60%
26	11.09%	27,878,411	1,723,000	1,340,641	382,359	5.60%
27	10.32%	26,537,770	2,576,000	2,212,028	363,972	5.60%
28	9.26%	24,325,742	2,290,000	1,956,366	333,634	5.60%
29	8.33%	22,369,376	3,234,000	2,940,631	293,369	5.35%
30	7.07%	19,428,744	2,457,000	2,202,197	254,803	5.35%
31	6.14%	17,226,547	2,435,000	2,209,078	225,922	5.35%
32	5.23%	15,017,469	1,280,000	1,083,050	196,950	5.35%
33	4.75%	13,934,419	1,586,000	1,411,636	174,364	5.10%
34	4.18%	12,522,783	2,631,000	2,474,300	156,700	5.10%
35	3.28%	10,048,483	1,798,000	1,672,262	125,738	5.10%
36	2.67%	8,376,221	1,952,000	1,847,187	104,813	5.10%
37	2.04%	6,529,034	2,265,000	2,187,236	77,764	4.85%
38	1.33%	4,341,798	2,416,000	2,364,287	51,713	4.85%
39	0.59%	1,977,511	1,355,000	1,331,447	23,553	4.85%
40	0.19%	646,064	650,000	642,305	7,695	4.85%

QTR	NWNL SHARE OF PROJECTED GENERAL ACCOUNT ASSETS	NWNL BOOK VALUE	TOTAL PAYMENT MADE BY NWNL	PRINCIPAL PORTION OF NWNL PAYMENT	INTEREST PORTION OF NWNL PAYMENT	AMORTIZATION SCHEDULE INTEREST RATE
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2	47.55%	68,407,617	2,705,000	1,624,254	1,080,746	6.47%
3	45.31%	66,783,363	2,978,000	1,922,915	1,055,085	6.47%
4	42.97%	64,860,447	3,812,000	2,787,295	1,024,705	6.47%
5	40.16%	62,073,153	2,855,000	1,874,330	980,670	6.47%
6	38.04%	60,198,823	2,060,000	1,108,942	951,058	6.47%
7	36.48%	59,089,881	2,850,000	1,916,462	933,538	6.47%
8	34.48%	57,173,419	2,227,000	1,323,739	903,261	6.47%
9	32.91%	55,849,680	2,876,000	1,993,652	882,348	6.47%
10	31.01%	53,856,027	2,085,000	1,234,149	850,851	6.47%
11	29.62%	52,621,878	2,584,000	1,752,647	831,353	6.47%
12	27.98%	50,869,231	2,599,000	1,795,337	803,663	6.47%
13	26.39%	49,073,894	1,907,000	1,131,700	775,300	6.47%
14	25.20%	47,942,194	2,830,000	2,072,580	757,420	6.47%
15	23.57%	45,869,614	3,086,000	2,361,324	724,676	6.47%
16	21.86%	43,508,291	2,433,000	1,745,629	687,371	6.47%
17	20.52%	41,762,661	1,949,000	1,289,208	659,792	6.47%
18	19.45%	40,473,454	2,739,000	2,099,575	639,425	6.47%
19	18.03%	38,373,878	2,143,000	1,536,746	606,254	6.47%
20	16.93%	36,837,132	1,971,000	1,389,024	581,976	6.47%
21	15.93%	35,448,108	1,267,000	706,969	560,031	6.47%
22	15.28%	34,741,139	2,478,000	1,929,138	548,862	6.47%
23	14.11%	32,812,001	2,113,000	1,594,616	518,384	6.47%
24	13.13%	31,217,385	1,677,000	1,183,809	493,191	6.47%
25	12.36%	30,033,577	3,145,000	2,670,511	474,489	6.47%
26	11.02%	27,363,066	1,723,000	1,290,701	432,299	6.47%
27	10.27%	26,072,364	2,576,000	2,164,093	411,907	6.47%
28	9.22%	23,908,272	2,290,000	1,912,282	377,718	6.47%
29	8.30%	21,995,989	3,234,000	2,886,494	347,506	6.47%
30	7.05%	19,109,495	2,457,000	2,155,096	301,904	6.47%
31	6.12%	16,954,399	2,435,000	2,167,144	267,856	6.47%
32	5.23%	14,787,255	1,280,000	1,046,382	233,618	6.47%
33	4.75%	13,740,873	1,586,000	1,368,913	217,087	6.47%
34	4.19%	12,371,960	2,631,000	2,435,540	195,460	6.47%
35	3.29%	9,936,420	1,798,000	1,641,018	156,982	6.47%
36	2.69%	8,295,401	1,952,000	1,820,944	131,056	6.47%
37	2.05%	6,474,457	2,265,000	2,162,713	102,287	6.47%
38	1.34%	4,311,745	2,416,000	2,347,880	68,120	6.47%
39	0.60%	1,963,864	1,355,000	1,323,974	31,026	6.47%
40	0.19%	639,891	650,000	639,891	10,109	6.47%

Tab E

COMMITTEE REPORT

DATE: November 10, 1993

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

FROM: **Manager Search Committee**

During the last quarter, the Manager Search Committee conducted a search for domestic emerging equity managers. The Board member representatives on the committee were:

Name	Title	Representing
Peter Sausen, Chair	Assistant Commissioner of Finance	Governor Carlson
Christie Eller	Assistant Attorney General	Atty. General Humphrey
Jake Manahan	Deputy State Treasurer	State Treasurer McGrath
Lisa Rotenberg	Deputy State Auditor	State Auditor Dayton
Elaine Voss	Deputy Sec. of State	Sec. of State Growe

BACKGROUND

Historically, when the SBI retained active domestic equity managers, emphasis was given to firms with significant assets under management and long performance records. In reviewing numerous potential managers over the past ten years, staff has consistently observed that many active domestic equity managers achieve significant positive value added during their earlier years when they invest fewer assets under management. Staff feels that retaining newer, younger firms with limited assets under management will provide an opportunity to capture this potential for enhanced performance. In addition, the effort may identify managers that could eventually be added to the SBI's active manager program and manage considerably larger portfolios for the SBI.

PROGRAM STRUCTURE

With these goals in mind, the SBI approved the Emerging Manager Program and authorized the Search Committee to recommend candidates to the Board. The total assets allocated to the program will be approximately equal to the average size of one of the SBI's domestic active equity accounts (currently \$300 million). It was anticipated that 6-10 managers would be retained with accounts of \$30-50 million each.

SELECTION PROCESS

The following screens were applied to identify potential emerging active domestic equity firms:

- Total assets under management between \$50 and \$300 million.
- At least three years of performance data.
- Registered with the SEC as an Investment Advisor.

A total of 126 firms were asked to respond to a detailed questionnaire. The mailing list was compiled from various sources:

- Directories of money management firms.
- Suggestions from Board members, IAC members and consultants
- Firms that contacted SBI offices and requested to be included.

Fifty four (54) firms returned a completed questionnaire to form the initial pool of candidates that the Search Committee considered. From this group, the Committee selected sixteen (16) firms for interviews:

Bond Procope Capital Management
CIC Asset Management
Cohen Davis & Marks Incorporated
Compass Capital Management
Evergreen Capital Management
First Capital Advisors
Geometry Group
Granahan Investment Management
Holland Capital Management
Kennedy Capital Management
Kopp Investment Advisors
New Amsterdam Partners
Valenzuela Capital Management
Wilke/Thompson Capital Management, Inc.
Winslow Capital Management
Zevenbergen Capital, Inc.

Based on the interviews, questionnaire responses and supporting information gathered by staff and the SBI's consultant, Richards & Tierney, the Committee is recommending that ten (10) of the above firms be retained by the SBI for the Emerging Manager Program. A profile of each firm is attached.

RECOMMENDATION

The Committee recommends that the SBI authorize the executive director, with assistance from SBI legal counsel, to negotiate and execute contracts with the following domestic emerging stock managers:

CIC Asset Management	Los Angeles, CA
Cohen Davis & Marks Incorporated	New York, NY
Compass Capital Management	Minneapolis, MN
First Capital Advisors, Inc.	New York, NY
Kennedy Capital Management	St. Louis, MO
New Amsterdam Partners	New York, NY
Valenzuela Capital Management	New York, NY
Wilke/Thompson Capital Management, Inc.	Minneapolis, MN
Winslow Capital Management	Minneapolis, MN
Zevenbergen Capital, Inc.	Seattle, WA

The Committee recommends that each firm be retained with a three year contract, subject to the standard 30-day escape clause. Further, the Committee recommends that each firm receive an equal level of initial funding of \$30 million.

CIC ASSET MANAGEMENT

Investment Philosophy

CIC Asset Management (CIC) uses a value-based investment process. This investment process is designed for clients who desire equity market exposure with both incremental value added and downside protection due to reasonable dividend yields, moderate price to book values and low normalized price to earnings ratios. Finally, the process provides a synergy between quantitative valuation techniques and "Graham & Dodd" fundamental analyses.

Portfolio Management

CIC buys companies whose valuations are attractive relative to normalized future earnings, book value, or cash flow. The firm uses three proprietary valuation models (price/earnings, price/adjusted book, price/cashflow) with inputs generated by CIC analysts based on fundamental research. Candidates for inclusion into the models are generated by quantitative screens and ideas from individual portfolio managers/analysts. Inputs are updated on a regular basis to ensure that the data is current.

For any given buy candidate, the decision on which valuation model to use is determined by the nature of the firm's business and its earnings stream. For example, while the price to earnings model is appropriate for most stocks, companies with extreme cyclicality (such as airlines) and firms whose asset quality is critical to earnings (such as financial service companies) are more appropriately valued on a price to adjusted book basis. Similarly, energy stocks lend themselves to price to cash flow valuation.

Inputs for all three models are generated by fundamental analysis which includes a review of corporate annual reports, 10k reports, published information, a discussion with management of the company either in person or via telephone, and discussions with Duff & Phelps and Wall Street analysts. Importantly, they use a systematic internal approach to generate the inputs which ensures consistency and comparability across their universe of likely buy candidates.

Critical inputs to the models are estimated real sustainable growth rates, dividend payout policies, and a company's financial soundness relative to the market (the risk factor). For each company, depending on which of the three models is being used, the analyst estimates high and low normalized earnings/cash flow/and book value some years into the future. The analyst then assigns a relative PE/cash flow/book value multiple at which the analyst believes the stock should trade given those variables discussed above and the stock's historical trading range. They tend to review 15 years of history to determine the validity of their inputs. To ensure consistency, they agree on the range of inputs for each individual company. The analyst then must adhere to the group decision on the inputs.

Using these inputs, a future price range and mean price are calculated and a compound annual return from today's price is generated. Annual dividend yield is added to generate a total expected annual return. From the expected annual return the model subtracts a minimum expected return (the risk factor) and produces an annualized expected incremental return above the minimum required return. The models rank stocks from highest to lowest incremental return. They also determine, in advance of purchase or sale, a likely buy price and a sell price target.

Ownership

Elario R. Monteiro, CFA
Fernando Inzunza
Jorge Castro

Total equity assets managed: \$180 million

Total tax-exempt equity assets managed for this discipline: \$180 million

Total number of tax-exempt accounts for this discipline: 8

Three largest tax-exempt accounts:

California Public Employees	\$55 million
Progress Common Trust	\$40 million
L.A. Police and Fire	\$30 million

COHEN DAVIS & MARKS INCORPORATED

Investment Philosophy

Cohen Davis & Marks Inc. (CDM) seeks to outperform the market by focusing on two variables: 1) economic cycles; and 2) security valuation. Within economic cycles, they believe that stocks exhibit predictable patterns that reflect changing expectations on corporate profits and interest rates. Similarly, they believe that stock prices normally reflect earnings expectations. CDM exploits short run inefficiencies through an unbiased process that relates the price of a stock to the consensus earnings expectations.

Portfolio Management

The CDM universe consists of larger capitalization stocks. Their approach uses top-down, sector rotation combined with a strict valuation discipline. The investment process consists of the following five stages:

Stage 1: Economic forecast. They start by projecting the general patterns for the economy, focusing on broad moves in such variables as corporate profits and interest rates, and especially on how forecasts differ from consensus expectations. Projections are based on an analysis of supply and demand factors in the real economy and less on the monetary and financial arenas. They focus on the cyclical areas of the economy since these tend to be precursors to major shifts.

Stage 2: Identification of the "types" of stocks that fit the forecast. To help identify stocks that match their economic forecast, they have proprietary computer-based tools that measure a stock's sensitivity to a number of economic and stock market forces. For example, each stock's interest rate sensitivity is measured and ranked. The economic and market forces that they measure are those that, according to their research, have had a consistently similar impact on stock prices.

Stage 3: Security valuation. Once they have screened the universe of over 1500 stocks to select those that qualify for purchase based on their economic forecast, they identify the stocks that represent the best value for the group. The most important valuation tool that they use is a proprietary dividend discount model. While all dividend discount models are similar in structure, they believe that theirs is free from some common problems. It is not biased for or against growth stocks or low or no dividend paying companies and it compensates for the tendency of most models to favor low quality companies.

All of the stocks in the universe are ranked by their attractiveness according to the dividend discount model. They generally will purchase only those stocks in the top 20% of the universe.

Stage 4: Selection of stocks that are timely. While dividend discount models are proven tools to identify undervalued securities, stocks do not always move immediately from their current prices to intrinsic values. Therefore, CDM also employs measures of timeliness. Earnings momentum and measures of relative strength and acceleration of prices are examples of such measures.

Stage 5: Fundamental due diligence. CDM recognizes that computer tools have limitations. They see that inputs to the models are reasonable, that there are not unusual conditions with respect to projections and that companies identified are not likely to radically shift in character or structure. Thus the final step in the process is a fundamental due diligence which involves analyzing Wall Street research, company financials, and various other industry and company publications. It does not however, entail company visits or in-depth, in-house research since their process does not depend on outguessing the consensus on a company's future prospects. Rather, the process depends on being able to capitalize on instances where consensus expectations for companies are not reflected in their share prices, as well as outguessing the consensus on the broad course of the economy.

CDM prefers fully invested equity portfolios (less than 5% cash) A stock is sold if: 1) a change in their economic forecast calls for the removal of that type of stock; 2) it declines in valuation level because of price appreciation or earnings deterioration or a combination of the two; 3) it loses earnings momentum; 4) price patterns signal change, or 5) a negative event of substantial importance renders earnings forecasts unreliable

Ownership

George M. Cohen
Thomas Davis Klingenstein
Richard C. Marks

Total equity assets managed:	\$101.5 million
Total tax-exempt equity assets managed for this discipline:	\$76.5 million
Total number of tax-exempt accounts for this discipline.	22

Three largest tax-exempt accounts:

Nomura Investment	\$16.9 million
TBG Inc.	10.0 million
Kimball Industries	8.0 million

COMPASS CAPITAL MANAGEMENT

Investment Philosophy

Compass Capital Management (CCM) combines aspects of growth and value investing to achieve the proper blend of return (growth) and risk (value). They use a computer based data network to screen for large, well established consistent growth and cyclical growth companies. Due to their "growing company" orientation, their portfolios generally hold no utility, bank, deep cyclical (auto companies for example), or oil and gas stocks.

Portfolio Management

CCM's style of stock selection is a "bottom-up" approach. They search for high quality, growth companies and purchase them when they are undervalued on a relative and historical basis. Value criteria include current price to earnings (P/E) to historical 5 year P/E; relative P/E to historical 5 year relative P/E; price to book (P/B) to historical 5 year P/B.

In general, their portfolio turnover has been quite low, averaging about 25% of the portfolio or less per year. Compass Capital Management, Inc. equally weights 25 stocks in each portfolio (4% each). The maximum weighting per security is 5%, while an equally important minimum of 3% is maintained.

All portfolios are run the same (unless client guidelines otherwise specify). Buy, sell, trim and add decisions are made within the portfolio manager group and applied across all portfolios. They sell a stock for four major reasons: 1) if there is substantial overvaluation; 2) if a better candidate (on a growth and value basis) has been found for purchase; 3) if there has been a major change in the company (change in senior management, acquisition outside the main industry); or 4) when, after a suitably long period, the company no longer appears able to grow.

Ownership

Charles Kelly, David Carlson, Lyn Foley, Dale Waltz own 33% of Compass.
The Conley Brooks Family owns 67%.

Total equity assets managed:	\$98 million
Total tax-exempt equity assets managed for this discipline:	\$57 million
Total number of tax-exempt accounts for this discipline:	35

Three largest tax-exempt accounts:

Allbrook Equity Partners	\$6 million
A B Walker Foundation	\$3 million
Ucross Foundation	\$2 million

FIRST CAPITAL ADVISORS, INC.

Investment Philosophy

First Capital Advisers believes that cash flow, "true" earnings, tangible asset values, and inherent growth are measures of potential relative performance that are often superior to measures based simply on "reported earnings". First Capital Advisers bases its valuations primarily on these "value-related" factors.

Portfolio Management

First Capital employs bottom-up, value-related computer screens with inherent growth overlays to identify a pool of undervalued securities. These stocks are analyzed fundamentally by First Capital's equity research staff to identify strong potential market performers.

In-house computer software has been developed to screen thousands of companies selling at attractive P/E and cash flow multiples and 15 other critical variables. Earnings momentum and dividend growth rates of 10% or better over the previous 5-year period are also important in their selection process. The portfolio is diversified with exposure to most industries, but is not indexed. Industry analysis determines portfolio weightings that generally overweight attractive sectors and underweight others.

Once they have selected a stock for inclusion in the portfolio, they establish a target price for the period 12 to 18 months ahead. The target price is computed on the basis of earnings per share estimates and conservative relative P/E ratios. Cash during the last five years has averaged between 0.1 - 3.0%.

Ownership

First Capital Advisers is 100% employee owned.

Total equity assets managed:	\$225 million
Total tax-exempt equity assets managed for this discipline:	\$197 million
Total number of tax-exempt accounts for this discipline:	24

Three largest tax-exempt accounts:

CALPERS	\$50 million
LASERS	\$24 million
TEGAN	\$14 million

KENNEDY CAPITAL MANAGEMENT

Investment Philosophy

KCM is dedicated to exploiting pricing inefficiencies in under-followed and misunderstood small capitalization stocks. They believe that stocks are efficiently priced where there is a proper distribution of information. However, many emerging growth companies suffer from lack of analytical coverage and information flow, and therefore, are "invisible" to institutional investors. It is this lack of information which creates pricing inefficiencies. They anticipate through closing this information gap that they can transform these holdings into attractive institutional candidates. This investment philosophy and the following description of their portfolio management process applied to both their small capitalization value and emerging growth products.

Portfolio Management

Seeking to exploit the information gaps on these "invisible" companies, KCM contacts company management to verify its observations and information which can lead to an improvement of the value of its stock. Often, a CEO may not even be aware such information gaps exist, but most are eager to close them. By linking company officials with an established network of sell-side analysts and database providers, information gaps can be eliminated and efficient market theory can take effect.

Characteristics of "invisible" companies they look for in addition to sales and earnings acceleration, generally include a price inconsistent with its earnings growth rate and institutional ownership less than 10% of tradable shares. Approximately 150 to 200 stocks fall out at this level as "invisible companies" onto the "potential buy list." Direct contact is made with potential purchase companies when an event occurs which pushes the stock to the top of this "potential buy list". Generally at this level KCM will take a position in about 2/3 of this list.

Between 10% and 20% of stocks passing through earlier levels in KCM's process may be identified as long term holdings or "keepers". Characteristics of "keepers" include double digit sustainable growth rates, and rising and accelerating free cash flow return on investment rates. Also, company management must demonstrate a conscious effort to enhance shareholder value.

Stocks are sold when they reach the normal multiples for their industries. KCM also sells stocks when earnings and/or dividends decelerate year over year, or upon significant negative news.

Allocation to cash during the last five years has averaged 5% with a high of 20% and a low of 1%.

Ownership

KCM is 100% owned by its active employees.

Total equity assets managed: \$266 million

Total tax-exempt equity assets managed for both disciplines: \$227 million

Total number of tax-exempt accounts for both disciplines. 39

Three largest tax-exempt accounts:

Virginia Supplemental	\$32 million
NCR Corporation	\$30 million
Outboard Marine Corporation	\$30 million

NEW AMSTERDAM PARTNERS

Investment Philosophy

New Amsterdam Partners believe that investment results are evaluated by actual return and investment opportunities should be evaluated by expected return. There are standard techniques for measuring expected return for every type of investment vehicle. All valid techniques depend on forecasts of the amounts and timing of future cash flows. They believe that the disciplined application of their valuation techniques in conjunction with sound financial analysis of companies, is the key to understanding and maximizing investment returns.

Portfolio Management

They describe their style as growth at a reasonable price. The key element of their process is the expected return model that seeks to identify companies with higher than average growth rates that are selling at less than average price to book. They compute an expected return for each stock using the "T-Mode." The T-Model is a formula that is mathematically identical to the definition of return, rewritten in terms of common accounting variables. The resulting expected return is the key determinant of a company's attractiveness within their portfolios. The characteristics of their portfolio are higher than average growth and return on equity, high expected return, improving analyst opinion, and low price earnings and price to book.

New Amsterdam Partner's quantitative and disciplined approach begins by screening a universe of 6500 companies. Through a series of screens and valuation tools the universe is reduced to a 40 stock portfolio diversified across 12 economic sectors. The terms of the screens dictate that these securities are all highly liquid.

Their maximum weighting in any particular sector is twice the S&P's weighting, and in large sectors their minimum weighting is 1/2 of the index's weighting. For smaller sectors the weighting can go to zero. Companies come into the portfolio equally weighted at about 2.0 - 2.5%. If they reach 5%, the position will be trimmed back. They are always fully invested (e.g., less than 5% cash).

Ownership

The firm is 66 % owned by Michelle Clayman, the firm's General Partner, qualifying the firm as a woman owned business enterprise. Keith Graham, the firm's Director of Operations is also a partner with a 1% ownership. Mr. Graham is of Afro-American descent. The remaining shares are owned by outside investors who put up the money to start the organization. They have no active day to day involvement in the organization.

Total equity assets managed: \$124 million

Total tax-exempt equity assets managed for this discipline: \$118 million

Total number of tax-exempt accounts for this discipline: 8

Three largest tax-exempt accounts:

Acct I	Foundation	\$25 million
Acct II	Foundation	\$23 million
Acct III	Foundation	\$15 million

VALENZUELA CAPITAL MANAGEMENT

Investment Philosophy

Valenzuela Capital Management's (VCM) investment philosophy is one of risk averse growth. VCM values companies which possess strong rates of change in earnings, cash flow and returns. Indications of this change are sought in revenues, operating margins and financial structure. They believe that below market valuations provide downside protection during weak market periods. In strong markets the portfolios will be driven by both earnings growth and multiple expansion.

Portfolio Management

VCM's portfolio process is comprised of the six following steps:

Source of Idea. They use a variety of sources to search for information which suggests favorable changes in companies' earnings, cash flow and returns. They construct proprietary computer screens to find companies that meet or exceed their investment criteria. In addition they read trade journals, SEC disclosure documents and lastly, Wall Street and regional research.

Quantitative Analysis. Their main quantitative tool is historic quarterly ratio analysis going back three to five years. They look at approximately 25 different ratios calculated from the balance sheet and income statement. Members of the firm do the initial quantitative work on a spreadsheet by hand. They then enter the spreadsheet into their computerized database. The database allows them to update continuously and track about 60 companies with little effort.

Qualitative Analysis. Their qualitative analysis involves interviewing company management and competitors. They ask detailed questions raised by their quantitative process. Such due diligence allows them to assess risk and identify conditions which can lead to earnings growth.

Research Summary. They summarize the results of their quantitative and qualitative analysis in a one-page "Research Summary." This summary spells out their expectations for change in a company's fundamentals. They note what they have to monitor and how often they need to do so. The "Research Summary" also spells out what could go wrong with their investment thesis. They then assign a buy and a sell price.

Purchase List. The buy and sell prices that they assign to individual stocks are compiled in their "Purchase List." This list of approximately 60 names has buy and sell prices for both portfolio holdings and stocks they closely monitor.

They buy when there is evidence to suggest that a stock can appreciate 50% over a three year period. They buy when a stock price declines to their buy price. When they own a stock and its price declines by more than 10%, they generally buy more after checking to make sure they have not overlooked any negative development.

They sell if a stock reaches a predetermined price objective, or if there is a negative change in the company's fundamentals. They will begin to sell a stock that has appreciated substantially to replace it with a stock that they believe can appreciate 50% over 3 years. They will begin to sell if a stock holding appreciates and becomes more than 7% of the portfolio.

Ownership

VCM's two principals, Thomas Valenzuela (65%) and Mariko Gordon (15%) own 80 % of the firm. Two outside individuals own the remaining 20%.

Total equity assets managed: \$303 million

Total tax-exempt equity assets managed for this discipline. \$303 million

Total number of tax-exempt accounts for this discipline: 14

Three largest tax-exempt accounts:

CalPERS	\$93 million
Pacific G&E	\$31 million
Progress Core Eq.	\$33 million

WILKE/THOMPSON CAPITAL MANAGEMENT INC.

Investment Philosophy

The investment philosophy of Wilke/Thompson (WIT) is to invest in high quality growth companies that demonstrate the ability to sustain strong secular earnings growth, notwithstanding overall economic conditions.

Portfolio Management

WIT's investment approach involves a bottom-up fundamental process. The stock selection process favors companies with strong earnings gains, high unit growth, a proprietary market niche, minimum debt, conservative accounting and strong management practices. They formulate investment ideas by networking with the corporate managers of their current and prospective holdings, as well as regional brokers, venture capitalists, and other buy-side portfolio managers.

The Chief Investment Officer oversees the initial screen of potential investment candidates and assigns specific companies to members of the portfolio management team for further follow-up and in-depth analysis. Team discussion must take place before any transaction, although consensus is not required for a portfolio manager to take action (up to a 1.5% position). Team consensus is required to increase positions beyond that level.

Portfolio management disciplines include: 1) sell any position which has lost 0.5% of the total portfolio (from cost); 2) maintain an overall average portfolio P/E ratio between 15x and 19x next year's earnings; 3) sell when fundamentals do not evolve to expectations or if fundamentals change; 4) do not initiate positions in a company whose market cap exceeds 4x its annual revenue; 5) initial positions at 1.5% of the portfolio and build the position as fundamentals are confirmed.

Portfolios typically hold 40-45 securities with a maximum position of 5%. Initial positions are usually 1.5% of the total portfolio and may be increased as the fundamentals are confirmed. In addition, no more than 20% of the portfolio will be invested in companies which are benefiting from a common catalyst (e.g. regulatory or demographic changes). Cash is a residual of their investment process and generally averages 8-10% of the portfolios.

Ownership

100% employee owned by the following individuals:

Mark A. Thompson, Co-Founder

Paul L. Hayne, President/CEO

John W. Wilke, Co-Founder

Ellen M. Scholz, Co-Founder

Vicky L. Assell, Co-Founder

Total equity assets managed: \$305 million

Total tax-exempt equity assets managed for both disciplines: \$246 million

Total number of tax-exempt accounts for both disciplines: 39

Three largest tax-exempt accounts:

Okla. Firefighters	\$62 million
Pa. PERA	\$26 million
Washington State Board	\$26 million

WINSLOW CAPITAL MANAGEMENT

Investment Philosophy

Winslow Capital Management (WCM) believes that companies with above average earnings growth provide the best opportunities for superior portfolio returns over time. WCM emphasizes a growth strategy in the mid to large cap companies to achieve a weighted average annual earnings growth rate of 15-20% over a 2-3 year time horizon.

Portfolio Management

Macro trends on inflation interest rates and corporate earnings provide a backdrop for WCM's bottom-up process. The research process looks for solid fundamental growth characteristics resulting from proprietary products, strong unit growth, brand franchises, rising margins, good balance sheets, and hands on management which owns stock. This strategy has tended to result in above-average industry concentrations in technology, telecommunications, health care, and retail.

The research process concentrates on macro economic variables of inflation, interest rates and earnings as the principal drivers of stock price movement. These variables form the basis for developing an estimated P/E for the market. With an estimate for S&P 500 earnings, they project a one year return for the market which becomes a benchmark for analyzing individual stocks. These forecasts provide the data to screen a universe of 200 companies with market capitalization's over \$700 million down to 80 buy candidates.

Portfolios contain 35-40 stocks with the most favorable investment potential and greatest diversifying characteristics. To control risk, no stock position exceeds 5% at market. In addition no sector will have more than double the S&P 500 weighting. WCM maintains low cash positions. Because the firm will sell a portion of stock positions on emotional spikes, the firm has had infrequent (temporary) cash positions of up to 15% and could envision a move to 30% under severely inflated market conditions.

Ownership

WCM is 100% owned by its three principals: Clark Winslow, Gordon Ritz and Richard Pyle.

Total equity assets managed:	\$195 million
Total tax-exempt equity assets managed for this discipline:	\$167 million
Total number of tax-exempt accounts for this discipline:	6

Three largest tax-exempt accounts:

MN Mutual Life	\$67 million
Omaha Teachers	\$35 million
Conagra	\$20 million

ZEVENBERGEN CAPITAL INC

Investment Philosophy

Zevenbergen is an equity growth manager. The investment philosophy is based on the belief that earnings drive stock prices while quality provides capital protection.

Portfolio Management

Zevenbergen uses a bottom-up fundamental approach to securities analysis. The selection process incorporates ideas from industry conferences, Wall Street research and Value Line screens. The guidelines for investment are debt less than 50% of capital, return on equity above 15% and strong relative earnings growth. These decision variables, when incorporated in their Comparative Value Model, produce price targets for stocks. Research efforts focus on finding companies with superior products or services showing consistent profitability. They examine the earnings growth (margin expansion, market share gains, volume growth, new products) and financial ability to support internal and external growth. Qualitative characteristics like management track record, commitment and competitive obstacles are also an important part of the research effort. Attractive buy candidates are reviewed for sufficient liquidity and to potential diversification. The resulting portfolio contains 40 to 60 high quality growth companies. Zevenbergen does not market time with cash being a residual depending upon the number of attractively priced issues. Typically cash is 5% or less. Stocks are sold if they reach their target price, there are better alternatives or if the stocks fundamentals change.

Ownership

Zevenbergen Capital is 100% employee owned with Nancy Zevenbergen owning over 97%.

Total equity assets managed:	\$214 million
Total tax-exempt equity assets managed for this discipline:	\$187 million
Total number of tax-exempt accounts for this discipline:	23

Three largest tax-exempt accounts:

N.Y. City Employees	\$47 million
Minority Equity Trust	\$32 million
Illinois State Retirement	\$19 million

Tab F

COMMITTEE REPORT

DATE: December 7, 1993

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

FROM: **Stock and Bond Manager Committee**

The Stock and Bond Manager Committee met on November 17, 1993 to review the following items:

- Review of manager performance for the period ending September 30, 1993
- Update on implementation of global bond authorization
- Results of 1993-1996 GIC bid
- Discussion of report from the Emerging Manager Search Committee
- Approval of revised Manager Continuation Policy paper

1. Review of Manager Performance

- **Domestic Stock Managers**

For the quarter ended September 30, 1993, the domestic stock manager group outperformed its aggregate benchmark and the Wilshire 5000 (Managers 4.2%; Aggregate Benchmark 3.6%; Wilshire 5000 3.7%). The current manager group also outperformed for the latest year (Managers 18.4%; Aggregate Benchmark 17.0%; Wilshire 5000 Adjusted 16.6%) and latest five years (Managers 14.9%; Aggregate Benchmark 14.1%; Wilshire 5000 Adjusted 14.3%).

The performance evaluation reports for the domestic stock managers start on **page 55**.

- **Domestic Bond Managers**

For the quarter ended September 30, 1993, the domestic bond manager group outperformed the Salomon Broad Investment Grade (BIG) index (Managers 3.2%; Salomon BIG 2.6%). The current manager group also outperformed for the latest

year (Managers 12.1%; Salomon BIG 10.2%) and latest five years (Managers 12.1%, Salomon BIG 11.5%)

The performance evaluation reports for the domestic bond managers start on page 75.

- **International Stock Managers**

For the quarter ended September 30, 1993, the international stock manager group outperformed the Morgan Stanley Capital International index of Europe, Australia and the Far East (EAFE) by 0.2% (Managers 6.8%; EAFE 6.6%). For the latest year, the managers under performed the index (Managers 24.3%, EAFE 26.4%).

2. Update on Implementation of Global Bond Authorization

At its September 1993, the Board approved a pilot program for global bond management. Subject to further staff review, the Board authorized four of the current active bond managers (BEA, Miller, Standish and Western) to invest up to 10% of their portfolios in non US bonds. This expanded authority is considered an interim approach to global bond investing and the SBI staff have been directed to conduct additional research and report back to the SBI/IAC within two years

During the last quarter, staff met with each of the above managers to discuss their global bond investing capabilities in greater detail. Staff expect to implement the expanded authority effective January 1, 1994.

3. Results of 1993-1996 GIC Bid

In October 1993, the SBI bid its eighth 3-year guaranteed investment contract (GIC) for the Fixed Interest Account in the Supplemental Investment Fund

Contract Period: November 1, 1993-October 31, 1996 (3 years)
Contribution Period: November 1, 1993-October 31, 1994 (1 year)

Estimated Lump Sum \$18.86 million
Estimated Flow 2.79 million
Estimated Total \$21.65 million

**Bid Awarded to: Principal Mutual Life Insurance, Des Moines IA
Hartford Life Insurance, Hartford CT**

Net Effective Annual Rate to Participants: 4.625%

On October 26, the bid was awarded to Principal Mutual and Provident National. However, on October 29, Provident National was downgraded by S&P and Moody's rating services. On November 1, the SBI withdrew its award to Provident National upon the recommendation of its GIC consultant. The consultant solicited additional bids from three other carriers and the contract was awarded to Hartford Life.

With the change to Hartford, the SBI received a higher interest rate for participants (by 4 basis points) and accepted a contract with a higher rated company (Hartford is rated AAA by S&P while Provident National is now rated AA- by S&P).

More information on the bid process begins on **page 5**.

4. Discussion of Report from the Manager Search Committee Concerning the Emerging Manager Search

Staff updated the Stock and Bond Manager Committee on the recommendation from the Manager Search Committee concerning the retention of several domestic stock managers for the Emerging Manager Program (see full report under **Tab E**).

The Emerging Manager Program was proposed in December 1992. The following structure was approved by the Stock and Bond Manager Committee and forwarded to the full IAC:

- Total assets allocated to the program will be equal to the size of an average SBI domestic equity manager account (\$300 million). Each emerging manager would receive \$30-50 million which would require hiring 6-10 managers.
- Initially, each manager will be evaluated against the most appropriate published index. Each firm retained will be required to contract a customized benchmark within two years.
- Each manager will receive a three year contract. At the end of the three years, an emerging manager will either receive assets equal to a larger equity manager, be retained as an emerging manager, or be dismissed.

The minutes of the December 8, 1992 IAC meeting state that two IAC members voiced concerns that this type of initiative would be costly both in terms of staff time and money based on their own experience with similar programs. After discussion, the full IAC recommended that the Board approve the program as presented. The minutes of the December 9, 1992 SBI meeting note both the affirmative recommendation of the full IAC as well as the objections of the two individual dissenting members. After discussion, the Board adopted the program as described above.

The Stock and Bond Manager Committee took no action on the report from the Manager Search Committee. The Committee suggests that the full IAC discuss what recommendation it wishes to provide to the Board on this matter

5. Manager Continuation Policy Paper

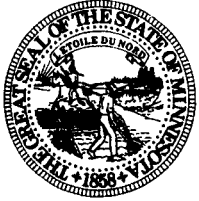
The Committee reviewed a new draft of the Manager Continuation Policy which incorporates the changes to the quantitative decision guidelines that were approved by the SBI and IAC at their September 1993 meetings. The Committee endorsed the revisions as drafted and recommends that the Board adopt the paper as its written policy statement on this issue. A complete copy of the revised paper begins on **page 13**. For your convenience, the new/revised sections of the text have been noted by underlining or shading.

The revisions to the policy include several changes in the formats used to report on manager performance. The Committee noted that staff has already incorporated the relevant changes in the evaluation reports prepared for this quarter by using five year rolling value of active management (VAM) graphs. In addition, the new Manager Commentaries from each active manager are included under **Tab H**. While modifications may be suggested in the future, the Committee feels the revised VAM's and new Manager Commentaries improve the quality of the information that is presented to the SBI/IAC.

RECOMMENDATION:

The Committee recommends that the SBI adopt the attached Manager Continuation Policy as its written policy statement on qualitative and quantitative manager evaluation guidelines for active stock and bond managers.

**MINNESOTA
STATE
BOARD OF
INVESTMENT**



Board Members:

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Arne H. Carlson

State Auditor
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State Treasurer
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Secretary of State
Joan Anderson Growe

Attorney General
Hubert H. Humphrey III

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*Suite 105, MEA Bldg.
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FAX (612)296-9572*

*An Equal Opportunity
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DATE: November 17, 1993
TO: Members, Stock and Bond Manager Committee
FROM: Jim Heidelberg
SUBJECT: Results of 1993-1996 GIC Bidding

Summary of Results

On October 26, 1993, the SBI bid its eighth 3-year guaranteed investment contract (GIC) for the Fixed Interest Account in the Supplemental Investment Fund. The bid was awarded to two insurance companies which will split equally the lump sum transfer and all contributions.

Contract Period: November 1, 1993-October 31, 1996 (3 years)
Contribution Period: November 1, 1993-October 31, 1994 (1 year)

Estimated Lump Sum	\$18.86 Million
Estimated Flow	\$ 2.79 Million
Estimated Total	\$21.65 Million

Bid Award to: Principal Mutual Life Insurance, Des Moines
Hartford Life Insurance, Hartford, CT

**Net Effective
Annual Rate** 4.625%, 35 basis points (estimated) over
to Participants: 3 Year Treasuries

On October 26 the bid was awarded to Principal Mutual and Provident National. However, on Friday, October 29, Provident National announced a \$275 million write-down on one of its insurance lines and was immediately downgraded by S&P and Moody's. On Monday, November 1 upon recommendation of the SBI's GIC consultant, the SBI withdrew from the contract with Provident National. The consultant solicited bids from 3 other carriers that had submitted bids on the original bid day. The SBI then awarded a contract to Hartford Life Insurance Company.

With the change to Hartford, the SBI received a higher interest rate for participants (by 4 basis points) and accepted a contract with a higher rated company. (Provident National is now rated AA3 by Moody's and AA- by Standard and Poor's while Hartford has a rating of AAA from S&P)

Hartford Life Insurance Company, based in Hartford, Connecticut is one of the few life insurance companies with a AAA rating. It is rated AAA by S&P and AA2 by Moody's. Hartford is one of the 10 largest life insurance companies with over \$34 billion in assets.

Principal Mutual Life, based in Des Moines, is the 12th largest life insurance company in the U.S. with over \$28 billion in assets. Principal Mutual is the parent and the largest company of the Principal Financial Group, a diversified group of insurance and financial services companies. Principal Mutual is rated Aa1 by Moody's and AA+ by Standard and Poor's.

Background and Comparative Data

The 1993-1996 GIC was somewhat larger than last year's GIC, most likely due to the size of the maturing GIC. However, the new GIC was smaller than the maturing GIC. Due to the lower interest rate environment, perhaps, a smaller portion of the maturing GIC was rolled over.

GIC	Total \$'s (millions)	GIC Rate	Comparative 3 Year Treasuries Rates
1993-1996	\$21.6	4.625%*	4.27%*
1992-1995	16.6	5.28	4.75
1991-1994	33.3	6.6343	6.07
1990-1993	23.1	8.765	7.93
1989-1992	14.5	8.400	7.81
1988-1991	26.2	9.010	8.37
1987-1990	16.7	8.450	7.94
1986-1989	4.5	7.720	6.53

* One contract was awarded 10/26 at 4.60%, 42 b.p. over Treasuries of 4.18%
One contract was awarded 11/1 at 4.65%, 28 b.p. over Treasuries of 4.37%

The 1993-1996 GIC was structured like the previous GIC's:

- The GIC carries a fixed interest rate for a specified three years. No blending of rates with past or future GIC's will occur.

- Lump sums were pledged to the GIC prior to the start of the contract from the Deferred Compensation Plan, the Unclassified Employees Plan, and the PERA Defined Contribution Plan. (The Community College System chose not to offer the GIC option to its employees.) On-going contributions may be made by payroll deduction during the first year of the three year contract period from these plans.
- Lump sum pledges to the GIC prior to the start of the contract were allowed from police and firefighter plans that are not part of the PERA Police and Fire Plan. However, no local plans chose to participate.

As an adjunct to their master custodial relationship with the SBI, State Street Bank assisted the SBI in the GIC bid process.

- Exhibit A - GIC Bidding Day Review
- Exhibit B - Indicative and Final Bids
- Exhibit C - Responses to Bidding Specifications
- Exhibit D - Participants in the 1993-1996 GIC
- Exhibit E - GIC Contract Holders

EXHIBIT A

GIC BIDDING REVIEW

October 26

As outlined in the GIC bidding specifications, indicative (not binding) interest rate bids were required on October 22, 1993. Binding bids were required in the morning of October 26, 1993. Final bids were accepted by 1:30 P.M. on October 26, 1993

Events of the bidding day were as follows:

9:00 A.M. - 11:30 A.M.

By 10:30 A.M. eight companies had submitted bids. Provident National and Principal Mutual each submitted 4.56 percent bids. Hartford submitted a 4.55 percent bid. At 11 A.M. Provident raised its bid to 4.57 percent. At 11:30 A.M. Principal Mutual raised its bid to 4.60 percent.

11:30 A.M. - 1:30 P.M.

Between 11:30 A.M. and noon the issue of contract language concerning possible plan changes by the Legislature was discussed with the three companies. By noon Hartford said it could not agree to a requested provision and withdrew its bid. At noon the 4.57 percent bid from Provident was accepted. Between noon and 1:30 P.M. legal counsel negotiated language with Principal Mutual concerning the provision. At 1:30 P.M. Principal Mutual agreed to negotiated language and its bid of 4.60 percent was accepted.

November 1

On November 1, 1993 the SBI withdrew from the Provident National contract at the recommendation of its consultant. Three days after the bid day, on October 29, Provident announced a \$275 million write-down and was immediately downgraded by Moody's, S&P, and the consultant. The consultant contacted three companies next highest on the bid list from October 26 and solicited bids. Hartford bid 4.65 percent, CNA bid 4.60 percent, and Hancock bid 4.56 percent. Upon discussion with legal counsel Hartford agreed to language concerning plan changes made by Minnesota law. At 1:40 P.M. the Hartford bid of 4.65 percent was accepted.

Because November 1 was the date for wiring funds to the new contract holders, the time from 1:40 P.M. to 4:30 P.M. was spent arranging with Hartford and State Street, the SBI's custodian, the wiring of Hartford's share of the lump sum transfer. The funds were successfully wired late in the day.

EXHIBIT B

**OCTOBER 26
INDICATIVE AND FINAL BIDS
NET EFFECTIVE ANNUAL INTEREST RATE**

	Indicative Bids 10/22/93	Final Bids 10/26/93
CNA	4.40%	4.45%
Hancock	4.39	4.37
Hartford	4.47	4.55
Metropolitan	4.30	4.35
Principal Mutual	4.31	4.60
Provident National	4.49	4.57
State Mutual	4.39	4.44
Pacific Mutual	4.54*	4.59*
Bid Range		
High:	4.54%	4.60%
Low:	4.30%	4.35%
U.S. Treasury Rate 3 Year	4.16%	4.18%

* Rate not considered because company was downgraded between the time of the sending of bid specs and bid day.

**NOVEMBER 1
FINAL BIDS
NET EFFECTIVE ANNUAL INTEREST RATE**

	BID
CNA	4.66%
Hancock	4.56
Hartford	4.65
U.S. Treasury Rate 3 Year	4.37

EXHIBIT C

RESPONSES TO BIDDING SPECIFICATIONS

Bidding specifications were sent to 23 financial institutions (17 insurance companies, 5 banks and 1 brokerage firm).

Eight companies provided indicative or final bids. (See Exhibit B) Others declined to bid or did not respond.

Bid specs were sent to some financial institutions specifically to elicit bids on synthetic GIC's. However, no companies offered products with fixed maturities and fixed rates, so none responded.

Many companies did not respond because of the class year structure of the SBI's GIC. Withdrawals are made based on the proportion of GIC dollars individual participants have in the different GIC's. Companies declined to bid due to the uncertainty of not knowing the amounts of withdrawals they could expect.

Three companies, New York Life, Prudential, and Mutual of America declined to bid because they determined they could not pay the consultant fee specified in the bid specs. The consultant fee was deemed, by these companies, to be a payment to an unlicensed representative.

EXHIBIT D

PARTICIPANTS IN THE 1993-1996 GIC

	Estimated Lump Sum (thousands)	Estimated Flow (thousands)	Total
Deferred Compensation	\$17,307	\$2,400	\$19,707
Unclassified Plan	1,430	240	1,670
Public Employees Defined Contribution Plan	121	150	271
Total	\$18,858	\$2,790	\$21,648

GIC EXHIBIT E

**PAST AND CURRENT
GIC CONTRACT HOLDERS**

GIC	Total \$'s (Millions)	GIC Rate	Companies	% of Total GIC
1993-1996	\$21.6	4.625%	Principal Mutual Hartford Life	50% at 4.60% 50% at 4.65%
1992-1995	16.6	5.28	Norwest Bank Minnesota	100%
1991-1994	33.0	6.6343	Provident National CNA	50% at 6.65% 50% at 6.6186%
1990-1993*	23.1	8.765	Mutual of America Provident National	50% at 8.95% 50% at 8.58%
1989-1992*	14.5	8.40	John Hancock	100%
1988-1991*	26.2	9.01	Mutual of America	100%
1987-1990*	16.7	8.45	Principal Mutual	100%
1986-1989*	4.5	7.72	Principal Mutual	100%

* Contracts have matured and are no longer in Fixed Interest Account portfolio.

MANAGER CONTINUATION POLICY

Position Paper

March 1988

June 1990 (Revised)

December 1993 (Revised)

MANAGER CONTINUATION POLICY
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EXECUTIVE SUMMARY

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

The Manager Continuation Policy offers several benefits:

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

The guidelines include both qualitative and quantitative evaluation criteria. Since it is difficult to statistically confirm investment skill, absolute reliance on portfolio return numbers is not wise. Qualitative aspects of a manager's operation must be taken into consideration when the SBI evaluates a manager's ability to add value *in the future*.

QUALITATIVE GUIDELINES

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

Elements of an Efficient Investment Organization

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

Elements of a Well-Defined Investment Approach

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

Figure 1 on page 18 of the paper provides a more specific list of criteria which may be used to evaluate a manager's investment organization and investment approach. Failure to meet one or more of these criteria should not be sufficient reason to terminate a manager. As a general rule, a qualitative evaluation should be applied in conjunction with a quantitative evaluation to determine whether a manager is meeting the Board's expectations. However, it is important to specify exceptions to this general rule. Certain changes in a manager's organization or investment approach will dictate immediate re-evaluation of the Board's relationship with the firm.

The following events will automatically place a manager "on probation":

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

A manager will remain on probation no longer than six months. If the issues of concern are not satisfactorily resolved, the manager should be terminated.

QUANTITATIVE GUIDELINES

Quantitative performance evaluation relates to those aspects of a money manager's operation that can be analyzed relative to measurable targets. A manager's return relative to an appropriate benchmark represents "the bottom line" for a plan sponsor. However, the investment performance of superior and inferior managers exhibits a large amount of variability, even when returns are measured relative to a customized benchmark. Quantitative performance criteria must take this variability into account. A poorly designed measure could lead a plan sponsor to erroneously classify managers as inferior. This, in turn, could create costly and excessive manager turnover.

Figure 2 on page 26 of the paper depicts a statistically valid method of assessing the variability of manager performance relative to an agreed upon benchmark. The horizontal line represents the return on the benchmark over moving five year periods. Performance exceeding (or conversely, falling below) the benchmark over the preceding five years will plot above (or conversely, below) the horizontal line. The area between the upper and

lower lines, or bands, represents a "confidence interval" based on the manager's actual return relative to its agreed upon benchmark. Returns within the confidence interval represent performance due either to skill or to chance. Returns falling outside the confidence interval represent superior or inferior performance significant enough that the odds of it being due to chance are low.

The SBI will use this confidence interval approach to highlight quantitative performance concerns by drawing a value of active management (VAM) graph for each active manager. The VAM graph will plot performance relative to the agreed upon benchmark, net of fees, and will include the performance history that led the SBI to retain the firm as well as the SBI's actual experience. Including a longer time period in the graph puts manager evaluation into a larger context and should assist the SBI in distinguishing unusual, deteriorating performance from recurring patterns in an active manager's returns. In addition, the confidence interval will be wider or narrower depending on the level of active risk that an individual manager takes. As a result, the confidence interval will tailor the analysis to the manager's own investment approach and will establish/define expectations regarding a manager's return volatility over time.

The SBI believes that it is unwise to mandate termination for lagging performance at any specific point. Instead, the following guidelines will be used to trigger appropriate review:

- **Review by the Stock and Bond Manager Committee of the Investment Advisory Council (IAC) if performance over rolling five year periods plots below the benchmark line for four consecutive quarters. This review could result in a recommendation to watch performance closely over the next year, to meet with the manager to discuss the issue or to call for a formal re-interview of the manager.**
- **Re-interview by special committee if performance over rolling five year periods plots below the lower band of the confidence interval for four consecutive quarters. Performance that plots below the lower band of the confidence interval will be considered a signal of serious under performance. If performance continues to plot below the lower band for one year, the manager will be formally re-interviewed by a special committee of Board member designees and IAC members.**

REPORTING FORMATS

The SBI will use two reporting formats to communicate information about its managers on a quarterly basis:

- **Manager Commentaries.** Each quarter, each manager will prepare a brief analysis of its own performance over the last quarter and year. This will include a description of active bets, the philosophy underlying those bets and an explanation of what worked and did not work. The commentary will also include information on ownership and personnel changes at the firm along with information about accounts gained and lost. The report format is illustrated in *Figure 3* on page 29 of the paper.
- **Performance Reports.** The performance evaluation report format in *Figure 4* on page 31 of the paper summarizes the salient features of the qualitative and quantitative guidelines. Qualitative evaluations will be reported on an exception basis. Only in cases where there is cause for concern, or where the manager is exceptionally positive, will the issue be highlighted. Quantitative evaluations will be presented using the confidence interval/VAM graph approach outlined above.

Both of these reports will be reviewed by the IAC on a quarterly basis and presented to the Board

NEW MANAGERS

The Board is likely to add new managers in the future. Hiring new managers does not necessarily imply that the Board is dissatisfied with its existing managers. The Board may simply come to the conclusion that a particular new manager can do a better job than an existing manager. A flexible approach to manager retention that is cognizant of the costs of manager turnover can benefit the Board's investment program. The qualitative and quantitative performance evaluation criteria discussed in this paper will be used in the hiring of new managers.

The SBI has established a Manager Monitoring Program which will collect detailed information on up to ten firms in each asset class. Candidates for the program will be suggested by Board members, IAC members, consultants and staff. When the SBI seeks to add or replace managers, a Search Committee will be convened to interview Manager

Monitoring Program candidates and to recommend that the Board retain one or more of those firms.

SECTION 1: OVERVIEW AND RETURN EXPECTATIONS

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

Evaluating the performance of this diverse group of money managers is an integral feature of the Board's investment policy. The Board expects its active managers to add value to their respective investment styles. Passive managers are expected to track the performance of their particular indices. In aggregate, the Board expects its managers to outperform their respective asset class targets. The Board has established the following return expectations for its domestic stock, domestic bond and international stock manager programs:

Domestic Stocks Asset Class Target: Wilshire 5000

<i>Structure</i>	<i>Allocation</i>	<i>Return Expectation*</i>
Active	Maximum 50%	+50 to +100 b.p.
Passive	Minimum 50%	-10 b.p.
Total Program		+20 to +45 b.p.

* annualized over time, relative to benchmark, net of all fees

Domestic Bonds Asset Class Target: Salomon Broad Investment Grade (BIG)

<i>Structure</i>	<i>Allocation</i>	<i>Return Expectation*</i>
Active	Maximum 50%	+25 to +50 b.p.
Semi-Passive	Minimum 50%	+15 to +25 b.p.
Total Program		+20 to +35 b.p.

* annualized over time, relative to benchmark, net of all fees

International Stocks

Asset Class Target: **MSCI index of Europe, Australia and the Far East (EAFE)**

<i>Structure</i>	<i>Allocation</i>	<i>Return Expectation*</i>
Active	Minimum 50%	+75 to +150 b.p.
Passive	Maximum 50%	-25 to +10 b.p.
Total Program		+25 to +75 b.p.

* annualized over time, relative to benchmark, net of all fees

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

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

The SBI believes that the evaluation framework in this position paper, or "manager continuation policy," offers three primary benefits:

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

While this position paper represents the SBI's attempt to present a comprehensive approach to manager performance evaluation, it should not be considered a static

document. As the SBI gains greater experience with external money managers and evaluation techniques, components of the framework will undoubtedly be modified and enhanced.

SECTION 2: AMBIGUITY OF SUPERIOR PERFORMANCE

Investment management is similar to other businesses in that plan sponsors contract to receive products or services that presumably will make them better off. Specifically, plan sponsors hire money managers because they believe that the managers will make investment decisions that will enhance the plan sponsors' wealth. However, the investment management business is unusual in that the quality of its "product" appears so readily quantifiable and simple to evaluate. It may appear that a plan sponsor needs only to observe changes in the value of money managers' portfolios over time to make appropriate judgments concerning the managers' talents. Unfortunately, performance evaluation is not this straightforward. Two important issues complicate the analysis:

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

RELATIVE NATURE OF INVESTMENT PERFORMANCE

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

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

INHERENT VARIABILITY OF INVESTMENT PERFORMANCE

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

NEED FOR APPROPRIATE BENCHMARKS

One means of addressing these two issues is to construct unique benchmarks for each money manager. Properly designed, such benchmarks reflect a manager's investment style. Thus, a benchmark is the appropriate standard against which to evaluate the manager's investment performance. Further, because appropriate benchmarks should be tied to the manager's investment style, some (but by no means all) of the "noise" caused by the random variability of capital market returns is removed from the evaluation process.

Valid benchmarks will have the following characteristics: (1)

- **Unambiguous.** The names and weights of the securities comprising the benchmark are clearly delineated.
- **Investable.** The option is available to forego active management and simply hold the benchmark portfolio.
- **Measurable.** It is possible to readily calculate the benchmark's return on a monthly basis.
- **Reflective of current investment opinions.** The manager has current investment opinions (be they positive, negative or neutral) on the securities which makes up the benchmark.
- **Appropriate.** The benchmark is consistent with the manager's investment style or biases.
- **Specified in advance.** The benchmark must be available prior to the start of an evaluation period.

With these characteristics in mind, the SBI uses the following benchmarks for its stock and bond managers

- **Domestic Bond Managers.** For the SBI's current domestic bond managers, a market index has been deemed to be an adequate representation of the manager's investment approach or security selection universe. Therefore, each bond manager uses the Salomon Broad Investment Grade (BIG) Index, or specific sub sectors of the index, as its benchmark.
- **Domestic Stock Managers.** Given the highly specialized approaches of the SBI's domestic stock managers, market indices are inappropriate performance standards. Instead, custom benchmarks or "normal portfolios" are used to reflect each firm's particular area of expertise. Stock managers are expected to add value to their individual benchmarks, over time, regardless of the performance of the broad market.
- **International Stock Managers.** At the present time, each of the SBI's international stock managers uses the Morgan Stanley Capital International index of Europe, Australia and the Far East (EAFE) as its benchmark. While the SBI would prefer to use customized benchmarks for these managers, benchmark building techniques are not as advanced for international managers as they are for domestic managers at the current time. In the future, the SBI intends to work with each of its international managers to develop a benchmark that is more representative of the manager's investment universe and portfolio construction process.

PROBABILITY OF UNDER PERFORMING A BENCHMARK

While the SBI believes that customized benchmarks have significant benefits and should be used wherever feasible, they are not a panacea for the difficulties of performance evaluation. Capturing a manager's investment style in a benchmark is an inexact process. Moreover, even given a precise benchmark, discerning superior and inferior performance in the near-term is very difficult because of the variability of investment returns.

An illustration may be useful to understand this point. Assume that the plan sponsor has retained a superior active stock manager. For purposes of this illustration, "superior" is defined as a manager whose value added compared to its benchmark, over time, is two percentage points (a high level of value added) with five percentage points of annual volatility (a reasonable assumption of volatility). (2) Even though this manager's performance is clearly superior in the long run, it is quite likely that its performance pattern will show marked periods of under performance relative to its benchmark:

**Probability that a *Superior* Manager
Will *Under perform* a Benchmark ***

Years	Probability
0.5	39%
1.0	34
3.0	24
5.0	19
10.0	10

* Assumes 2% value added and 5% volatility of value added, annualized

Source: Richards & Tierney, Inc.

As the above table shows, even a "superior" manager will have a 1-in-4 chance of under performing in any three year period and a 1-in-5 chance of under performing in any five year period. Other successful managers with somewhat lower levels of value added would have even *higher* probabilities of under performing.(3) This illustration points out that relying solely on past performance over a typical evaluation period of 3 to 5 years may easily lead to expensive, incorrect decisions.

As a result, a blind reliance on near-term relative performance comparisons, whether to market indices or to custom benchmarks, is not likely to lead to sound manager retention or continuation decisions. Other, less quantifiable factors have to be considered when assessing a manager's ability to add value *in the future*. Therefore, the SBI has integrated benchmarks into a decision-making framework which incorporates both qualitative and quantitative evaluation criteria. The following two sections describe that framework.

SECTION 3: QUALITATIVE GUIDELINES

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

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

Qualitative performance evaluation guidelines may be categorized into two primary areas of a manager's operations:

- Organization
- Investment Approach.

ORGANIZATION

An efficient organization is a necessary element of a successful investment program. Sub categories that the SBI believes characterize superior money management organizations are:

- **Experienced and talented staff.** Highly motivated and talented professionals lie at the heart of any successful investment organization. The evaluation criteria should judge the experience and quality of the professionals employed by a manager.
- **Organizational stability and clear leadership.** A superior money management organization not only offers incentives to retain talented professionals, but also

integrates these people into a cohesive structure. This requires effective leadership and organizational stability.

- **Planned growth.** A manager should have some type of business growth plan in place. Uncontrolled growth can impede a manager's performance. The growth path of a successful firm should be consistent with the organization's capabilities.
- **Adequate client support.** Large institutional clients, such as the Board, have a variety of administrative requests of a manager, including data collection, benchmark construction, strategy reports, etc. A manager's organization should be responsive to such needs.

INVESTMENT APPROACH

Talented people blended into an efficient organization are not enough to produce superior investment results. A well-defined investment approach is needed to focus the resources of a manager's organization in a particular direction. Sub categories that the SBI believes characterize superior organizations are:

- **Clearly specified investment style.** The capital markets represent a diverse and constantly evolving system. A manager cannot hope to attain significant expertise in all segments of the marketplace. Therefore, without the discipline of a well-defined investment approach, a money manager may expend its resources on segments of the market where it has no comparative advantage over other investors. A manager's investment approach includes a specification of those segments of the market in which the manager chooses to focus its energies. This specification can be defined as the manager's investment style. A manager's investment style should reflect a thoughtful approach to identifying attractive segments of the market. Further, a manager should have consistently and successfully applied its investment style over a variety of market conditions.
- **Well-conceived decision-making process.** A manager's investment style is implemented through a decision-making process. This decision-making process should be clear and well-conceived. It should involve a set of logical portfolio construction procedures, consistent with the manager's investment style.

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

DECISION GUIDELINES

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

Failure to meet one or more of these criteria should not serve as grounds for the immediate termination of a manager. As a general rule, a qualitative evaluation should be conducted in conjunction with the quantitative evaluation to determine the Board's confidence in a manager. However, there are several important exceptions to this general rule. Certain changes in a manager's organization or investment approach should dictate immediate re-evaluation of the Board's relationship with the firm.

The following events will automatically place a manager "on probation" and trigger an in-depth analysis of all aspects of a firm:

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

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

FIGURE 1

**MANAGER PERFORMANCE EVALUATION
QUALITATIVE CRITERIA**

I. ORGANIZATION/STAFF

A. Experience and Quality

1. Professionals exhibit a high degree of competence and experience.
2. Professionals have managed money successfully under variety of market conditions.
3. Professionals are familiar with needs of large institutional clients.
4. Firm demonstrates its commitment to integrity and fiduciary responsibility

B. Stability

1. Current group of professionals is responsible for firm's track record.
2. Turnover has not been extraordinary in terms of either numbers of people or reasons for their departures.
3. When turnover has taken place, prompt corrective measures have been taken.
4. Control or business emphasis of firm has not changed, or in those case where it has, the firm's investment process has remained intact

C. Leadership

1. An individual is clearly accountable for directing and motivating the firm's professionals
2. No serious dissension among professionals.

D. Growth in Assets/Accounts

1. Firm has growth policy in place, consistent with its investment approach.
2. Account load of portfolio managers is not excessive.
3. No extreme gain or loss of accounts has occurred in recent years

E. Client Relations

1. Support staff is adequate to provide satisfactory client servicing.
2. Firm demonstrates willingness to cooperate with clients to achieve client goals.

II. INVESTMENT APPROACH

A. Investment Style

1. Investment style is attractive in that it reflects a thoughtful consideration of reasonable risk-return opportunities.
2. Investment style has been consistently applied over a variety of market environments.
3. Investment style is represented by an appropriate benchmark.

B. Decision-Making Process

1. Portfolio construction procedures are specified, efficient, and consistent with the investment style.
2. Investment research coverage is thorough.
3. Decision-making hierarchy among professionals is clearly specified.
4. Firm demonstrates a willingness to make short-term active bets relative to its benchmark.

C. Performance Review Process

1. Comparisons of risk-return performance relative to a pre-determined benchmark are made.
2. Attempts are made to identify and rectify sources of performance problems.
3. Performance results, sources of returns, and investment strategy are clearly presented to clients.

SECTION 4: QUANTITATIVE GUIDELINES

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

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

- Type I Error. Continue a manager who will not add value *in the future*.
- Type II Error. Terminate a manager who will add value *in the future*.

Both of these errors will prove costly to the plan sponsor. Effective decision guidelines will seek an appropriate balance between eliminating managers that are not likely to add value in the future (i.e., attempting to avoid Type I errors) and incurring unproductive manager turnover (i.e., attempting to avoid Type II errors).

CONFIDENCE INTERVAL APPROACH

Figure 2 presents a general illustration of an approach to quantitative performance evaluation that attempts to recognize these two potential pitfalls. It takes into account both a manager's performance relative to a specific benchmark and the variability of the manager's returns around that benchmark.

The horizontal line in *Figure 2* represents the return on a hypothetical manager's benchmark. The manager's actual return less the return on the benchmark is shown by the jagged line. Thus, when the manager has exceeded (or conversely, fallen below) the benchmark's return, its relative return line will plot above (or conversely, below) the

horizontal line. The graph is constructed using rolling five year periods, i.e. each point on the graph depicts the preceding 60 months of returns, annualized and net of fees.

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

Avoiding a long discussion of statistical concepts (see Appendix A for additional information), the upper and lower bands in *Figure 2* represent a "confidence interval" surrounding the return on the manager's benchmark. In between the upper and lower confidence interval bands lies a range of performance relative to the benchmark for which it is difficult to distinguish skill from random chance. That is, in this range a manager's superior or inferior performance relative to the benchmark might be due to skill (or lack thereof), but there also is a high probability that the relative performance is due simply to chance. On the other hand, if a manager's relative return falls outside of the confidence interval, this result represents superior or inferior performance that is significant enough that the odds of it being due to chance alone are low. In such a case, a judgment concerning the manager's investment skill can be rendered with a reasonable degree of confidence.

Typical confidence ranges for active managers are shown below. The more volatile the manager's returns, the wider the range will be:

Estimated Confidence Intervals for Active Managers
Returns Above/Below Benchmark

Time Period	Domestic Stock	Domestic Bond	International Stock
3 yr. annualized	±3.0-5.0%	±1.5-3.0%	±6.0-8.0%
5 yr. annualized	±2.0-4.0%	±1.0-2.5%	±5.0-7.0%

Source: Estimates based on SBI staff records of active manager returns.

DECISION GUIDELINES

The SBI will use this confidence interval approach to highlight quantitative performance concerns about its money managers. Confidence intervals will be constructed for each manager using rolling five year time periods. The resulting value of active management (VAM) graph will plot performance relative to the agreed upon benchmark, net of fees. The confidence interval will be wider or narrower depending on the level of active risk that an individual manager takes. As a result, the confidence interval will tailor the analysis to the manager's own investment approach and will establish/define expectations regarding the manager's return volatility over time.

The graph will not be drawn until the SBI has two years of experience with the firm. When produced, the graph will display up to ten years of return history and will include the return data that led the SBI to retain the firm as well as the SBI's actual experience. Including a longer time period in the graph puts manager evaluation into a larger context and should assist the SBI to distinguish unusual, deteriorating performance from recurring patterns in an active manager's returns.

It is important to underscore that the SBI believes that it is unwise to mandate termination for lagging performance at any specific point. Instead, the following process will trigger appropriate review:

- Review by the Stock and Bond Manager Committee if performance plots below the benchmark line for one year.

Any manager whose rolling five year performance plots below the benchmark line for four consecutive quarters (one year) will be reviewed by the Stock and Bond Manager Committee of the IAC during the following quarter. In each case, the Committee will review the last 4-8 quarterly commentaries from the manager and decide if further action is warranted at that time. (See Section 5 for more information on the content of these commentaries.) The Committee may also request additional analysis by the SBI staff or consultant to assist in the review. The additional requests will be specified by the Committee so that the analysis can be tailored to the information needs of the Committee.

The review will result in a recommendation to watch performance closely over the next year, to meet with the manager to discuss the issue or to call for a formal re-interview of the manager. The Committee will need to re-affirm its findings if performance continues to lag the benchmark.

All recommendations will be reported to the full IAC. It is anticipated that the IAC and the Board will endorse the recommendations of the Stock and Bond Manager Committee since the Committee will have studied the issue most closely. However, the full IAC may choose to recommend another course of action by majority vote. Likewise, the Board may accept, reject or modify any recommendation from the Committee or the IAC.

- Re-interview if performance plots below the lower band of the confidence interval for one year.

Rolling five year performance that plots below the lower band of the confidence interval will be considered a signal of serious under performance. If performance continues to plot below the lower band for four consecutive quarters (one year), the manager must be formally re-interviewed by a special committee.

- Re-interview process.

Any re-interview of a current manager, whether called for by staff, the Stock and Bond Manager Committee, IAC or Board, or required because performance falls below the lower band for one year, will be conducted by a special committee. The Chair of the Stock and Bond Manager Committee will serve as chair of the special committee. At least one other member of the Stock and Bond Manager Committee will serve on the committee along with at least three Board member designees. This will provide a committee of at least five members. The flexibility on membership is needed to assure that the re-interview can be conducted in a timely fashion.

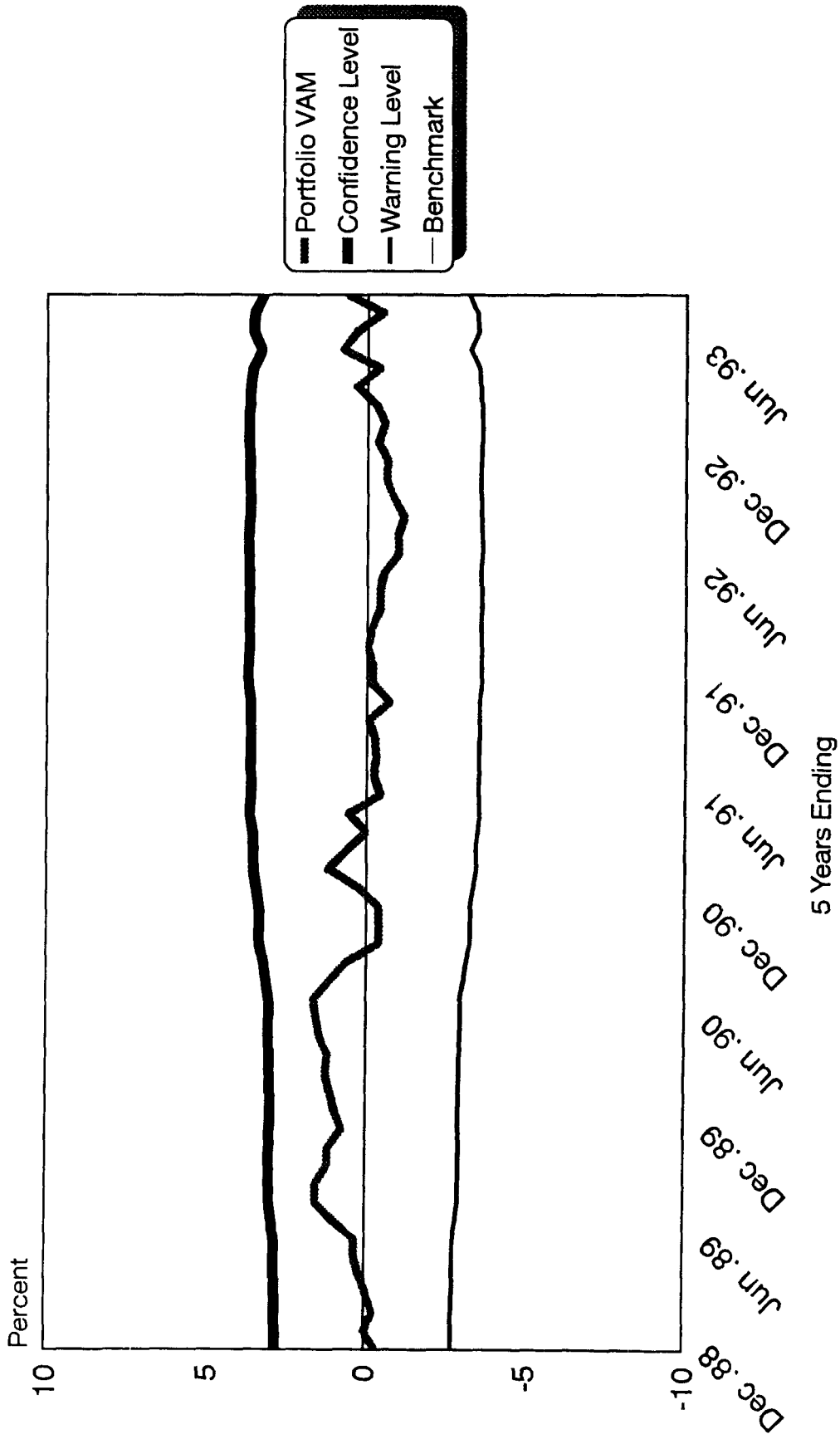
The special committee will use the same process that is applied to hiring new managers. The performance analysis should compare the SBI's actual experience with the manager to the performance of the firm's account composite for the discipline. The account composite should comply with the performance presentation standards of

the Association for Investment Management and Research (AIMR). This is the return series that will be used by the manager in most marketing/search presentations. Any significant differences in performance between the composite and the SBI's actual returns should be explained.

The special committee will recommend either to continue the manager (in effect a recommendation to "re-hire" the manager in question) or to terminate the SBI's relationship with the firm. The recommendation will be forwarded to the Board for action.

ACTIVE DOMESTIC EQUITY MANAGER

Rolling Five Year Time Periods



SECTION 5: REPORTING

QUARTERLY REPORTS

The SBI will use two reporting formats to communicate information about its managers on a quarterly basis:

- **Manager Commentaries.** Each quarter, each manager will prepare a brief analysis of its own performance over the last quarter and year. This will include a summary of active positions, the philosophy/outlook underlying those positions and explanation of what worked and did not work. In addition, the manager will highlight any significant ownership and personnel changes along with information about accounts gained and lost. Staff comments will be added which state whether the SBI staff/consultant attribution analysis confirms or disputes the manager's description of its active positions. Staff will also comment on the significance or insignificance of the organizational changes described by the manager. The purpose of the commentary is to convey information about, *and directly from*, each manager to the Board/IAC on a regular basis. It will summarize the analysis that staff conducts on an on-going basis for each firm. The format for the Manager Commentary is in *Figure 3*. These commentaries will be included in the materials prepared for the quarterly meetings of the Board/IAC.
- **Performance Reports.** The quarterly performance evaluation report format in *Figure 4* summarizes the salient features of the qualitative and quantitative evaluation guidelines. Qualitative evaluations will be reported on an exception basis. Only in cases where there is cause for concern, or where the manager is exceptionally positive, will the criteria be highlighted. Quantitative evaluations will be presented using the confidence interval/VAM graph approach outlined above. These reports will be reviewed by the IAC on a quarterly basis and presented to the Board. The reports will be shared with the Board's manager during the manager meetings conducted periodically by staff.

ANNUAL REVIEW OF CUSTOMIZED BENCHMARKS

Staff will prepare an annual review of all domestic stock manager benchmarks. This written analysis will be presented to the Stock and Bond Manager Committee and will

focus on benchmark quality. Since benchmark quality is confirmed, in large part, by statistical tests, a statistical discussion will be included. Staff will incorporate that data in appendices where possible and focus on the conclusions drawn from the analysis in the cover memo/summary of the report. (A similar analysis for domestic bond managers and international stock managers is not necessary *at this time* since they use market indices rather than customized benchmarks for evaluation purposes.)

REPORTS ON MANAGER/STAFF MEETINGS

Staff will meet with each manager at least annually, either at SBI offices or at the manager's place of business. Any comments on the meetings will be incorporated into the "staff comment" section of the quarterly Manager Commentaries described above.

IN-DEPTH REVIEWS

Staff will prepare an in-depth written review of a manager if the firm is placed on probation for qualitative reasons or if a manager is to be re-interviewed. While the components of the review may be tailored for each manager, staff expects that such a review will include:

- **Organizational background.** Ownership, professional staff, account growth, staff turnover.
- **Investment approach.** Philosophy, prominent characteristics, perceived changes in approach over time.
- **Performance analysis.** Performance attribution relative to the benchmark, perceived trends in sources of value added/lost.

FIGURE 3

Manager Commentary XYZ Manager

Period Ending:	x/x/xx		Qtr.	Year
		Actual		
		Benchmark		

1. Past Performance. Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?

2. Future Strategy. What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.

Commentary (continued)

3. Organizational Issues. Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.

4. Other Comments. Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.

Staff Comments

FIGURE 4

**XYZ Manager
Period Ending x/x/xx**

Portfolio Manager: xxx

Assets Under Management: \$xxx

Investment Philosophy
(paragraph description)

Qualitative Evaluation
(reported by exception)

Quantitative Evaluation
(SBI actual, net of fees)

Recommendations

	Actual	Benchmark
Last Quarter		
Last 1 year		
Last 2 years		
Last 3 years		
Last 4 years		
Last 5 years		
Since Incept.		

Value of Active Management Graph
Performance Relative to Benchmark

VAM graph will be drawn after 2 years for domestic stock and bond managers

When produced, the graph will include up to 10 years of history to give longer term perspective on the pattern of a manager's returns. A shaded area will represent performance prior to retention by the SBI. Those returns will be reduced by the manager's base fee to approximate performance net of fees.

SECTION 6: NEW MANAGERS

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

Hiring a new manager need not imply that the Board is seriously dissatisfied with its existing managers. The Board may simply come to the conclusion that a particular new manager can do a better job than an existing manager. Flexibility with respect to its manager group will present the Board with considerably more options than awaiting seriously poor performance.

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

MANAGER SELECTION

The process of hiring new managers should be as comprehensive and consistently applied as the process of evaluating existing managers. The performance evaluation criteria cited in this paper will be used when searching for new managers, as well as when evaluating existing ones. As discussed previously, the qualitative criteria represent necessary conditions for successful investment management. Generally, no manager will be hired unless it is considered excellent with respect to those qualitative criteria.

With respect to the quantitative criteria, a manager is expected to demonstrate that it can fulfill the Board's long term performance expectations. In general, managers will not be considered if they do not possess appropriate benchmarks. Ideally, the manager should provide historical risk and return data on its benchmark and be able to demonstrate superior performance relative to it. However, this requirement will not always be

attainable. If a manager does not have an appropriate benchmark at the time the firm is retained, the manager will be required to develop one within a mutually agreed upon time period (normally six months or less).

MANAGER MONITORING PROGRAM

The purpose of the Manager Monitoring Program is to maintain up-to-date, relevant information about firms which are likely to be serious candidates in future manager searches. Candidates may be suggested by Board members, IAC members, consultants or staff.

While candidates may be added or deleted at any time, staff will solicit suggestions from the above sources on at least an annual basis. Staff will review all suggested candidates with the Stock and Bond Manager Committee of the IAC. The Committee will then recommend which firms should be monitored on an on-going basis. Due to the quantity of data that is collected, no more than ten firms will be included from each asset class (i.e., domestic stocks, domestic bonds, international stocks).

Qualitative and quantitative data will be tracked for each firm. Quantitative data will include items such as historical returns and benchmark returns. The qualitative data will include information such as investment approach, organizational structure, client profiles and assets under management. Staff will communicate regularly with each firm in order to maintain and update the manager information on an on-going basis.

When the SBI seeks to add or replace one or more managers within an asset class, a Manager Search Committee will be convened. Normally, the Search Committee will include a designee of each Board member and at least two representatives of the IAC. The firms in the Manager Monitoring Program for the asset class in question will be interviewed by the Search Committee and one or more of the organizations will be recommended to the Board.

Footnotes

1. These characteristics are taken from work published by Richards & Tierney, Inc. an investment management consulting firm which has served as the SBI's consultant. For further information, see Bailey, Richards and Tierney, "Benchmark Portfolios and the Manager/Plan Sponsor Relationship," *Current Topics in Investment Management*, 1990, Harper & Row.

2. The ratio of value added to the expected variability of that value added is called the information ratio (IR). It provides a statistical measure of a manager's ability to provide consistent returns relative to a benchmark. In more mathematical terms this can be expressed as follows:

$$IR = \text{Value Added} / \text{Volatility of Value Added}$$

$$= (\text{Expected return vs benchmark}) / (\text{Expected volatility of return vs benchmark})$$

Therefore, the "superior" manager in the illustration with 2% value added and volatility of 5% has an information ratio of 0.4 (2% / 5%=0.4).

3. Probabilities of outperforming a benchmark for different information ratios or varying levels of investment skill and varying time periods are shown below:

	Information Ratio					
Years	0.20	0.30	0.40	0.67	0.80	1.00
0.5	55.63%	58.40%	61.14%	68.13%	71.42%	76.02%
1.0	57.93	61.79	65.54	74.75	78.81	84.03
3.0	63.81	69.83	75.58	87.59	91.71	95.84
5.0	67.26	74.88	81.45	93.20	96.32	98.73
10.0	73.65	82.86	89.70	98.25	99.43	99.92
20.0	81.70	91.01	96.32	99.86	99.98	99.99

Source: Richards & Tierney, Inc.

APPENDIX

Further Discussion of Confidence Intervals

This appendix provides a non-technical description of the confidence intervals used in the *Manager Continuation Policy*. More detailed discussions can be found in standard statistics textbooks.

The construction of a manager's confidence interval begins with a very simple assumption: the manager has no investment skill. Referring to *Figure 2*, if this assumption were true, then the manager's relative return (i.e., the difference between the return on the manager's portfolio and the return on the manager's benchmark) would be expected to plot along the horizontal line representing the manager's benchmark returns. The manager would be expected to neither outperform nor under perform its benchmark over any given time period.

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

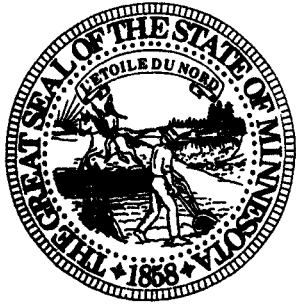
Can a plan sponsor make some statements about the range over which the no-skill manager's returns are likely to fall around its benchmark's returns? A confidence interval provides a statistical description. Based on the manager's past variability of returns relative to its benchmark, a plan sponsor can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

The vertical width of the confidence interval is determined by the probability of the confidence interval encompassing the manager's relative returns over time. The higher (or conversely, the lower) the probability of capturing the manager's returns, the wider (or conversely, the narrower) the confidence interval will be. For example, assume that the confidence interval in *Figure 2* is constructed to encompass 80% of the possible relative returns that the no-skill manager might produce. That is, assuming that the manager's relative returns exhibit the same variability in the future that they have in the past, there is an 80% probability that the manager's relative return will fall somewhere between the

upper and lower confidence bands. This implies that there is a 20% probability that the manager's relative return will lie outside the confidence interval. Even more specifically, there is a 10% probability that the manager's relative return will fall above the upper confidence level and a 10% probability that it will fall below the lower confidence level.

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

The appropriate percentage to use in constructing manager confidence intervals depends on each plan sponsor's view of what is an unusual event. The SBI has chosen to use a confidence interval that captures 80% of the manager's possible relative returns. That means that 10% of the time, a no-skill manager's relative return will fall below the lower confidence level simply by chance, not because the manager is actually inferior.



STATE BOARD OF INVESTMENT

Stock Manager Evaluation Reports

Third Quarter, 1993

DOMESTIC STOCK MANAGERS
Period Ending 9/30/93

Current Managers	Quarter		1 Year		3 years		5 Years		Since (1) 1/1/92		Since (2) Inception		Market Value (in millions)	Pool %
	Actual %	Bmk %	Actual %	Bmk %	Actual %	Bmk %	Actual %	Bmk %	Actual %	Bmk %	Actual %	Bmk %		
Alliance	5.4	2.4	18.9	8.0	23.4	17.0	19.1	12.0	11.3	3.7	18.1	11.6	\$701.42	7.4%
Brinson	2.6	4.0									2.6	4.0	254.78	2.7%
Forstmann-Leff	6.0	2.0	20.1	14.2	16.6	17.7	12.2	12.1	6.3	9.4	13.1	11.9	351.92	3.7%
Franklin Portfolio	5.1	4.3	29.6	20.5	25.1	23.0			17.6	13.7	15.0	13.5	374.68	4.0%
GeoCapital	10.8	9.4	28.5	39.6	34.6	29.0			7.0	15.5	18.4	17.7	254.87	2.7%
IAI	9.7	5.7									9.7	5.7	114.53	1.2%
IDS	3.3	4.1	19.9	19.0	20.7	20.4	15.8	14.5	11.8	14.1	14.9	14.4	359.58	3.8%
Independence	4.4	2.6	18.3	14.3							13.8	11.9	362.76	3.9%
Jundt Associates	2.6	4.2									2.6	4.2	209.32	2.2%
Lieber	5.7	6.7	20.1	24.0	19.8	24.8	10.1	12.5	6.8	15.1	11.4	11.7	195.78	2.1%
Lincoln	0.7	0.5									0.7	0.5	243.66	2.6%
Lynch & Mayer	6.2	6.1	17.9	20.4							11.2	12.1	324.62	3.4%
Oppenheimer	4.4	3.5									4.4	3.5	258.97	2.7%
Waddell & Reed	6.1	6.4	25.7	23.5	19.8	21.3	14.5	12.8	17.1		12.7	11.8	387.07	4.1%
Weiss Peck & Greer	8.7	8.2									8.7	8.2	219.36	2.3%
Emerging Managers (3)														
Wilshire Associates (4)	3.1	3.0	16.0	16.2	19.4	19.7	14.1	14.4	10.2	10.6	14.1	14.2	4,804.05	51.0%
													\$9,417.37	100.0%
											Since 1/1/84			
Current Aggregate	4.2	3.6	18.4	17.0	20.5	20.1	14.9	14.1	10.7	10.7	15.4	12.9		
Historical Aggregate (5)	4.2	3.6	18.2	17.1	20.0	20.0	14.2	14.0	10.6	10.7	13.9	14.0		
Wilshire Adjusted (6)	3.7			16.6		19.9		14.3		10.4		14.0		
Wilshire 5000	3.7			17.1		20.2		14.6		10.4		14.4		

(1) Since tilted index fund was fully implemented.

(2) Since retention by the SBI. Time period varies for each manager.

(3) Aggregate of emerging manager group.

(4) Passive manager. Tilted index fund began 10/90. Fully implemented 1/92.

(5) Includes performance of terminated managers.

(6) Buy hold index adjusted for liquor and tobacco restrictions through 3/31/93 and AHP restriction through 10/31/93.

ALLIANCE CAPITAL MANAGEMENT
Period Ending 9/30/93

Portfolio Manager: Jack Koltes

Assets Under Management: \$701,416,944

Investment Philosophy

Alliance searches for companies likely to experience high rates of earnings growth, on either a cyclical or secular basis. Alliance invests 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.

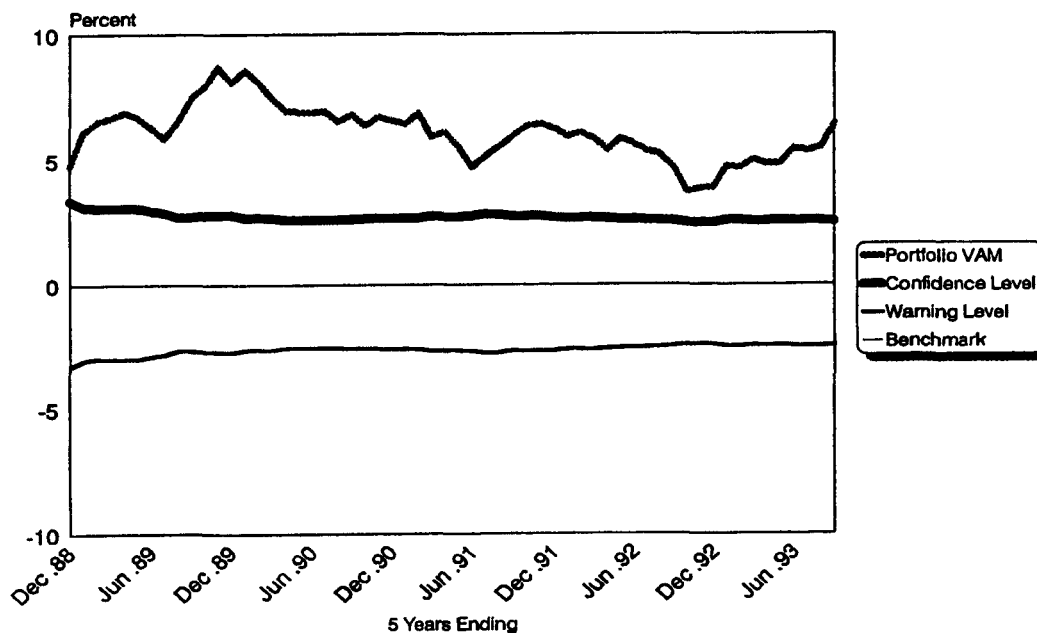
Quantitative Evaluation

	Actual	Benchmark
Last Quarter	5.4%	2.4%
Last 1 year	18.9	8.0
Last 2 years	17.8	8.5
Last 3 years	23.4	17.0
Last 4 years	13.9	7.9
Last 5 years	19.1	12.0
Since Inception (1/84)	18.1	11.6

Recommendations

No action recommended.

Alliance Capital Management
Rolling Five Year Time Periods



BRINSON PARTNERS
Period Ending 9/30/93

Portfolio Manager: Jeff Diermeier

Assets Under Management: \$254,781,286

Investment Philosophy

Brinson Partners uses a relative value approach to investing in equities. They believe that the market price will ultimately reflect the present value of the cash flows that the security will generate for the investor. They also believe both a macroeconomic theme approach and a bottom-up stock selection process can provide insight into finding opportunistic investments. Brinson uses their own discounted free cash flow model as their primary analytical tool for estimating the intrinsic value of a company.

**Qualitative Evaluation
(reported by exception)**

Exceptional strengths are:

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

Quantitative Evaluation

	Actual	Benchmark
Last Quarter	2.6%	4.0%
Last 1 year	N/A	N/A
Last 2 years	N/A	N/A
Last 3 years	N/A	N/A
Last 4 years	N/A	N/A
Last 5 years	N/A	N/A
Since Inception (7/93)	2.6	4.0

Recommendations

No action recommended.

VAM graph will be created for period ending 9/30/95.

FORSTMANN LEFF ASSOCIATES

Period Ending 9/30/93

Portfolio Manager: Joel Leff

Assets Under Management: \$351,918,339

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 equity sectors over the course of a market cycle. The firm tends to purchase liquid, large capitalization stocks. In the past, Forstmann Leff has made 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.
- Their investment style is aggressive, which creates volatile returns. This needs to be taken into account when evaluating returns over shorter time frames.

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

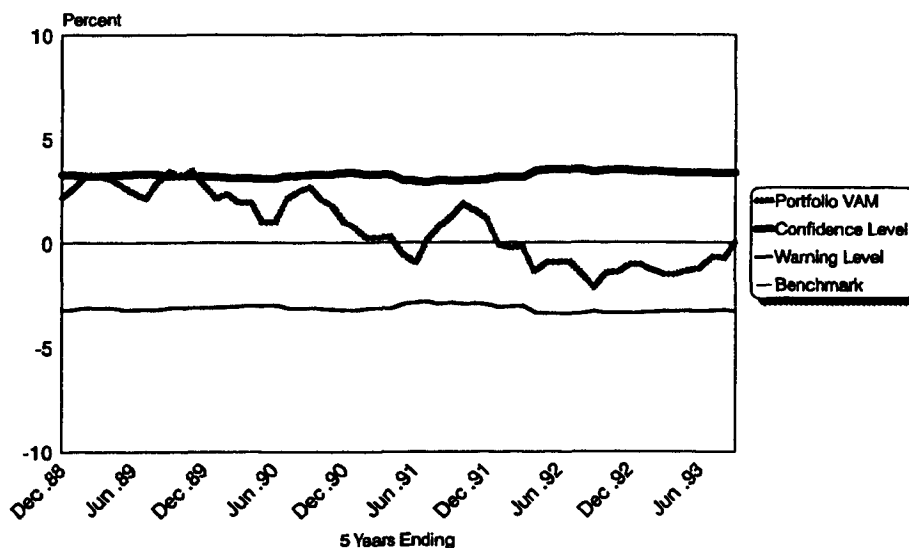
	Actual	Benchmark
Last Quarter	6.0%	2.0%
Last 1 year	20.1	14.2
Last 2 years	8.9	11.6
Last 3 years	16.6	17.7
Last 4 years	9.3	9.3
Last 5 years	12.2	12.1
Since Inception (1/84)	13.1	11.9

Recommendations

No action recommended.

FORSTMANN-LEFF ASSOCIATES

Rolling Five Year Time Periods



FRANKLIN PORTFOLIO ASSOCIATES
Period Ending 9/30/93

Portfolio Manager: John Nagorniak

Assets Under Management: \$374,675,915

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 to 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.

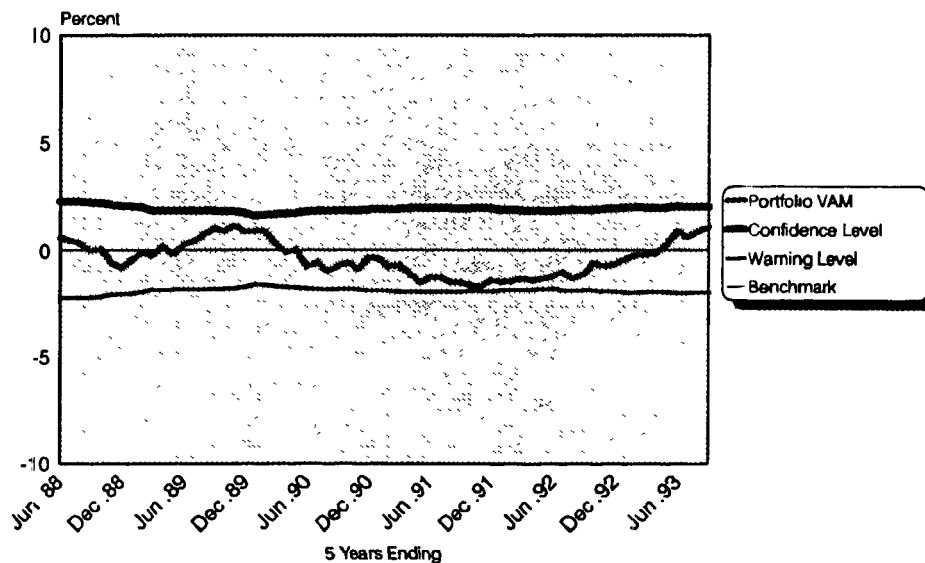
Quantitative Evaluation

	Actual	Benchmark
Last Quarter	5.1%	4.3%
Last 1 year	29.6	20.5
Last 2 years	20.3	16.2
Last 3 years	25.1	23.0
Last 4 years	11.4	11.0
Last 5 years	N/A	N/A
Since Inception (4/89)	15.0	13.5

Recommendations

No action recommended.

FRANKLIN PORTFOLIO
 Rolling Five Year Time Periods



Note: Shaded area includes performance prior to managing SBI account.

GEOCAPITAL CORP.
Period Ending 9/30/93

Portfolio Manager: Barry Fingerhut

Assets Under Management: \$254,865,842

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:

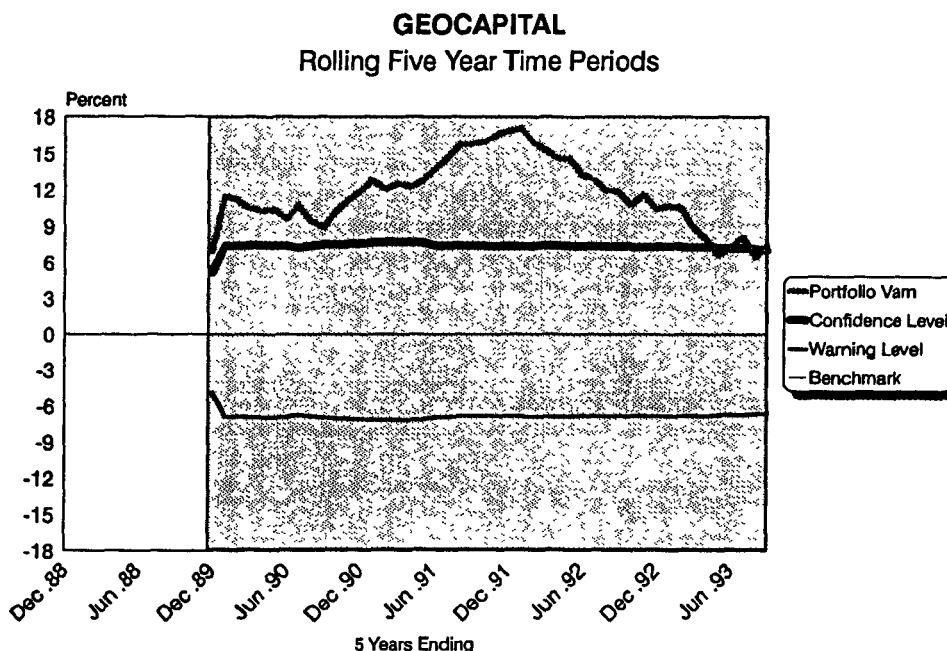
- Investment style consistently and successfully applied over a variety of market environments.
- Attractive, unique investment approach.
- Highly successful and experienced professionals.

Quantitative Evaluation

	Actual	Benchmark
Last Quarter	10.8%	9.4%
Last 1 year	28.5	39.6
Last 2 years	14.6	20.0
Last 3 years	34.6	29.0
Last 4 years	N/A	N/A
Last 5 years	N/A	N/A
Since Inception (4/90)	18.4	17.7

Recommendations

No action recommended.



*Note: Shaded area includes performance prior to managing SBI account.
 Scale differs from other manager VAM graphs.*

INVESTMENT ADVISERS
Period Ending 9/30/93

Portfolio Manager: Julian (Bing) Carlin

Assets Under Management: \$114,532,693

Investment Philosophy

IAI's investment philosophy is to own the highest quality companies which demonstrate sustainable growth. The objective of this discipline is capital appreciation and they try to achieve this objective by investing at least 80% of its equity investments in companies which have their headquarters in Minnesota, Wisconsin, Illinois, Iowa, Nebraska, Montana, North Dakota and South Dakota. Twenty percent of the portfolio can be used to purchase large capitalization stocks that display the same quality and growth characteristics but have headquarters outside this region.

**Qualitative Evaluation
(reported by exception)**

Exceptional strengths are:

- Attractive, unique investment approach.
- Investment style successfully applied over a number of market cycles.

Quantitative Evaluation

	Actual	Benchmark
Last Quarter	9.7%	5.7%
Last 1 year	N/A	N/A
Last 2 years	N/A	N/A
Last 3 years	N/A	N/A
Last 4 years	N/A	N/A
Last 5 years	N/A	N/A
Since Inception (7/93)	9.7	5.7

Recommendations

No action recommended.

VAM graph will be created for period ending 9/30/95.

IDS ADVISORY
Period Ending 9/30/93

Portfolio Manager: Pete Anderson

Assets Under Management: \$359,581,675

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)**

Exceptional strengths are:

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

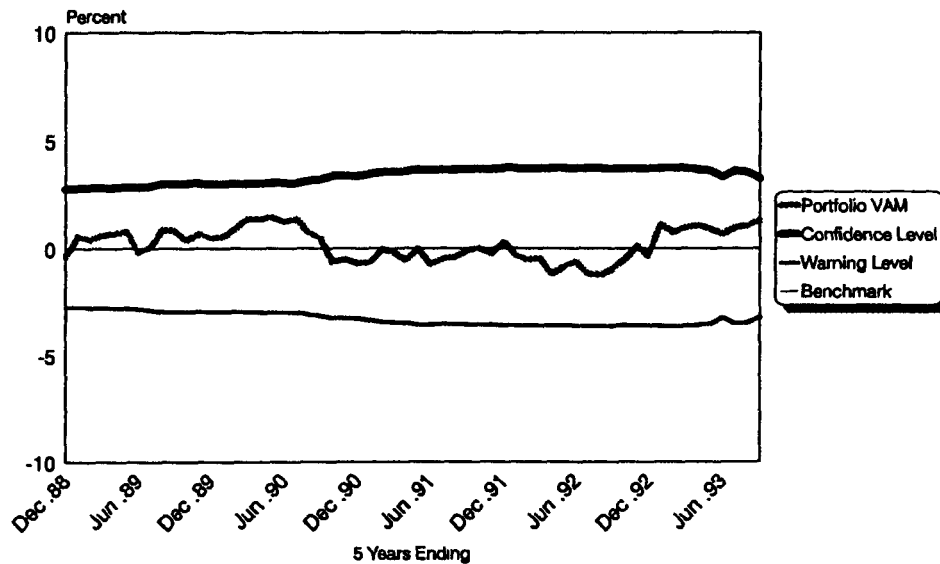
Quantitative Evaluation

	Actual	Benchmark
Last Quarter	3.3%	4.1%
Last 1 year	19.9	19.0
Last 2 years	16.1	16.7
Last 3 years	20.7	20.4
Last 4 years	11.1	11.1
Last 5 years	15.8	14.5
Since Inception (1/84)	14.9	14.4

Recommendations

No action recommended.

IDS ADVISORY
Rolling Five Year Time Periods



INDEPENDENCE INVESTMENT ASSOCIATES
Period Ending 9/30/93

Portfolio Manager: Bill Fletcher

Assets Under Management: \$362,755,620

Investment Philosophy

Independence believes that individual stocks which outperform the market always have two characteristics: they are intrinsically cheap and their business is in the process of improving. Independence ranks their universe by issuing a multifactor model. Using input primarily generated by their internal analysts, the model ranks each stock based on 10 discreet criteria. Independence constricts their portfolio by using the top 60% of their ranked universe and optimizing it relative to the benchmark selected by the client to minimize the market and industry risks. Independence maintains a fully invested portfolio and rarely holds more than a 1% cash position.

**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

	Actual	Benchmark
Last Quarter	4.4%	2.6%
Last 1 year	18.3	14.3
Last 2 years	N/A	N/A
Last 3 years	N/A	N/A
Last 4 years	N/A	N/A
Last 5 years	N/A	N/A
Since Inception (2/92)	13.8	11.9

Recommendations

No action recommended.

VAM graph will be created for period ending 6/30/94.

JUNDT ASSOCIATES
Period Ending 9/30/93

Portfolio Manager: James Jundt

Assets Under Management: \$209,318,160

Investment Philosophy

Jundt Associates' investment philosophy is growth oriented with a focus on companies generating significant revenue increases. They concentrate on larger-capitalization companies, with at least half the equity securities consisting of companies with annual revenues over \$750 million. Within these parameters, the firm's mission is to establish equity positions in 30 to 50 of the fastest growing corporations in America. Particular emphasis is placed on companies the firm believes will achieve annual revenue growth of 15% or greater. Jundt utilizes a bottom-up stock selection process combined with a top-down theme overlay. The firm attempts to identify five to seven investment themes and typically invests three to five stocks in each theme.

Qualitative Evaluation
(reported by exception)

Exceptional strengths are:

- Attractive, unique investment approach.
- Investment style has been consistently over a number of market cycles.

Current concerns are:

- One of the firm's four partners resigned last quarter. While a replacement has been hired, this transition should be monitored going forward.

Quantitative Evaluation

	Actual	Benchmark
Last Quarter	2.6%	4.2%
Last 1 year	N/A	N/A
Last 2 years	N/A	N/A
Last 3 years	N/A	N/A
Last 4 years	N/A	N/A
Last 5 years	N/A	N/A
Since Inception (7/93)	2.6	4.2

Recommendations

No action recommended.

VAM graph will be created for period ending 9/30/95.

LIEBER & COMPANY
 Period Ending 9/30/93

Portfolio Manager: Steve Lieber, Nola Falcone

Assets Under Management: \$195,784,168

Investment Philosophy

Lieber & 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.

**Qualitative Evaluation
 (reported by exception)**

Exceptional strengths are:

- Strong leadership.
- Attractive, unique investment approach.
- Extensive securities research process.

Current concerns are:

- Recent performance has lagged due to poor stock selection, which has been the firm's focus.
- Organizational/staffing changes during the last 12-24 months have not provided perceptible benefit.

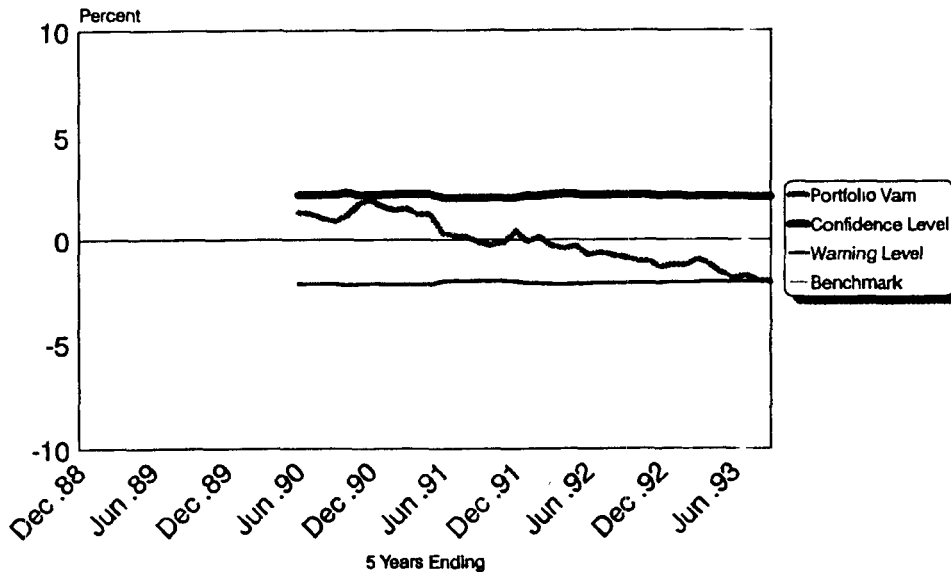
Quantitative Evaluation

	Actual	Benchmark
Last Quarter	5.7%	6.7%
Last 1 year	20.1	24.0
Last 2 years	9.9	16.8
Last 3 years	19.8	24.8
Last 4 years	6.9	9.9
Last 5 years	10.1	12.5
Since Inception (1/84)	11.4	11.7

Recommendations

Manager was terminated 9/30/93.

LIEBER & COMPANY
 Rolling Five Year Time Periods



LINCOLN CAPITAL MANAGEMENT
Period Ending 9/30/93

Portfolio Manager: Parker Hall

Assets Under Management: \$243,655,413

Investment Philosophy

Lincoln Capital concentrates on established medium to large capitalization companies that have demonstrated historically strong growth and will continue to grow. Lincoln uses traditional fundamental company analysis and relative price/earnings valuation disciplines. In addition to the medium to large capitalization and growth bias, companies held by Lincoln generally exhibit premium price/book ratios, high return on equity, strong balance sheets and moderate earnings variability.

**Qualitative Evaluation
(reported by exception)**

Exceptional strengths are:

- Organizational continuity and strong leadership.
- Familiar with the needs of large clients.
- Investment style has been consistently applied over a number of market cycles.

Quantitative Evaluation

	Actual	Benchmark
Last Quarter	0.7%	0.5%
Last 1 year	N/A	N/A
Last 2 years	N/A	N/A
Last 3 years	N/A	N/A
Last 4 years	N/A	N/A
Last 5 years	N/A	N/A
Since Inception (7/93)	0.7	0.5

Recommendations

No action recommended.

VAM graph will be created for period ending 9/30/95.

LYNCH & MAYER
Period Ending 9/30/93

Portfolio Manager: Eldon Mayer

Assets Under Management: \$324,622,974

Investment Philosophy

Lynch & Mayer invest primarily in high-quality, large capitalization growth stocks. They believe that outstanding investments are a function of corporate earnings growth considerably above historical trends or consensus expectations. Lynch & Mayer are bottom up stock pickers and rely on very little economic analysis in their selection process. The firm screens out stocks below a certain market capitalization and liquidity level and then eliminates additional stocks based on various fundamental criteria. After the screening process they look for at least one of the following four factors: 1) acceleration of growth; 2) improving industry environment; 3) corporate restructuring; or 4) turnaround. The firm generally stays fully invested, with any cash due to lack of attractive investment opportunities.

Qualitative Evaluation
(reported by exception)

Exceptional strengths are:

- Organizational continuity and strong leadership.
- Highly successful and experienced professionals.

Quantitative Evaluation

	Actual	Benchmark
Last Quarter	6.2%	6.1%
Last 1 year	17.9	20.4
Last 2 years	N/A	N/A
Last 3 years	N/A	N/A
Last 4 years	N/A	N/A
Last 5 years	N/A	N/A
Since Inception (2/92)	11.2	12.1

Recommendations

No action recommended.

VAM graph will be created for period ending 6/30/94.

OPPENHEIMER CAPITAL
Period Ending 9/30/93

Portfolio Manager: John Lindenthal

Assets Under Management: \$258,970,417

Investment Philosophy

Oppenheimer's objectives are to: 1) preserve capital in falling markets; 2) manage risk in order to achieve less volatility than the market; and 3) produce returns greater than the market indices, the inflation rates and a universe of comparable portfolios with similar objectives. The firm achieves its objectives by purchasing securities considered to be undervalued on the basis of known data and strict financial standards and by making timely changes in the asset mix of their portfolios. Based on its outlook on the market and the economy, Oppenheimer will make moderate shifts between cash and equities. Oppenheimer focuses on five key variables when evaluating companies: management, financial strength, profitability, industrial position and valuation.

**Qualitative Evaluation
(reported by exception)**

Exceptional strengths are:

- Highly successful and experienced professionals.
- Familiar with the needs of large institutional clients.
- Investment style has been consistently applied over a number of market cycles.

Quantitative Evaluation

	Actual	Benchmark
Last Quarter	4.4%	3.5%
Last 1 year	N/A	N/A
Last 2 years	N/A	N/A
Last 3 years	N/A	N/A
Last 4 years	N/A	N/A
Last 5 years	N/A	N/A
Since Inception (7/93)	4.4	3.5

Recommendations

No action recommended.

VAM graph will be created for period ending 9/30/95.

WADDELL & REED ASSET MANAGEMENT
Period Ending 9/30/93

Portfolio Manager: Henry Herrmann

Assets Under Management: \$387,073,626

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.

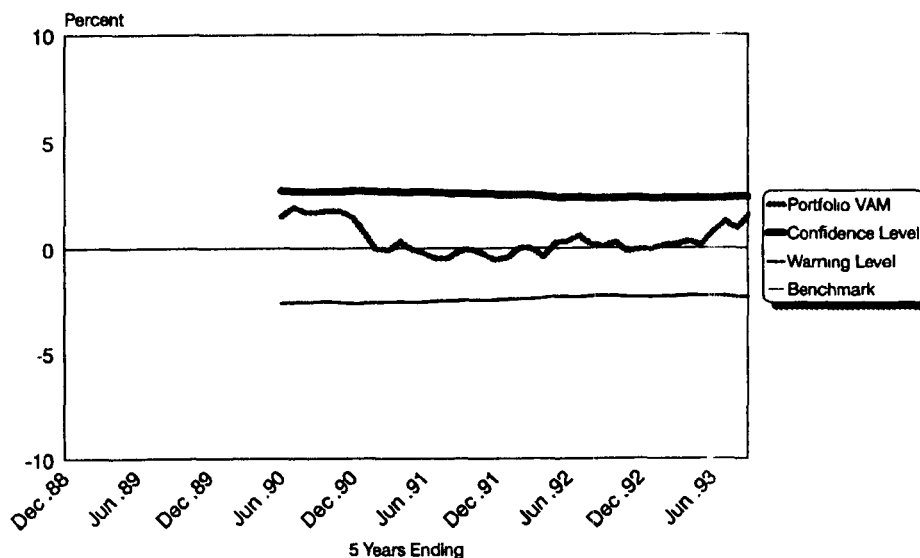
Quantitative Evaluation

	Actual	Benchmark
Last Quarter	6.1%	6.4%
Last 1 year	25.7	23.5
Last 2 years	17.8	15.5
Last 3 years	19.8	21.3
Last 4 years	10.6	10.4
Last 5 years	14.5	12.8
Since Inception (1/84)	12.7	11.8

Recommendations

No action recommended.

WADDELL & REED
Rolling Five Year Time Periods



WEISS, PECK & GREER
Period Ending 9/30/93

Portfolio Manager: Melville Straus

Assets Under Management: \$219,355,678

Investment Philosophy

Weiss, Peck & Greer's dynamic growth process concentrates on small to medium size growth companies that have demonstrated consistent superior earnings growth rates. The process emphasizes companies in new or dynamic, rapidly growing industries where there is a potential for a major acceleration in earnings growth. The firm also believes that superior stock selection can be achieved through in-depth fundamental company research.

Qualitative Evaluation
(reported by exception)

Exceptional strengths are:

- Highly successful and experienced professionals.
- Investment style has been consistently applied over a number of market cycles.

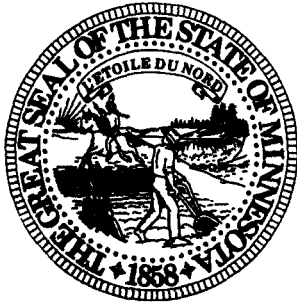
Quantitative Evaluation

	Actual	Benchmark
Last Quarter	8.7%	8.2%
Last 1 year	N/A	N/A
Last 2 years	N/A	N/A
Last 3 years	N/A	N/A
Last 4 years	N/A	N/A
Last 5 years	N/A	N/A
Since Inception (7/93)	8.7	8.2

Recommendations

No action recommended.

VAM graph will be created for period ending 9/30/95.



STATE BOARD OF INVESTMENT

Bond Manager Evaluation Reports

Third Quarter, 1993

DOMESTIC BOND MANAGERS
Period Ending 9/30/93

Current Managers	Quarter		1 Year		3 years		5 Years		Since (1) Inception		Market Value (in millions)	Pool %
	Actual %	Bmk %	Actual %	Bmk %	Actual %	Bmk %	Actual %	Bmk %	Actual %	Bmk %		
BEA	3.0	2.6							3.0	2.6	\$297.38	4.4%
IAI	3.7	2.6	13.6	10.2	15.4	13.0	12.6	11.5	13.7	13.1	534.86	7.9%
Miller	3.5	2.6	13.8	10.2	15.5	12.9	12.1	11.5	13.4	13.1	535.97	7.9%
Standish	3.0	2.6							3.0	2.6	528.47	7.8%
Western	3.9	2.6	14.8	10.2	15.3	13.1	13.0	11.6	14.5	13.0	966.02	14.3%
IDS (2)	4.3	3.4							4.3	3.4	268.95	4.0%
TCW (3)	2.9	0.9							2.9	0.9	265.18	3.9%
Goldman (4)	2.8	2.6							2.8	2.6	1,130.30	16.7%
Fidelity (4)	3.0	2.6	10.9	10.2	13.5	12.9	11.9	11.5	11.6	11.3	1,125.23	16.6%
Lincoln (4)	2.6	2.6	10.2	10.2	13.0	12.9	11.5	11.5	11.3	11.3	1,122.53	16.6%
											\$6,774.89	100.0%
									Since 7/1/84			
Current Aggregate	3.2	2.6	12.1	10.2	14.1	13.0	12.1	11.5	13.7	13.0		
Historical Aggregate (5)	3.2	2.6	12.0	10.2	14.0	12.9	11.9	11.5	13.0	12.9		
Salomon BIG		2.6		10.2		12.9		11.5		13.1		

- (1) Since retention by the SBI. Time period varies for each manager.
(2) Govt./Corp. only.
(3) Mortgages only.
(4) Semi- passive manager.
(5) Includes performance of terminated managers.

BEA ASSOCIATES
Period Ending 9/30/93

Portfolio Manager: Bob Moore

Assets Under Management: \$297,382,668

Investment Philosophy

BEA's investment approach focuses on individual bond selection and on sector selection rather than short term interest rate forecasting. BEA keeps the duration close to the benchmark but may be slightly longer or shorter depending on their long-term economic outlook. BEA's approach is distinguished by 1) a quantitative approach which avoids market timing; 2) contrarian weightings of bond sectors and 3) rigorous call and credit analysis rather than yield driven management.

**Qualitative Evaluation
(reported by exception)**

Exceptional strengths are:

- Highly successful and experienced professionals.
- Extensive option analysis capabilities.

Quantitative Evaluation

	Actual	Benchmark
Last Quarter	3.0%	2.6%
Last 1 year	N/A	N/A
Last 2 years	N/A	N/A
Last 3 years	N/A	N/A
Last 4 years	N/A	N/A
Last 5 years	N/A	N/A
Since Inception (7/93)	3.0	2.6

Recommendations

No action recommended.

VAM graph will be drawn for period ending 9/30/95.

IDS ADVISORY GROUP
Period Ending 9/30/93

Portfolio Manager: Ed Labenski

Assets Under Management: \$268,953,606

Investment Philosophy

IDS manages a corporate and treasury portfolio for the SBI. The firm uses duration management combined with in-depth fundamental analysis of the corporate sector to add value to the portfolio. Active duration management begins with an economic overview and interest rate outlook. These factors help IDS determine the direction of both short and long-term interest rates which leads to the portfolio duration decisions. After IDS determines duration, they use their extensive corporate research capabilities to determine corporate sector allocation and to select individual issues.

**Qualitative Evaluation
(reported by exception)**

Exceptional strengths are:

- Highly successful and experienced professionals.
- Extensive corporate research capabilities.

Quantitative Evaluation

	Actual	Benchmark
Last Quarter	4.3%	3.7%
Last 1 year	N/A	N/A
Last 2 years	N/A	N/A
Last 3 years	N/A	N/A
Last 4 years	N/A	N/A
Last 5 years	N/A	N/A
Since Inception (7/93)	4.3	3.7

Recommendations

No action recommended

VAM graph will be drawn for period ending 9/30/95.

INVESTMENT ADVISERS
Period Ending 9/30/93

Portfolio Manager: Larry Hill

Assets Under Management: \$534,855,504

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 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:

- The manager's duration decisions have added value recently.

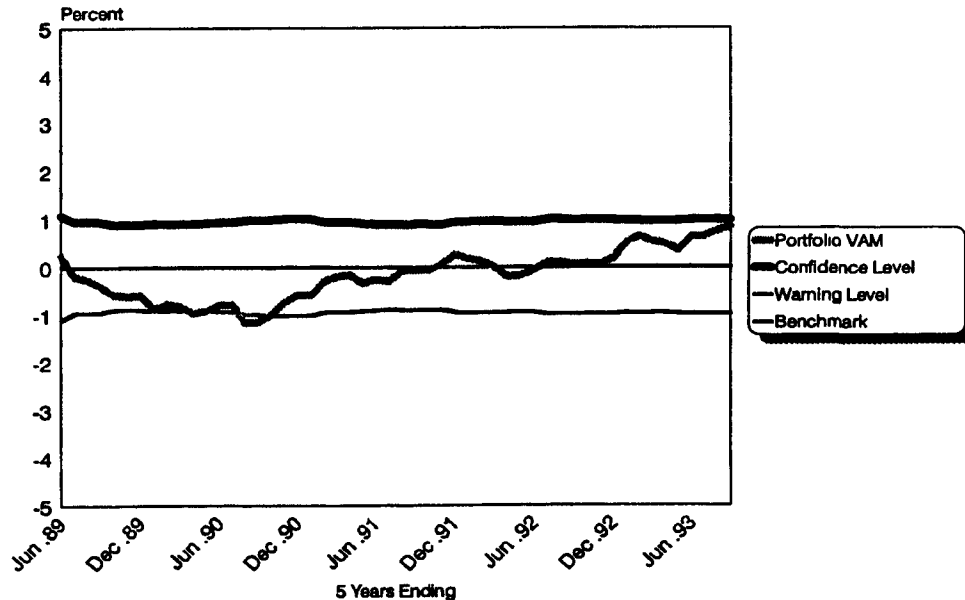
Quantitative Evaluation

	Actual	Benchmark
Last Quarter	3.7%	2.6%
Last 1 year	13.6	10.2
Last 2 years	13.8	11.4
Last 3 years	15.4	13.0
Last 4 years	12.7	11.5
Last 5 years	12.6	11.5
Since Inception (7/84)	13.7	13.1

Recommendations

No action recommended.

Investment Advisers
Rolling Five Year Time Periods



MILLER ANDERSON & SHERRERD
 Period Ending 9/30/93

Portfolio Manager: Tom Bennett

Assets Under Management: \$535,972,950

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 firms strengths continue to be:

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

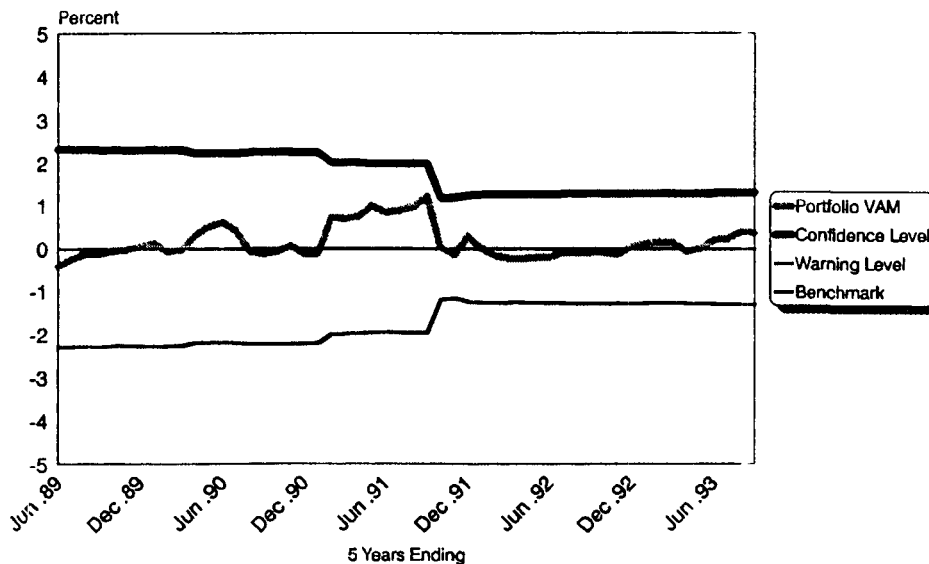
Quantitative Evaluation

	Actual	Benchmark
Last Quarter	3.5%	2.6%
Last 1 year	13.8	10.2
Last 2 years	13.7	11.4
Last 3 years	15.5	12.9
Last 4 years	13.1	11.6
Last 5 years	12.1	11.5
Since Inception (7/84)	13.4	13.1

Recommendations

No action recommended

MILLER ANDERSON
 Rolling Five Year Time Periods



STANDISH, AYER & WOOD
Period Ending 9/30/93

Portfolio Manager: Austin Smith

Assets Under Management: \$528,468,114

Investment Philosophy

Standish adds value by capitalizing on market inefficiencies and trading actively through intra and inter-sector swapping. The firm does not forecast interest rates but adds value to the portfolio by buying non-Treasury issues. Key to the approach is active sector trading and relative spread analysis of both sectors and individual issues. In addition to sector spreads, the firm also analyzes how secular trends affect bond pricing. The firm believes that 65% of its value added comes from inter-sector swapping in non-government sectors.

**Qualitative Evaluation
(reported by exception)**

Exceptional strengths are:

- Highly successful and experienced professionals
- Extensive corporate research capabilities.

Quantitative Evaluation

	Actual	Benchmark
Last Quarter	3.0%	2.6%
Last 1 year	N/A	N/A
Last 2 years	N/A	N/A
Last 3 years	N/A	N/A
Last 4 years	N/A	N/A
Last 5 years	N/A	N/A
Since Inception (7/93)	3.0	2.6

Recommendations

No action recommended.

VAM graph will be drawn for period ending 9/30/95

TCW
Period Ending 9/30/93

Portfolio Manager: Philip Barach

Assets Under Management: \$265,182,706

Investment Philosophy

TCW manages a mortgage only portfolio for the SBI. TCW is a mortgage manager that emphasizes security selection. TCW invests a significant portion of the portfolio in collateralized mortgage obligations (CMO's). The staff analyzes various Wall Street models used to evaluate CMO's and determines the validity of their underlying assumptions. They have added significant value by understanding the strengths and weaknesses of these models. This helps them purchase undervalued securities and avoid those that are overpriced.

**Qualitative Evaluation
(reported by exception)**

Exceptional strengths are:

- Highly successful and experienced professionals
- Extensive CMO investment experience.

Quantitative Evaluation

	Actual	Benchmark
Last Quarter	2.9%	0.9 %
Last 1 year	N/A	N/A
Last 2 years	N/A	N/A
Last 3 years	N/A	N/A
Last 4 years	N/A	N/A
Last 5 years	N/A	N/A
Since Inception (7/93)	2.9	0.9

Recommendations

No action recommended

VAM graph will be drawn for period ending 9/30/95.

WESTERN ASSET MANAGEMENT
Period Ending 9/30/93

Portfolio Manager: Kent Engel

Assets Under Management: \$966,018,484

Investment Philosophy

Western recognizes the importance of interest rate 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 securities research process.

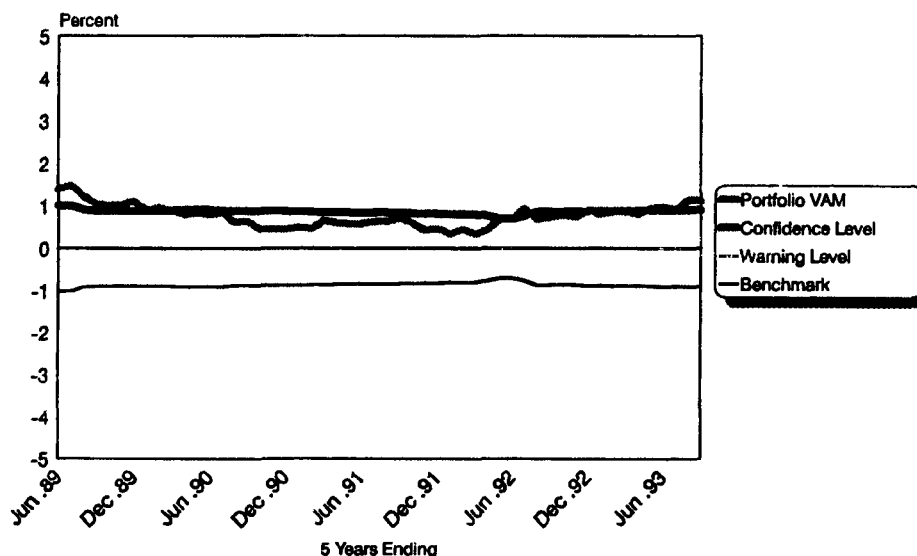
Quantitative Evaluation

	Actual	Benchmark
Last Quarter	3.9%	2.6%
Last 1 year	14.8	10.2
Last 2 years	14.0	11.4
Last 3 years	15.3	13.1
Last 4 years	12.9	11.8
Last 5 years	13.1	11.6
Since Inception (7/84)	14.5	13.0

Recommendations

No action recommended.

**Western Asset Management
 Rolling Five Year Time Periods**



FIDELITY MANAGEMENT TRUST
Period Ending 9/30/93

Portfolio Manager: Tom Steffanci

Assets Under Management: \$1,125,226,865

Investment Philosophy

Fidelity is an enhanced index manager who builds an index portfolio using stratified sampling and a risk factor model. Using stratified sampling, Fidelity divides the Salomon BIG into subsectors based on characteristics like maturity, coupon, sector and quality and chooses securities to represent each cell. The portfolio is then compared to the Salomon BIG using a risk factor model. Fidelity adds value to the portfolio through sector selection, issue selection, credit research and yield curve strategies. Fidelity weights sectors based on their relative value and attempts to buy stable credits or credits likely to be upgraded. Finally, Fidelity changes the maturity distribution of the portfolio securities to take advantage of non-parallel shifts in the yield curve.

Qualitative Evaluation
(reported by exception)

Exceptional strengths are:

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

Current concerns are:

- New portfolio manager as of March 1993. (Former portfolio manager, Sharmin Massavar-Rahmani left to join Goldman Sachs.)

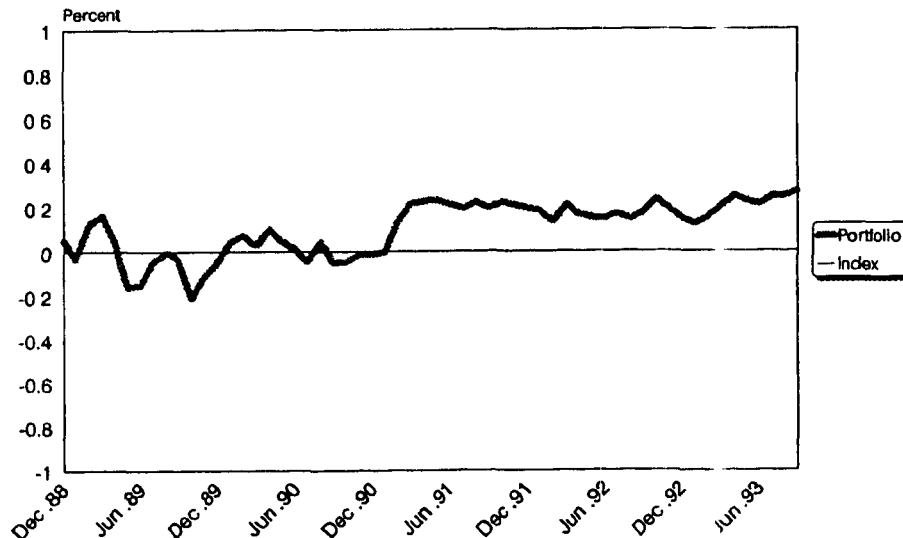
Quantitative Evaluation

	Actual	Benchmark
Last Quarter	3.0%	2.6%
Last 1 year	10.9	10.2
Last 2 years	11.8	11.4
Last 3 years	13.5	12.9
Last 4 years	12.0	11.6
Last 5 years	11.9	11.5
Since Inception (7/88)	11.6	11.3

Recommendations

No action recommended.

Fidelity Management Trust
Cumulative Tracking Report



GOLDMAN SACHS
Period Ending 9/30/93

Portfolio Manager: Sharmin Mossavar Rahmani

Assets Under Management: \$1,130,298,793

Investment Philosophy

Goldman is an enhanced index manager that focuses on security selection. When analyzing treasuries, the firm models Treasury coupons with an arbitrage based pricing model. This model determines the spread between actual and intrinsic market yields and determines whether the security is rich or cheap. Goldman takes a highly quantitative and analytical approach to value mortgage securities as well. Goldman uncovers undervalued securities using proprietary research and internally developed models. In the corporate sector, Goldman performs its own credit review of each issue. Goldman adds value to the corporate sector with extensive research, market knowledge, and trading skill.

**Qualitative Evaluation
(reported by exception)**

Exceptional strengths are:

- Highly successful and experienced professionals.
- Quantitative capabilities.

Quantitative Evaluation

	Actual	Benchmark
Last Quarter	2.8%	2.6%
Last 1 year	N/A	N/A
Last 2 years	N/A	N/A
Last 3 years	N/A	N/A
Last 4 years	N/A	N/A
Last 5 years	N/A	N/A
Since Inception	2.8	2.6

Recommendations

No action recommended.

VAM graph will be drawn for the period ending 9/30/95.

LINCOLN CAPITAL MANAGEMENT
Period Ending 9/30/93

Portfolio Manager: Brian Johnson

Assets Under Management: \$1,122,532,789

Investment Philosophy

Lincoln is an enhanced index manager that uses a quantitative approach to managing the portfolio. Lincoln calculates the index's expected return for changes in 54 variables. These variables include interest rates, yield curve shape, call features and sector spreads. Lincoln then constructs a portfolio to match the expected returns for a given change in any of the variables. Lincoln relaxes the return tolerances, defined as the difference between the portfolio's expected returns and that for the index, for an enhanced index fund. The portfolio's securities are selected from a universe of 250 liquid issues using a proprietary risk-valuation model. A linear program or portfolio optimizer then constructs the most undervalued portfolio that still matches the return characteristics of the index.

Qualitative Evaluation
(reported by exception)

The firm's strengths are:

- Highly successful and experienced professionals.
- Extensive quantitative capabilities.

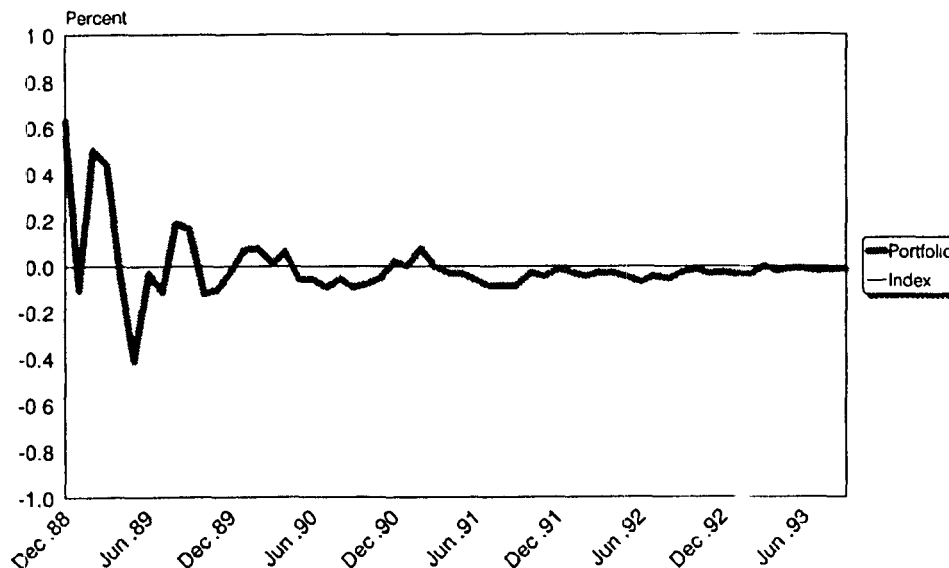
Quantitative Evaluation

	Actual	Benchmark
Last Quarter	2.6%	2.6%
Last 1 year	10.2	10.2
Last 2 years	11.5	11.4
Last 3 years	13.0	12.9
Last 4 years	11.5	11.6
Last 5 years	11.5	11.5
Since Inception (7/88)	11.3	11.3

Recommendations

No action recommended.

LINCOLN CAPITAL MANAGEMENT
Cumulative Tracking Report

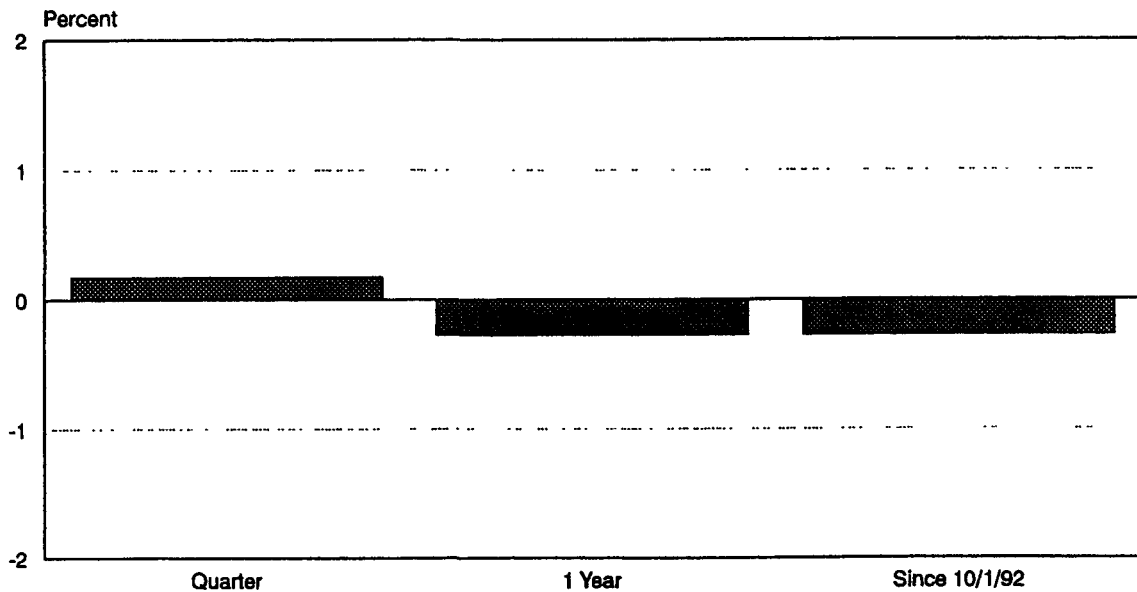


**INTERNATIONAL STOCK MANAGERS
PERIOD ENDING 9/30/93**

Current Managers	Quarter		1 Year		Since 10/1/92		% of Pool	Mkt Value (millions)
	Actual	Bmk	Actual	Bmk	Actual	Bmk		
Baring	6.6%	6.6%					9.9%	\$112.0
Brinson	4.7	6.6					9.5	107.5
State Street	7.1	6.6	26.1	26.4	26.1	26.4	80.6	910.2
Current Aggregate	6.8	6.6	24.3	26.4	24.3	26.4	100.0%	1,129.6
EAFE	6.6		26.4		26.4			

**International Stock Manager Program
Period Ending 9/30/93
Value Added**

Long Term Return Expectation: +0.2% to +0.75%



■ Historical actual

Tab G

COMMITTEE REPORT

DATE: December 7, 1993

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 and action items:

- Review of current strategy.
- Results of annual review sessions with existing managers.
- Termination of outstanding investment commitment to Great Northern Capital Partners, L.P.
- Disposition of one of our resource investment holdings - British Petroleum Royalty Trust.

INFORMATION ITEMS:

1) Review of Current Strategy.

To increase overall portfolio diversification, 15% of the Basic Retirement Funds and 5% of the Post Retirement Fund is allocated to alternative investments. Alternative investments include real estate, private equity 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 \$445 million to eighteen (18) commingled real estate funds.

The private equity investment strategy is to establish and maintain a broadly diversified private equity portfolio comprised of investments that provide diversification by industry type, stage of corporate development and location. To date, the SBI has committed to twenty-five (25) commingled private equity funds for a total commitment of \$639 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 \$138 million to eight (8) commingled oil and gas funds.

2) Results of Annual Review Sessions with Existing Managers.

During the quarter, the Alternative Investment Committee and staff attended annual review sessions with two of the SBI's private equity managers, KKR and Brinson Partners. Overall, the meetings went well and produced no major surprises.

Summaries of the review sessions are included as **Attachments B and C** of this Committee Report.

ACTION ITEMS:

1) Termination of outstanding investment commitment to Great Northern Capital Partners, L.P.

At previous meetings, the SBI approved a commitment of up to \$20 million or 20%, whichever is less, in Great Northern Capital Partners, L.P. provided the fund obtained total commitments of \$100 million or more. In September 1993, Steven G. Rothmeier, a Partner in Great Northern Capital informed SBI staff that he has made the decision to terminate Great Northern Capital Partners.

RECOMMENDATION:

As a result of Mr. Rothmeier's decision to terminate Great Northern Capital Partners, the Committee recommends that the SBI terminate its commitment to Great Northern Capital Partners, L.P.

2) Disposition of British Royalty Trust Holding.

In February 1989 the SBI invested \$25 million in the British Petroleum (BP) Royalty Trust as part of the alternative investment resource allocation. Since inception of the SBI's BP Royalty Trust investment and through September 30, 1993 the SBI has received \$14.4 million in cash distributions and has \$29.5 million in remaining market value for this investment. The SBI's internal rate of return from inception through September 30, 1993 is 16.6%.

Going forward, staff feels that performance of the SBI's BP Royalty Trust investment will likely provide returns below the desired resource investment target return of 3-5 percentage points above inflation.

Specifically, assuming a 3.5% annual inflation rate and 4% per year oil price increase, the BP Royalty Trust investment could provide an annualized internal rate of return as low as 2% through the year 2000.

RECOMMENDATION:

The Committee recommends that the SBI authorize the Executive Director, with assistance from the SBI's legal counsel, to transfer the BP Royalty Trust interest to T. Rowe Price, the SBI's stock distribution manager, for an independent analysis of potential returns and liquidation of the investment.

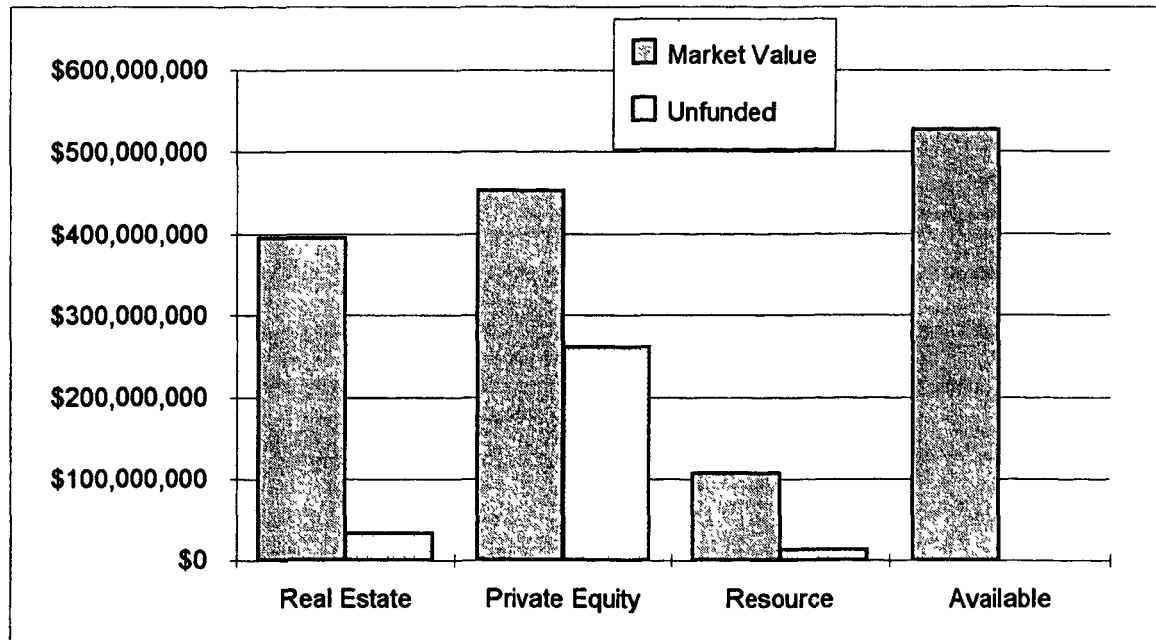
ATTACHMENT A

Minnesota State Board of Investment
Alternative Investments Basic Retirement Fund
 September 30, 1993

Market Value of Basic Retirement Fund (Basic)	\$9,888,996,295
Amount Available For Investment	\$526,887,408

	<i>Current Level</i>	<i>Target Level</i>	<i>Difference</i>
Market Value	\$956,462,036	\$1,483,349,444	\$526,887,408
Market Value + Uncommitted Funds	\$1,264,858,587	\$1,977,799,259	\$712,940,672

Asset Class	Market Value	Unfunded Commitment	Total
Real estate	\$395,592,949 4.0%	\$33,447,646 0.3%	\$429,040,595 4.3%
Private Equity	\$453,012,194 4.6%	\$261,466,470 2.6%	\$714,478,664 7.2%
Resource	\$107,856,893 1.1%	\$13,482,435 0.1%	\$121,339,328 1.2%
Total	\$956,462,036 9.7%	\$308,396,551 3.1%	\$1,264,858,587 12.8%



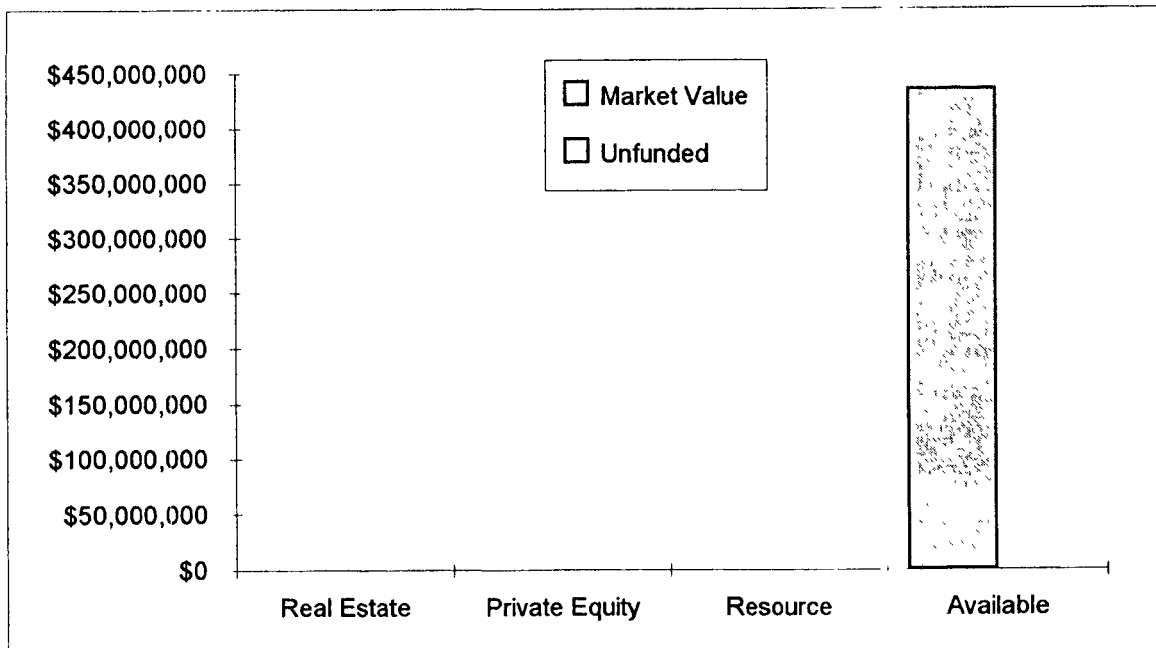
ATTACHMENT A (con't)

Minnesota State Board of Investment
Alternative Investments Post Retirement Fund
 September 30, 1993

Market Value of Post Retirement Fund (Post) \$8,707,035,407
 Amount Available For Investment \$435,351,770

	<i>Current Level</i>	<i>Target Level</i>	<i>Difference</i>
Market Value	\$0	\$435,351,770	\$435,351,770

Asset Class	Market Value	Unfunded Commitment	Total
Real estate	\$0 0.0%	\$0 0.0%	\$0 0.0%
Private Equity	\$0 0.0%	\$0 0.0%	\$0 0.0%
Resource	\$0 0.0%	\$0 0.0%	\$0 0.0%
Total	\$0 0.0%	\$0 0.0%	\$0 0.0%



ATTACHMENT A (con't)
STATE OF MINNESOTA
ALTERNATIVE EQUITY INVESTMENTS
30-Sep-93

	INCEPTION DATE	TOTAL COMMITMENT	FUNDED COMMITMENT	MARKET VALUE	DISTRIBUTIONS	UNFUNDED COMMITMENT	IRR (%)	PERIOD (YEARS)
REAL ESTATE								
AETNA 13354 *	Jun-93	\$2,376,529	\$2,376,529	\$2,376,529	\$0	\$0	0.00	0.4
AETNA	Apr-82	\$40,000,000	\$40,000,000	\$53,275,019	\$0	\$0	2.83	11.5
AEW III	Sep-85	\$20,000,000	\$20,000,000	\$19,504,665	\$971,965	\$0	0.30	8.1
AEW IV	Sep-86	\$17,400,000	\$15,000,000	\$4,003,199	\$829	\$2,400,000	-17.65	7.1
AEW V	Dec-87	\$15,000,000	\$15,000,000	\$10,279,109	\$65,593	\$0	-6.61	5.9
AMERICAN REPUBLIC *	Jan-90	\$1	\$1	\$1	\$0	\$0	0.00	3.8
ARCH STREET CORP. **	Jul-93	\$10,000,000	\$10,000,000	\$10,000,000	\$0	\$0	0.00	0.4
EQUITABLE	Oct-81	\$40,000,000	\$40,000,000	\$67,607,196	\$0	\$0	4.94	12.0
HEITMAN I	Aug-84	\$20,000,000	\$20,000,000	\$13,013,684	\$11,842,633	\$0	3.74	9.2
HEITMAN II	Nov-85	\$30,000,000	\$30,000,000	\$29,181,573	\$11,603,545	\$0	5.08	8.0
HEITMAN III	Feb-87	\$20,000,000	\$20,000,000	\$15,647,130	\$5,554,866	\$0	1.14	6.8
HEITMAN V	Dec-91	\$20,000,000	\$20,000,000	\$21,559,626	\$564,891	\$0	8.82	1.9
LASALLE	Sep-91	\$15,000,000	\$6,019,808	\$6,133,312	\$227,228	\$8,980,192	3.84	2.1
PAINE WEBBER *	Feb-90	\$500,000	\$500,000	\$338,750	\$81,544	\$0	-4.93	3.7
RREEF	May-84	\$75,000,000	\$75,000,000	\$66,509,246	\$21,306,787	\$0	2.35	9.5
TCW III	Aug-85	\$40,000,000	\$40,000,000	\$26,784,327	\$10,900,073	\$0	-0.92	8.2
TCW IV	Nov-86	\$30,000,000	\$30,000,000	\$21,285,683	\$2,399,405	\$0	-4.10	7.0
ZELL	Nov-91	\$50,000,000	\$27,932,546	\$28,093,900	\$120,651	\$22,067,454	1.23	2.0
TOTAL REAL ESTATE		\$445,276,530	\$411,828,884	\$395,592,949	\$65,640,010	\$33,447,646		
PRIVATE EQUITY								
ALLIED	Sep-85	\$5,000,000	\$5,000,000	\$2,952,717	\$3,544,838	\$0	5.38	8.1
BANK FUND III	Oct-92	\$20,000,000	\$7,000,000	\$7,056,417	\$8,372	\$13,000,000	2.03	1.0
BRINSON	May-88	\$5,000,000	\$5,000,000	\$3,977,521	\$2,760,717	\$0	9.15	5.5
BRINSON II	Nov-90	\$20,000,000	\$12,000,000	\$11,031,456	\$6,480,294	\$8,000,000	27.09	3.0
CHURHILL III	Oct-92	\$20,000,000	\$7,000,000	\$6,850,350	\$197,112	\$13,000,000	1.18	1.0
DSV	Apr-85	\$10,000,000	\$10,000,000	\$10,910,760	\$1,336,124	\$0	2.68	8.5
FIRST CENTURY	Dec-84	\$10,000,000	\$9,350,000	\$7,530,506	\$5,073,725	\$650,000	7.75	8.9
GOLDER THOMA III	Oct-87	\$14,000,000	\$11,205,000	\$13,097,969	\$5,676,743	\$2,795,000	17.23	6.0
GOLDER THOMA IV	Apr-93	\$20,000,000	\$0	\$0	\$0	\$20,000,000	0.00	0.0
IAI VENTURES I *	Mar-91	\$500,000	\$500,000	\$443,628	\$243,993	\$0	14.53	2.6
IAI VENTURES II	Jul-90	\$10,000,000	\$6,822,867	\$7,639,826	\$558,532	\$3,177,133	11.33	3.3
IMR PARTNERSHIP	Aug-92	\$30,000,000	\$726,000	\$322,865	\$0	\$29,274,000	-61.99	1.2
INMAN BOWMAN	Jun-85	\$7,500,000	\$7,500,000	\$7,075,771	\$0	\$0	-1.10	8.4
KKR I	Jun-84	\$25,000,000	\$25,000,000	\$49,690,000	\$66,160,000	\$0	30.59	9.4
KKR II	Apr-86	\$18,365,339	\$18,365,339	\$35,060,000	\$23,130,000	\$0	22.39	7.5
KKR III	Nov-87	\$146,634,660	\$138,990,000	\$203,880,000	\$6,450,000	\$7,644,660	11.38	6.0
KKR IV	May-91	\$150,000,000	\$0	\$0	\$0	\$150,000,000	0.00	0.0
MATRIX II	Aug-85	\$10,000,000	\$10,000,000	\$5,872,312	\$12,050,777	\$0	12.16	8.2
MATRIX III	May-90	\$10,000,000	\$7,250,000	\$7,126,012	\$497,220	\$2,750,000	3.63	3.5
NORTHWEST	Jan-84	\$10,000,000	\$10,000,000	\$4,627,386	\$8,043,416	\$0	3.52	9.8
SUMMIT I	Dec-84	\$10,000,000	\$10,000,000	\$3,401,353	\$13,474,117	\$0	10.93	8.9
SUMMIT II	May-88	\$30,000,000	\$27,000,000	\$23,729,201	\$22,563,588	\$3,000,000	23.87	5.5
SUPERIOR	Jun-86	\$6,645,000	\$6,312,750	\$7,621,845	\$2,411,892	\$332,250	10.68	7.4
T. ROWE PRICE	Nov-87	\$20,258,082	\$20,258,082	\$4,752,775	\$18,467,127	\$0	28.15	6.0
ZELL/CHILMARK	Jul-90	\$30,000,000	\$22,156,573	\$28,361,524	\$2,726,766	\$7,843,427	14.58	3.3
TOTAL PRIVATE EQUITY		\$638,903,081	\$377,436,611	\$453,012,194	\$201,855,353	\$261,466,470		
RESOURCES								
AMGO I	Sep-81	\$15,000,000	\$15,000,000	\$6,329,100	\$3,614,536	\$0	-4.35	12.1
AMGO II	Feb-83	\$7,000,000	\$7,000,000	\$7,403,650	\$2,325,453	\$0	4.17	10.7
AMGO IV	May-88	\$12,300,000	\$12,300,000	\$13,996,726	\$1,508,552	\$0	5.88	5.5
AMGO V	May-90	\$16,800,000	\$14,535,147	\$15,609,706	\$3,403,869	\$2,264,853	10.84	3.5
APACHE III	Dec-86	\$30,000,000	\$30,000,000	\$7,682,097	\$34,403,211	\$0	10.47	6.9
B.P.ROYALTY	Feb-89	\$25,000,000	\$25,000,000	\$29,500,000	\$14,433,760	\$0	16.60	4.7
MORGAN OIL&GAS	Aug-88	\$15,000,000	\$13,799,697	\$18,783,312	\$933,078	\$1,200,303	10.36	5.2
SIMMONS OFS	Aug-91	\$17,000,000	\$6,982,721	\$8,552,302	\$10,000	\$10,017,279	19.16	2.2
TOTAL RESOURCES		\$138,100,000	\$124,617,565	\$107,856,893	\$60,632,459	\$13,482,435		
TOTAL PORTFOLIO		\$1,222,279,611	\$913,883,060	\$956,462,036	\$328,127,822	\$308,396,551		

* - Acquired in local police and fire fund consolidation with PERA

** - Acquired from Post Retirement Fund as part of asset allocation transition during FY93

ATTACHMENT B

ANNUAL REVIEW SUMMARY KKR 1984, 1986, 1987 AND 1991 FUNDS September 30, 1993

MANAGER REPRESENTATIVES: Perry Golkin, Nils Brous

SBI ASSETS UNDER MANAGEMENT: \$289 Million

BACKGROUND AND DESCRIPTION:

The KKR 1984, 1986, 1987 and 1991 Funds are managed by Kohlberg, Kravis, Roberts and Company and started in March 1984, December 1986, September 1987 and July 1991, respectively. In total, the SBI has committed \$340 million to the four Funds. As of September 1993, \$182 million of the SBI's total commitment had been funded. Each investment partnership has a twelve year term. The investment focus of KKR is on large management leveraged buyouts. KKR operates out of offices in San Francisco and New York.

QUALITATIVE EVALUATION:

KKR has made 28 investments in the funds in which the SBI has participated. The market value of current investments and cash distributions received by the SBI are 2.1 times the SBI's original investment.

The fourth quarter of 1993 will likely mark the end of the investment period for the 1987 Fund. The 1991 Fund will become operational upon its first investment.

RJR Nabisco confronted several significant events during the last year including the departure of Louis Gerstner to head IBM Corp. Charles Harper, formally Chairman of food retailer Conagra, succeeded Gerstner as Chairman and CEO of RJR.

Also, RJR was significantly affected by the cigarette price war launched by Philip Morris. Stock prices of virtually all companies with branded package goods, particularly tobacco companies, slumped following Philip Morris's announcement.

Going forward, KKR expects that with today's high stock prices future investment opportunities will likely come through acquisitions similar to American Reinsurance Co. KKR purchased American Reinsurance Co. from Aetna Life and Casualty in September of 1992. KKR believes that there is value in the assets of the country's larger companies and they will be active in considering investments generated from large company divestitures.

ATTACHMENT B (con't)

QUANTITATIVE EVALUATION

	FUNDS (\$Million)			
	<u>1984</u>	<u>1986</u>	<u>1987</u>	<u>1991</u>
COMMITMENT:	\$25.00	\$18.37	\$146.63	\$150.00
FUNDED COMMITMENT:	\$25.00	\$18.37	\$138.99	\$0.00
MARKET VALUE OF FUNDED COMMITMENT:	\$49.69	\$35.06	\$203.88	\$0.00
CASH DISTRIBUTIONS:	\$66.16	\$23.13	\$6.45	\$0.00
INCEPTION DATE(S):	Mar. '84	Dec. '85	Oct. '87	May '91
INTERNAL RATE OF RETURN (IRR): (annualized, since inception)	30.59%	23.39%	11.38%	0.0%

**DIVERSIFICATION PROFILE
INVESTMENTS CURRENTLY HELD**

<u>Industry</u>	<u>Company</u>	<u>Value %</u>
Supermarkets	Safeway, Stop & Shop	13.81%
Oil & Gas	Union Texas Petroleum	6.08%
Packaging Company	Owens Illinois	2.73%
Home Building/Industrial Products	Walter Industries	0.00%
Consumer Branded Products	Duracell, RJR Nabisco	42.59%
Media/Publishing	K-III Communications	5.05%
Broadcasting/Cable	Granum, KC Cable	0.54%
Food Service	TW Holdings, Inc.	1.65%
Reinsurance	American RE	6.05%
Specialty Retailing/Auto Parts	AutoZone	12.94%
Printing	Pace Industries, Alden Press	4.14%
Banking	Fleet	4.19%
Leisure/Recreation	The Fairways Group	<u>0.23%</u>
Sub-total		100.00%

ATTACHMENT C

ANNUAL REVIEW SUMMARY BRINSON PARTNERS September 30, 1993

MANAGER REPRESENTATIVES: Marianne Woodward, Bonn French

SBI ASSETS UNDER MANAGEMENT: \$15,000,000

BACKGROUND AND DESCRIPTION:

The Brinson Partners Venture Partnerships I and II are managed by Brinson Partners, an investment advisory spin-off from the First Chicago Corporation. The Funds started in May 1988 and July 1990, respectively, with ten-year terms and optional extensions.

The Venture Partnership Acquisition funds (VPAF) invest exclusively in secondary venture capital limited partnership interests with the objective of earning rates of return superior to that of traditional venture capital investing. Brinson Partners (and its predecessor, First Chicago) has been making venture capital investments, primarily for institutional clients, since 1972.

QUALITATIVE EVALUATION:

VPAF Fund I, incepted in May 1988, is a \$47 million fund to which the SBI has committed \$5.0 million. The fund has made investments in 21 partnerships and has drawn down 100% of the committed capital. The SBI has realized \$2.8 million in cash distributions from Fund I and experienced a 9.1% internal rate of return (IRR) from fund inception. The general partner has indicated that two-thirds of the investments are performing at or above expectations. The average investment in the portfolio is \$2.2 million, and was acquired at an average 17% discount to its carrying value.

VPAF Fund II, incepted in July 1990, is a \$111.1 million fund, of which the SBI has committed \$20 million. The fund now has 14 partnership investments and has drawn down 60% of the committed capital. The SBI has realized \$6.5 million in cash distributions from Fund II and experienced a 27.1% internal rate of return (IRR) from fund inception. The general partner has indicated that two-thirds of the investments are performing above expectations. The average investment in the portfolio is \$4.2 million, and was acquired at an average 32% discount to its carrying value.

Brinson is focusing on two to five year old partnerships for potential acquisition. Their strategy is to invest in fifteen to thirty partnerships per fund with diversity by geography, stage, industry and vintage year. Currently, there appears to be a high degree of interest in the secondary interest area with more competition from other entrants.

ATTACHMENT C (con't)

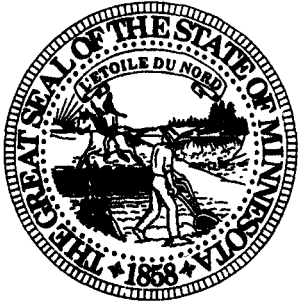
QUANTITATIVE EVALUATION

	<u>FUND I</u>	<u>FUND II</u>
COMMITMENT:	\$5,000,000	\$20,000,000
FUNDED COMMITMENT:	\$5,000,000	\$12,000,000
MARKET VALUE OF FUNDED COMMITMENT:	\$3,977,521	\$11,031,456
CASH DISTRIBUTIONS:	\$2,760,717	\$ 6,480,294
INCEPTION DATE(S):	May 88	July 90
INTERNAL RATE OF RETURN (IRR) (annualized, since inception)	9.15%	27.09%

DIVERSIFICATION PROFILE BY PARTNERSHIP

Fund I		Fund II	
	Commitment		Commitment
Advent V	\$ 4.70 million	ABS Ventures II	\$ 4.80 million
Allied	\$ 0.90	Berry Cash	\$ 0.20
Alta Sub Debt	\$ 4.70	Cap Note Holdings	\$15.30
APA Excelsior II	\$ 4.40	Edison	\$ 1.90
Cornerstone	\$ 1.80	El Dorado	\$ 8.80
Marquette	\$ 3.00	Golder Thoma Fund	\$ 5.90
Nazem & Co. I&II	\$ 0.50	InterWest III	\$ 0.60
NEA I, II, III & IV	\$11.90	Marquette	\$ 1.70
Noro-Moseley	\$ 0.30	Mezzanine Lending Assoc II	\$ 8.50
Oak I & II	\$ 0.70	NEA III & IV	\$ 1.20
O'Donnell & Masur	\$ 7.00	Sevin Rosen II & III	\$ 2.00
RFE II	\$ 0.80	Sherry Lane	\$ 8.40
Rust	\$ 0.70		
Summit	\$ 4.00		
USVP II & III	\$ 1.60		
Total	\$47.00	Total	\$59.30

Tab H



STATE BOARD OF INVESTMENT

Manager Commentaries

Period Ending September 30, 1993

Domestic Stock Managers	1
Domestic Bond Managers	29
International Stock Managers	53

Manager Commentary
Alliance Capital Management L.P.

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$ 110 billion	Actual	5.4%	18.9%
Total Firm Assets Managed in this Discipline	\$ 8 billion	Benchmark	2.4%	8.0%

1. *Past Performance.* Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?

The portfolio was +5.4% in this quarter and year to date is +8.8%. The largest active bet was in the financial sector which had a portfolio weighting of 3x the benchmark weight. This was a successful bet as these stocks benefited from the low interest and inflation rate environment. An overweighting in semi-conductor stocks also contributed positively to performance. Semi-conductor stocks are benefiting from the strong unit volume growth of personal computers while consumer staples have been weak due to intensifying private label competition. Healthcare stocks obviously have been under pressure due to the uncertainty regarding national healthcare reform.

2. *Future Strategy.* What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.

We continue to have large weightings in financial stocks and believe that their multiples are very reasonable given their strong earnings outlook. Most of these companies are selling between 10-12 P/E with good earnings visibility. We will continue to be underweighted in basic industry as we do not foresee the necessary pricing power for these companies to provide earnings momentum. We have recently added to holdings in the broadcast, cable and entertainment industries and now are about double weighted to the benchmark. The recently announced acquisition of Telecommunications by Bell Atlantic is an example of the tremendous opportunities developing in this industry.

Commentary (continued)

- 3. Organizational Issues.** *Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.*

No significant ownership or personnel changes in the last quarter

Accounts gained: Board of Pensions of the Presbyterian Church (USA)
 Mardag Foundation
 Varsity Pension Trust

Accounts lost: Minneapolis Teachers
 City of Saginaw

- 4. Other Comments.** *Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.*

Many public funds are currently lifting their South Africa restrictions because of recent developments in South Africa. This is something the SBI may want to consider.

Staff Comments

Staff will be meeting with Alliance during the next quarter.

Manager Commentary
Brinson Partners, Inc.

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$ 31.0 billion	Actual	2.6%	
Total Firm Assets Managed in this Discipline	\$ 4.1 billion	Benchmark	4.0%	

1. *Past Performance.* Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?

The U.S. equity portfolio that we manage for the SBI is a fully invested portfolio of large, intermediate and small cap stocks.

Our economic expectations of the economy, implicit in our analysis, have not been for an unusually strong rebound but rather for a gradual, consensus-like progress. However, the individual company research has led us to a large number of companies which are undervalued in the marketplace and carry a common characteristic of being sensitive to the changing economic environment. While this economic sensitivity did not play as important of a performance role this quarter, it has added much to the portfolio's performance over the last year and more. Industry weighting decisions, which added little over the last year, hurt the portfolio in this third quarter. Overweights in health, aluminum and paper, as well as underweights in energy, utilities and media hurt performance. Stock selection had little impact this quarter while adding considerable value this year and longer.

2. *Future Strategy.* What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.

We build portfolio strategy primarily around the undervalued individual companies and industries that our analysis uncovers. We continue to overweight the portfolio with companies with significant exposure to economic sensitivity. From an industry standpoint, we are overweight in the financial sector, primarily banks and insurance, which continue to benefit from improving credit conditions and strong net interest margins. We are overweight in basic industries, particularly aluminum and paper, not chemicals. We overweight railroads because of favorable structure changes in industry work rules as well as increased application of technology and airlines due to the improving long term supply/demand balance and pricing environment. We overweight healthcare through a combination of undervalued individual companies. We are underweight in the consumer sector as demographic forces suggest considerably slower earnings growth for these companies in the 90s as opposed to what they experienced in the 80s.

Some of our key holdings are ALCOA, Burlington Northern, Citicorp, Honeywell, Intel, Schering-Plough and Sprint

Commentary (continued)

- 3. Organizational Issues.** *Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.*

No significant ownership or personnel changes occurred in the third quarter. Client assignments changed as follows:

Gained.	3 accounts	\$268 million
Lost	0	0

- 4. Other Comments.** *Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.*

This portfolio's initial funding was 6/30/93.

Staff Comments

No additional comments.

Manager Commentary
Forstmann Leff Associates

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$3,143 million	Actual	6.0%	20.1%
Total Firm Assets Managed in this Discipline	\$1,263 million	Benchmark	2.0%	14.2%

1. **Past Performance.** *Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

As noted above, the portfolio provided an attractive premium to the benchmark for both the quarter and twelve months. This premium was attributable to a combination of successful sector overweight/underweight decisions as well as better than market stock picking, particularly for the twelve month period. For the quarter, active overweights in the better performing *energy* and *interest sensitive* sectors helped to boost returns, while an underweight in the medical area helped to avoid losses. Stock picking within several sectors provided better than the benchmark returns, particularly in the consumer services, technology, energy and interest sensitive areas. Within the generally poor performing medical sector, stock picking also yielded results, as portfolio returns within the area were 2.0% as compared to the benchmark's -4.63% return for all medical stocks in the aggregate.

For the twelve months, overweights in the *technology*, *energy* and *interest sensitive* sectors boosted returns, along with an underweight in the consumer non-durables. Better than the benchmark stock picking within sectors provided attractive gains overall. For example, the portfolio's technology names gained 43.13% in the aggregate, outpacing the benchmark's 26.63% return. Successful strategies included focusing upon those companies which would benefit from the cyclical recovery in technology spending, such as General Motors Corporation Class H. In addition, early in the cycle we were able to identify several companies with value-added services in the networking and software groups. Equally as important was the ability to avoid the earnings disappointments in areas such as the disk drive manufacturers. Within this energy sector we focused upon the natural gas companies and related service providers, seeing opportunities in tight gas supplies relative to gas pricing; a condition which benefited these holdings as this imbalance was corrected in the marketplace. Other areas where stock picking added considerable value included the consumer non-durables, the consumer services, the medical names (where stocks suffered a -7.84% decline vs. a -16.55% for the benchmark), cyclical, cycle sensitive and interest sensitive names. Stock picking for the twelve months among the consumer durables and the utilities was sub-standard, however.

2. **Future Strategy.** *What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

Currently, the portfolio is overweighted in the *consumer durables*, *energy* and *interest sensitive* areas. The consumer non-durables and services and medical areas are underweighted relative to the benchmark. Though the interest sensitive area has been very fruitful for the past several quarters, we anticipate that we are nearing the end of this play, and in the future this overweight may be eliminated. At this point, we remain invested in money center banks whose asset improvement cycles retain some remaining opportunity for gains. Within the durables we are focusing upon the autos, which are seeing strong earnings improvement and should reap the benefits of this cycle for the foreseeable future. We have selected a few medical names with special appeal in this environment, but are not enthusiastic about prospects for the broader medical area in the near term. The domestic consumer may be reviving somewhat at this time, but we are not looking for competitive gains in this area relative to other areas of opportunity in the market. Selected consumer non-durable names represent special situations of value and growth potential, rather than a broad based sector bet, per se.

Commentary (continued)

3. *Organizational Issues.* Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.

During the last quarter, the Firm added to its professional staff Robert A Willis who is serving as the Director of Quantitative Research. Additionally, Sammy Y. Oh joined the Fundamental Research team in July

One account managed under this discipline was lost due to the Plan's increase of international allocation and high payments to retirees.

4. *Other Comments.* Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.

We would be delighted to make a personal presentation before the staff or committees of the SBI to further elaborate upon current or historical strategy or performance.

Staff Comments

Staff will be meeting with Forstmann Leff during the next quarter.

Manager Commentary
Franklin Portfolio Associates Trust

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$ 5.1 billion	Actual	5.1%	29.6%
Total Firm Assets Managed in this Discipline	\$ 374 million	Benchmark	4.3%	20.5%

1. ***Past Performance.** Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

Third Quarter Performance:

The account outperformed its benchmark in the third quarter, year-to-date and latest twelve months. All of the active return in the account came from active factor and industry bets. The most positive factor bets were Success, Earnings-price and Earnings Variability. Total contribution to active return from these three factors was an estimated 86 basis points. Miscellaneous Finance, Electronics and Forest Products were the top three industry group bets which paid off in the quarter, contributing an estimated 43 basis points to active return.

Factor bets that detracted from performance were positive bets on Size and Trading and a negative bet on Foreign exposure. The estimated impact was -22 basis points. Industry bets which hurt performance included negative bets on Telephones, Construction and a positive bet on Health-non-drugs. The total estimated active performance impact was an estimated -65 basis points.

Year-to-date Performance

Year-to-date performance is well ahead of the benchmark. Positive contributions to active returns were made from stock selection as well as factor and industry bets. An estimated 3.5% of active return came from stock specific return. Stock specific return is the active return contribution after removing the effect of factor and industry returns.

The factor bets which contributed to return were Success, Earnings-price, and Earnings Variability - the same factors which contributed to third quarter active returns. The total active contribution was estimated to have been 153 basis points. Gas Utilities, Electronics and Miscellaneous Finance were the industry sectors with the greatest positive contributors to return, an estimated 155 basis points.

A negative bets on Leverage resulted in a -22 basis points impact on performance. Negative industry bets in Telephones and Producer Goods and positive industry bets on Food and Health-non-drugs contributed an estimated -180 basis points impact on performance.

2. ***Future Strategy.** What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

As of 9/30/93 the following active bets existed in the account relative to the benchmark:

A. Factor bets (bets stated as standard deviation from benchmark):

Success	0.21
Earnings/Price	0.37

Commentary (continued)

B Industry Bets (bets stated as percentage deviation from benchmark weight)

Banks	3.51%	Telephones	-3.26%
Leisure	2.37	Producer Goods:	-2.97
Electronics	2.36	Chemicals	-2.35

C. Issue Bets (bets stated as percentage deviation from benchmark weight)

Lincoln National	2.39%	Mobil Corp.	2.22%
McKesson Corp	2.26	Chrysler Corp.	2.09
Enron Oil & Gas	2.19	Williams Cos.	2.12

All active bets in the portfolio are a function of two factors. These are the rank of individual issues and the overall tracking error or risk of the total portfolio relative to the benchmark. The portfolio construction objective is to obtain as high a rank as possible consistent with the tracking objective. We seek to maintain a total tracking error of approximately 3% relative to the benchmark with approximately 70% to 80% of the tracking error resulting from stock bets.

3. **Organizational Issues.** Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.

There have been no significant personnel changes at our firm since the last quarter. No accounts were gained or lost during the quarter.

4. **Other Comments.** Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.

Staff Comments

Staff will be meeting with Franklin during the next quarter.

**Manager Commentary
GeoCapital Corporation**

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$ 1.9 billion	Actual	10.8%	28.5%
Total Firm Assets Managed in this Discipline	\$ 1.8 billion	Benchmark	9.4%	39.6%

1. **Past Performance.** *Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

Performance in the most recent quarter outperformed the benchmark for the first time this year due to significantly improved performance in medical service and products category (consumer non-durable), the financial stocks other than money centers, banks and technology issues. All three areas have been the focus of investment bets by GeoCapital over the total time since inception. During the period from the early 1992 through mid year 1993 overall performance was hurt by significant underperformance of medical stock offsetting continued relative improvement by both financial and technology issues.

2. **Future Strategy.** *What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

We continue to favor these areas over the foreseeable future due to:

- A. The improving yield curve and asset growth (with improved profitability) combined with industry consolidation in the financial area.
- B. The unfolding improvement in business and stock market valuations of small growth issues in both technology and medical service as overall macro strength remains weak and industry selection becomes paramount. With the new proposed health care legislation finally promulgated, medical service companies should have significant potential to grow independently of the overall economy.

Commentary (continued)

3. **Organizational Issues.** Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.

No changes.

State of Maine account lost in the 3rd Quarter 1993

4. **Other Comments.** Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.

N.A.

Staff Comments

Staff will be meeting with GeoCapital during the next quarter.

Manager Commentary
IDS Advisory

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$ 16.8 billion	Actual	3.3%	19.9%
Total Firm Assets Managed in this Discipline	\$ 4.5 billion	Benchmark	4.1%	19.0%

1. ***Past Performance.** Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

During the latest three months, the State of Minnesota account advanced 3.3% versus an increase in the S&P 500 of 2.6%, and an increase in the normal portfolio of 4.1%. During the latest 12 months ended September 30, the State of Minnesota account advanced 19.9% while the S&P 500 was up 13%, and the normal portfolio advanced 19.0%.

Our sector weights have evolved as follows:

	<u>9/30/92</u>	<u>9/30/93</u>
Technology	12.94	6.25
Consumer Stable	7.88	1.69
Consumer Cyclical	20.05	21.16
Utilities	1.19	6.60
Financial Services	10.70	18.80
Energy	1.29	6.40
Industrial Basic	15.92	10.06
Industrial Growth	6.98	6.33
Industrial Cyclical	11.30	12.77
Equity Cash	<u>11.75</u>	<u>9.94</u>
	100.00	100.00

As you will note, during the course of the 12 months we have been overweighted in the consumer cyclical, industrial, basic and industrial cyclical areas. In addition, during the course of the year we have built sizable positions in the financial services sector. Financial services, consumer cyclical, and industrial cyclical have all contributed to our satisfactory returns over the last 12 months. Industrial basics failed to meet our performance expectations.

Low levels of inflation and some recovery in consumer spending and capital spending allowed the consumer cyclical, and "chicken" cyclical sectors to perform well. Declining interest rates and stimulative monetary policies also proved highly beneficial to the financial services sector. The inadequate performance of the industrial basic area can be traced to the fact that the economic recovery was not as robust as forecasters anticipated, and as a result, capacity utilization in basic industry was lower than projected and lower pricing failed to develop.

2. ***Future Strategy.** What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

As you will note from our sector weightings, we continue to maintain significant overweightings in the consumer cyclical, industrial cyclical, financial and basic industrial areas. We also are very underweighted in the consumer stable, energy and utility sectors. We continue to believe that the economy will experience growth of approximately 3 percent, inflation of approximately 3 percent and

Commentary (continued)

relatively stable interest rates at both the short and long end of the curve. If these assumptions are correct, there is no reason why all four sectors cannot outperform the market.

Regarding our substantial underweighting in the consumer stable area, it is our view that pharmaceutical companies, tobacco companies, and alcohol producers are all likely to suffer adversely from the tax regulatory and pricing policies of the Clinton Administration. Therefore, we do not wish to have significant exposure to this sector.

Regarding energy, it is our belief that energy prices are unlikely to experience meaningful increases, and as a result, earnings in the energy sector will prove disappointing relative to expectations.

In the electric utility area, allowable rates of return will continue to move lower, reflecting declining inflation and falling interest rates. Declining allowable rates of return will mean lower earnings growth and minimal dividend increases.

3. **Organizational Issues.** Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.

There have been no significant ownership or personnel changes for IDS Advisory Group or IDS Equity Advisors over the last quarter.

	Accounts Gained		Accounts Lost	
	# of Accts	Assets (\$MM)	# of Accts	Assets (\$MM)
Large Cap Equities	3	73.4	0	0
Fixed Income	5	314.7	0	0
Balanced	3	93.9	0	0

4. **Other Comments.** Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.

Now that the South African restrictions have been lifted from the portfolio, it is our intention to bring the portfolio in line with similar portfolios being managed by IDS Advisory. This may imply a further increase in the basic industrial components of the portfolio as well as the purchase of certain consumer stable stocks such as Colgate and Gillette.

Staff Comments

Staff will meet with IDS during the next quarter.

Manager Commentary
Independence Investment Associates, Inc.

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$ 13.026 bil	Actual	4.4%	18.3%
Total Firm Assets Managed in this Discipline	\$ 6.283 bil	Benchmark	2.6%	14.3%

1. ***Past Performance.** Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

The portfolio we manage for you is well diversified, holds 105 stocks and has a market-like beta. As stock pickers, we look for stocks which are priced lower than their intrinsic value while also exhibiting favorable trends in earnings momentum. We then create a portfolio which has value characteristics, as measured by a P/E lower than the market's as well as growth characteristics as measured by short and long term growth rates being higher than the market's.

The stocks in your portfolio have a P/E ratio of 13.3 times estimated 1994 earnings, well below that of the S&P 500's 18.0 multiple. Meanwhile the 2.7% dividend yield of your portfolio is the same as the yield of the S&P 500. Major purchases during the quarter included Oklahoma Gas & Electric, British Telecom, Merck while issues such as Exxon, Reebok and Morrisson were eliminated. In each case the transactions were driven by our stock valuation discipline. The nature of this discipline and the risk control used to create your portfolio allows that no industry bets be intentionally taken. Furthermore, 78.5% of the variance comes from the selection of the specific stocks. The best performing of these stocks during the quarter included Intel, Citicorp and Equifax while stocks such as Ogden Products, Stratus and Baxter lagged.

2. ***Future Strategy.** What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

Independence will continue its investment philosophy of "any stock which combines cheapness and improving fundamentals is attractive" and its very disciplined investment process in which each stock in an unbiased universe is evaluated to determine the stocks with the best combination of cheapness and improving fundamentals. Your portfolio is then created using the best stocks in a combination designed to match the risk characteristics of the S&P 500 with an approximate 2% tracking error.

Commentary (continued)

3. *Organizational Issues.* Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.

Independence has added one new analyst in the last quarter, Myra Wonish. Myra is a graduate from Dartmouth's Tuck School and recently worked for Andersen Consulting in Washington D.C. as Senior Consultant

4. *Other Comments.* Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.

Staff Comments

Staff will meet with Independence during the next quarter.

Manager Commentary
Investment Advisers, Inc.

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$ 13.2 mm	Actual	9.7%	
Total Firm Assets Managed in this Discipline	\$ 825.0 mm	Benchmark	5.7%	

1. **Past Performance.** *Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

The initial quarter's performance was excellent due to account positioning from issue selection when portfolio was first accepted: overweighting capital goods, technology (especially telecommunications), and selected financials. Additional purchases in these areas added to performance. Individual stocks impacting portfolio favorably this quarter were:

Life USA	+32%	(Financial)	Intel	+27%	(Technology)
ADC Telecommunications	+34%	(Technology)	Tellabs	+30%	(Technology)
Best Buy	+73%	(Consumer)	MGIC	+17%	(Financial)
Green Tree	+29%	(Financial)			

2. **Future Strategy.** *What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

We have reduced our financial weighting and added to the industrial sector, especially in areas of productivity plays. Financials center on S&L and insurance companies selling annuity products. We also have downgraded utilities due to valuation questions. We believe small to medium companies will continue to do well as this is consistent with the overall downsizing themes. We favor industrial vs. consumption, and global presence is important for expanding markets. Valuations have risen in the OTC markets so we have cut back on some of our more volatile holdings.

Commentary (continued)

3. **Organizational Issues.** *Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.*

No changes in ownership; John Phillips left the firm and Livingston Douglas and Mark Simenstad (fixed income) joined the organization. No accounts lost and one account gained in this discipline.

4. **Other Comments.** *Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.*

N/A

Staff Comments

Staff will meet with IAI during the next quarter

Manager Commentary
Jundt Associates, Inc.

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$2,974 million	Actual	2.6%	
Total Firm Assets Managed in this Discipline	\$1,988 million	Benchmark	4.2%	

1. **Past Performance.** *Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

The portfolio managed by Jundt Associates under performed its benchmark by approximately 1.67%. Of this amount, 1.30 or 78% was due to trading (as outlined in page 7 of the Richards & Tierney's 9/30/93 report). The portfolios had to absorb high trading costs in the month of July in order to clone this fund with the rest of our portfolios. Because the process of investing the funds did not occur immediately, the high cash position versus the benchmark also hurt the value added by .44%. Netting these items out of the equation, our overall stock selection and sector bets showed a positive value added.

2. **Future Strategy.** *What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

The cash position has been further reduced to approximately 20%. Our goal is to own America's 30 to 50 fastest growing companies, within the size parameters outlined in our presentation. Our main investment themes continue to be: telecommunications/wireless; computer software; networking; and specialty retailing. Our portfolio decisions are made on a bottom-up approach, and as such, we do not look at the benchmark portfolio as a guide to which industry sectors should be invested in or which particular companies make up those sectors.

Commentary (continued)

3. *Organizational Issues.* Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.

No change since the previously announced resignation of Gail Knappenberger and the hiring of Tom Press

4. *Other Comments.* Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.

In summary, the trading costs experienced in July were the largest factor in our under performing the benchmark and should not be an issue in the future

Staff Comments

Staff will be meeting with Jundt Associates during the next quarter.

**Manager Commentary
Lincoln Capital Management**

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$ 26.5 billion	Actual	0.70%	
Total Firm Assets Managed in this Discipline	\$ 7.6 billion	Benchmark	0.50%	

1. *Past Performance.* Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?

Lincoln's active bets are best defined by its top ten stocks, which represented 48% of the portfolio's weight at 9/30/93. During the quarter, five of these issues outperformed the benchmark while an equal number underperformed. The only easily discernible pattern was a marked underperformance by Lincoln's two GSE's (Fannie Mae and Freddie Mac), where the market fears a negative EPS impact from accelerated prepayments of mortgages.

In industry terms, our overweighting in financial issues was productive despite the poor performance of the GSE's. Selection in the neutrally weighted consumer sector was good. The underweighting in the technology was productive, but a comparable position in cable/cellular was detrimental. Stock selection in most other sectors was productive.

2. *Future Strategy.* What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.

The key bets are essentially the top 10-12 holdings in the portfolio. With regard to industry bets, the key underweighting is in technology and communications, where valuations appear to us extended. Cash reserves, currently at 15%, are likely to be redeployed over the coming months.

Commentary (continued)

3. *Organizational Issues. Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.*

William Goldsborough, Lincoln's retail analyst, announced his resignation from the investment business. He'll return to teaching after some R&R. Bill will continue active investment analysis at Lincoln until his successor is aboard.

Lincoln gained one new equity account (The Presbyterian Church of U S A) during the quarter.

4. *Other Comments. Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.*

Lincoln feels that all is going well.

Staff Comments

No additional comments.

Manager Commentary
Lynch & Mayer, Inc.

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$5,089 million	Actual	6.2%	17.9%
Total Firm Assets Managed in this Discipline	\$4,569 million	Benchmark	6.1%	20.4%

1. *Past Performance.* Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?

Performance is summarized above. Significant over and underweighting sector results are:

<u>Sector</u>		<u>Portfolio Weighting</u>	<u>Portfolio Results</u>	<u>Benchmark Weighting</u>	<u>Benchmark Results</u>
Technology	3Q	33.7	5.3	22.8	9.2
	YTD	27.7	23.4	19.9	33.8
Consumer Non-Durable	3Q	19.9	2.2	32.3	4.6
	YTD	23.5	0.5	31.6	-3.5
Financial	3Q	19.9	14.7	15.6	11.8
	YTD	19.1	21.2	15.9	19.5
Total	3Q		6.2		6.1
	YTD		8.7		10.9

It appears that sector selection was not a significant factor in both the third quarter and year to date returns. The Richards & Tierney analysis shows a 1.21% and 1.84% value added from sector selection for the quarter and year to date results, respectively.

The variance in Lynch & Mayer's year to date performance results compared to the benchmark is due to an environment that favored investment styles other than that employed by the firm. Lynch & Mayer selects stocks based on perceived future growth prospects, positive fundamental change, improved industry environment, corporate restructurings and turnaround situations. The environment during the last nine months favored issues which were cyclical and value-oriented in nature.

2. *Future Strategy.* What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.

We are currently significantly overweighted in technology, which includes a significant concentration in telecommunications and financial services which includes insurance. We have an insignificant overweighting in consumer cyclicals and energy. Additionally, our portfolios relative to the benchmark are underweighted in consumer staples and utilities. Lynch & Mayer is not a "top-down," "sector rotator", or "macro" manager. Our security selections are made on the merits of each individual company, and in each we are looking for a major positive fundamental change in the company which we feel will produce positive earnings surprises (an earnings "acceleration") in coming quarters. Significant change is currently being found in the banking industry where restructuring of operations and loan portfolios continue to create positive earnings surprises from many banks. In another area, quickly developing technological advances, loosening regulatory restrictions and company

Commentary (continued)

restructurings/mergers are creating positive changes for companies in the telecommunications, programming, and cable industries, as well as technology companies which support these industries.

3. **Organizational Issues.** *Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.*

No significant personnel changes have occurred. With respect to ownership a program was implemented pursuant to which designated key employees of Lynch & Mayer, Inc. purchase simulated stock units in the company. Purchases generally will be made through withholding a portion of the designated employees' annual bonus. The Simulated Stock units will increase or decrease in value concurrent with the book value of Lynch & Mayer, Inc. and such units will vest over a three-to-five-year period after payment

Accounts gained (tax-exempt)

University of Pittsburgh Medical Center, Arthur Andersen & Co.; Pioneer Hi-Bred International; Dallas Area Rapid Transit, The Lighthouse, Inc.

Accounts lost(tax-exempt): None

4. **Other Comments.** *Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.*

During the fourth quarter we continue to work with our consultant to assure (1) the production of quarterly benchmarks which meet the criteria we have established, and (2) the appropriateness of the benchmark relative to our investment style.

Staff Comments

Staff will be meeting with Lynch & Mayer during the next quarter.

**Manager Commentary
Oppenheimer Capital**

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$ 28.0 billion	Actual	4.4%	
Total Firm Assets Managed in this Discipline	\$ 12.1 billion	Benchmark	3.5%	

1. *Past Performance.* Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?

A. Performance - Quarter Ended September 30, 1993:

Portfolio returned 4.4% versus the benchmark of 3.5% , outperforming the benchmark by ninety basis points for the third quarter.

B. The key factor contributing to performance was excellent security selection within the following industries: Aerospace, Chemicals, Insurance, Miscellaneous Finance and Retail. Also significant weight variations within these industries were rewarded. Listed below are the top contributors within each industry that significantly affected performance:

Aerospace

General Dynamics
Martin Marietta

Insurance

Progressive
American International Group
AFLAC

Retail

May Department Stores

Chemicals

Hercules
Monsanto

Miscellaneous Finance

Morgan Stanley Group
Salomon
Primerica

2. *Future Strategy.* What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.

Oppenheimer Capital's management style as a firm is categorized as a value manager. Utilizing the firm's disciplines, we focus on identifying superior companies at attractive prices. All of our work is bottom-up, fundamental security analysis. We do not make "active bets" relative to any benchmark, but rather rely on the strength of our security selection process to produce superior returns. Any identifiable active bets are the residual of stock selection, not a conscious attempt to do so.

Commentary (continued)

3. *Organizational Issues.* Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.

In the third quarter we made two additions to our client service staff: Mary Ann Schreiber as a Vice President-Client Service manager working primarily with corporate clients and John Imbriale as a Vice President - Performance Analyst responsible for internal coordination of all performance-related issues and projects. We have hired another Client Service Manager who is expected to join us in the fourth quarter, and are actively searching for an additional Client Service Manager. There were no accounts gained or lost in the third quarter for this investment discipline, however, there were 8 accounts gained (1 Fixed Income, 7 Balanced) totaling \$98 million and 2 small balanced accounts lost, totaling \$12 million, firm-wide.

4. *Other Comments.* Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.

We are working with Security Capital Realty to introduce a private real estate investment trust (REIT) to our clients.

Staff Comments

Staff will be meeting with Oppenheimer during the next quarter.

Manager Commentary
Waddell & Reed Asset Management

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$ 2,509.7 mil	Actual	6.1%	25.7%
Total Firm Assets Managed in this Discipline	\$ 473.5 mil	Benchmark	6.4%	23.5%

1. **Past Performance.** *Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

Our relatively heavy investments in entertainment and media companies such as Blockbuster Entertainment, CBS, and Harcourt General helped our performance. In addition, our investment in American Barrick also performed well as gold exceed \$400 an ounce in July. We have since sold our holdings in American Barrick as the stock price sufficiently discounted the company's improved cash flow prospects. Blockbuster, CBS, and Harcourt General have all gained market share in their respective businesses and have produced earnings growth above consensus expectations.

Our holdings in the natural gas area, Apache and Burlington Resources, have not performed well as crude oil and natural gas commodity prices have declined in a worldwide disinflationary environment.

2. **Future Strategy.** *What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

We continue to have confidence in the growth prospects of our investments in entertainment, media, and financial services. We also expect the consumer to continue the process of reliquifying through the home mortgage market (the last conventional tax shelter) and are holding Countrywide Credit as a vehicle to participate in this growing business segment of originating, refinancing, and servicing mortgage loans. Moreover, we expect market share gains from selective technology companies such as personal computer makers Compaq and Apple, as well as semiconductor producers Intel, Texas Instruments and Micron Technology.

Commentary (continued)

3. *Organizational Issues.* Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.

There were no significant ownership changes at the firm during the quarter. One analyst resigned her position; her responsibilities have been assumed by the Director of Investment Research while we actively seek a replacement. We added an equity trading room assistant during the quarter. No accounts in this discipline were gained or lost.

4. *Other Comments.* Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.

None.

Staff Comments

No additional comments

Manager Commentary
Weiss, Peck & Greer

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$ 13.5 billion	Actual	8.7%	
Total Firm Assets Managed in this Discipline	\$ 1.7 billion	Benchmark	8.2%	

1. *Past Performance.* Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?

This quarter was the opening quarter for the State of Minnesota and WPG Dynamic Growth. On July 1 we took in securities and cash with the remainder of the cash on August 1. By the middle of August we had the portfolio's securities and cash position where desired.

The returns for the BARRA normalized portfolio (predecessor to R&T benchmark) for the quarter was 8.18%.

Throughout the history of Dynamic Growth we have added value by stock selection and to a lesser extent sector allocation. The first quarter for Minnesota is a continuum of that fact. Stock selection added roughly 1.00%, sector selection 0.53% and trading (that which happens during the month) was negative (0.88%). Over time we have added value in trading. The negative was primarily the result of large influx of cash and adjusting position sizes.

2. *Future Strategy.* What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.

The largest bet relative to the benchmark is our commitment to technology, which comprises 95% of the capital goods sector. Our weighting to capital goods is 32.7% versus 27.4% for the benchmark. Our stock selection in this sector over the last quarter was not great (0.42%).

Commentary (continued)

3. *Organizational Issues.* Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.

There were no professional personnel changes at Weiss, Peck & Greer over the last quarter.

In June of 1993 John P. Callaghan joined Dynamic Growth as Portfolio Manager/Analyst as did Candice Eggers as Analyst responsible for communications and technology. This brings the total professional staff to ten.

As of August, we began a Dynamic Growth account for Juilliard School of Music for \$10.0 million. This represents our last customized account for this style for the foreseeable future. Total number of clients is 14.

4. *Other Comments.* Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.

None

Staff Comments

Staff will be meeting with Weiss Peck & Greer during the upcoming quarter

Manager Commentary
BEA Associates

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$19 billion	Actual	3.0%	N/A
Total Firm Assets Managed in this Discipline	\$3.5 billion	Benchmark	2.6%	N/A

1. **Past Performance.** *Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

For the 3rd quarter the portfolio provided a return of 3.09% versus a 2.64%. The 45 basis points of outperformance can be attributed to our decision to purchase perpetual floating rate notes of European and Scandinavian banks and our decision to structure the portfolio to benefit from a flattening of the yield curve. As the prospects for an economic rebound improve in Europe, bank credits will improve. Perpetual floating rate notes of these banks enable us to focus our security risk solely on credit. The markets tendency to buy in anticipation caused these bonds to rally. The yield differential between 2 year/30 year bonds narrowed 53 basis points over the quarter.

2. **Future Strategy.** *What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

We are still long perpetual floating notes as we anticipate continued credit improvement in European banks. We have moved our yield curve strategy further out on the curve as off the run long bonds look cheap currently. We have also increased our mortgage exposure from a modest underweighting to an overweighted position of approximately 7%. This reflects our belief that current coupons are attractive as a result of substantial new issuance resulting from recent rate declines. If rates stabilize these securities should outperform other similar duration bonds.

3. **Organizational Issues.** *Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.*

No personnel changes. No new accounts over \$50 million.

4. **Other Comments.** *Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.*

In October, as per Jeff Geller's recommendation we have instituted a trade that will benefit as long volatility in the Japanese Yen market declines. Attached is the internal memorandum regarding this trade. At the outset \$80 million of exposure was taken on with another \$30 million added subsequently.

Staff Comments

Staff met the portfolio managers on November 8, 1993 and is considering allowing BEA to invest in foreign bonds. Staff will meet the portfolio managers at their offices in December before they are allowed to invest in foreign bonds.

Manager Commentary
Fidelity Management Trust Company

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$20.1 billion	Actual	3.0%	10.9%
Total Firm Assets Managed in this Discipline	\$ 6.1 billion	Benchmark	2.6%	10 2%

1. ***Past Performance.** Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

The portfolio outperformed Salomon Broad Investment-Grade Index by 50 basis points during the quarter. Sector allocations and issuer selection were the primary contributors to total return.

Overweightings in the strong-performing corporate subsectors added to relative returns. Asset-backed benefited from their high quality and credit characteristics while banks continued to experience improved levels of non-performing assets, strong cost control and consolidation.

Underweightings in the poor-performing corporate subsectors also helped performance. Industrials suffered from overwhelming supply and continued evidence of a struggling economy. Proposed rating criteria changes, and supply factors, had a negative impact on utilities.

The portfolio held strong-performing issues across all sectors. A significant number of issues experienced rating upgrades or were placed on the upgrade "watch" list by Moody's and/or Standard and Poor's. These issuers were: Chrysler Financial, Bank of Boston, first Bank System, Chase Manhattan, and Transco.

Chrysler financial and News Corp. performed particularly well. Stronger earnings and improved balance sheets led to tightening spreads for these issuers. RJR, however, performed poorly. Concerns related to potential excise tax increases, event risk restructuring, and pricing pressures, led to spread widening and underperformance.

The portfolio began the quarter with a neutral exposure to mortgage pass-through securities. As spreads widened, we increased the allocation to this sector at relatively attractive levels. The slightly greater allocation during August and September detracted somewhat from relative returns. The mortgage sector continues to suffer from the expectation of higher prepayments in response to the dramatic fall in interest rates.

2. *Future Strategy. What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

Corporates

- Defensive near-term outlook.
- Overweighted on market value basis, yet dollar duration is neutral relative to the Index.
- Focused on lower quality, short duration issues.

Municipals

- Maintain crossover trade (owning high quality municipals versus Treasuries). Target is a 79% yield ratio (municipal/Treasuries) to unwind the trade.

Mortgages

- Overweighted mortgages, in particular current coupon pass-throughs, as spreads reached historically cheap levels.
- Continue to focus on seasoned pass-throughs across all coupons--these issues tend to experience favorable prepayment levels.

Yield Curve

- Neutral yield curve strategy--expect slow flattening of the yield curve to offset the higher yield of the bullet portfolio structure.

3. *Organizational Issues. Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.*

There were no significant "ownership" or personnel changes over the last quarter.

There were no accounts gained or lost in this discipline over the last quarters

4. *Other Comments. Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.*

None Currently

Staff Comments

Staff plans to meet with the portfolio managers sometime during the third quarter

Manager Commentary
Goldman Sachs Asset Management

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$47.672 billion	Actual	2.8%	N/A
Total Firm Assets Managed in this Discipline	\$15.602 billion	Benchmark	2.6%	N/A

- 1. Past Performance.** *Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

The portfolio outperformed the Salomon BIG by 12 b.p. in July, 6 b.p. in August and underperformed by 7 b.p. in September. Total outperformance was 10 b.p. for the entire quarter.

Over the quarter, yield curve exposure accounted for the largest share of the outperformance. Our strategy entailed underweighting the 7- and 10- year parts of the curve and overweighting the 30-year sector; over the quarter, the yield on 30-year cashflows declined 20 b.p. more than yields on 10-year cashflows. This contributed approximately 7 b.p. to the overall performance.

Most of the other sources of incremental return were intra-sector. The exception was our underweighting of the Agency sector. The agency sector outperformed Treasuries by roughly 30 b.p. over the quarter, causing our overall performance to suffer by 2 b.p.

Mortgages provided solid additional returns. By carefully altering our weighting of mortgage passthrough coupons versus those in the index, our mortgage portfolio outperformed the mortgage portion of the index by 17 b.p. over the quarter. This added approximately 5 b.p. to the overall performance.

Corporates added modestly over the quarter as our corporate bonds, with heavy emphasis in the finance, cable and auto sectors, tightened more than corporates in general. This added approximately 2 b.p. to the overall performance.

- 2. Future Strategy.** *What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

Our forecasts of relatively slow economic growth and low inflation cause us to be mildly bullish on the market. Because we see no imminent Fed easing or tightening, we think most of the decline in rates will occur in the long end of the curve.

The duration of the portfolio is 4.27 years versus 4.21 years for the benchmark. The portfolio continues to overweight the 30-year sector and underweight the 7- to 10-year sectors.

Mortgage spreads have returned to their recent wides and we remain overweighted by 5% in the sector. Within the mortgage sector, we have increased our exposure to premium coupon

mortgages (those hit hardest by the fears of surging prepayments) and continue to favor GNMA vs FNMA collateral

In the corporate sector, we continue to overweight the sector on a market value basis (17%) though our exposure to corporate spreads is only modestly greater than the index because we own corporate bonds that are shorter.

Within corporate subsectors:

Overweight Banks (record profitability, improving credit trends); Autos (stronger sales, cost cutting, improved competitiveness); Cable/Media (increased equity investment by higher quality telephone companies, strong cash flow growth).

Underweight phones (increased investment in lower quality cable & cellular) and utilities (increased competitive pressures, rating agency watch listing, hostile regulatory environment).

We are considering establishing a municipal cross-over trade. Municipal spreads are historically wide despite the increase in marginal tax rates and the prospect for dramatically lower supply in 1994.

3. *Organizational Issues.* Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.

During 3rd Quarter 1993:

- There were no changes in the ownership of Goldman Sachs Asset Management.
- GSAM added two professionals to our U.S. Fixed Income portfolio management staff; Erick Buckman, and Stephen Warren.
- GSAM had no professional staff losses.
- GSAM's U.S. fixed income business continued to grow and now totals \$15.6 billion, reflecting increases in separate accounts, U.S. mutual funds and offshore funds.
- Two new U.S. tax-exempt fixed income separate accounts opened. Minnesota SBI and Honeywell.

4. *Other Comments.* Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.

Staff Comments

Staff met with the portfolio manager on August 30, 1993 and plans to meet again sometime in December.

Manager Commentary
Investment Advisers, Inc.

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$13.1 billion	Actual	3.7%	13.6%
Total Firm Assets Managed in this Discipline	\$ 4.5 billion	Benchmark	2.6%	10.2%

1. **Past Performance.** *Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

The portfolio outperformed its benchmark for the quarter and the last year. The portfolio benefited from an overweighting in longer duration assets and an underweighting in the mortgage sector. Our underweighting in corporates subtracted from relative returns. Our issue selection strategy, emphasizing call protection and low coupon mortgages for prepayment protection, also improved performance.

2. **Future Strategy.** *What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

No significant changes in our yield curve or duration strategy. The portfolio remains positioned for a flatter yield curve and falling interest rates. Asset-backed issues are being replaced by non-callable A/Baa rated corporates to improve structure and increase yield. Also, 5% of our long government position is being swapped into long, non-callable corporates for added yield. Duration, yield and average quality all exceed the benchmark.

3. **Organizational Issues.** *Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.*

Two senior fixed income portfolio managers were hired. A copy of their biographies are attached. No fixed income accounts were gained or lost in this discipline during the quarter.

4. **Other Comments.** *Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.*

No additional comments.

Staff Comments

No comment at this time.

Manager Commentary
IDS Advisory Group, Inc.

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$16.8 billion	Actual	4.3%	N/A
Total Firm Assets Managed in this Discipline	\$ 4.4 billion	Benchmark	3.4%	N/A

1. ***Past Performance.** Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

The most significant decision IDS made in the quarter was to maintain the duration of the portfolio at the high end permitted by the investment guidelines. This proved beneficial to the account as interest rates continued to decline in the period. The U.S. Government debt obligations received upon our being hired were reduced by \$6.5 million with the proceeds redirected to Corporate debt. This resulted in reducing the Treasury & Agency component of the portfolio from 72% to 68% of the account. This compares to Treasuries & Agencies comprising 75% of the Lehman Government/Corporate Index. While the account performance comfortably exceeded the benchmark by 1.05 percentage points it would have been slightly better had we been more aggressive in shifting from Treasuries to Corporates.

2. ***Future Strategy.** What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

At the present time our decision to maintain duration at the high end of the permissible range continues. This is because we remain confident that inflation will remain under control into 1994. Interest rates will continue to gradually work lower as investors increasingly accept the below 3% CPI. Also, the positively sloped yield curve in the bond market raises the yield of the portfolio higher than would be the case with a shorter duration posture. In the months ahead the gradual shift to Corporate bonds will continue as opportunities become available.

3. Organizational Issues. Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.

There have been no significant ownership or personnel changes for IDS Advisory Group or IDS Fixed-Income Advisors over the last quarter.

Product	Gains		Losses	
	# of Accounts	Assets (\$MM)	# of Accounts	Assets (\$MM)
Large Cap Equities	3	73.4	0	0
Fixed Income	5	314.7	0	0
Balanced	3	93.9	0	0
International	0	0	0	0
Small Cap Equities	0	0	0	0
Research Core	0	0	0	0
Research Aggressive	0	0	0	0

4. Other Comments. Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.

While in the process of eliminating the Ralston Purina bonds, received upon being hired, that company's debt was put on watch for credit downgrade. This has had no detrimental impact on performance but has resulted in a temporary hold on this issue because the market, in our opinion, had overreacted. We believe a better selling opportunity will become available at which time the remainder of this holding will be sold.

Staff Comments

Staff met with the portfolio manager on November 5, 1993.

Manager Commentary
Lincoln Capital Management Company

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$26,494	Actual	2.6%	10.2%
Total Firm Assets Managed in this Discipline	\$10,136	Benchmark	2.6%	10.2%

1. *Past Performance.* Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?

	<u>3rd Quarter 1993</u>		<u>12 Months Ended 9/30/93</u>	
	Active Strategy	Value Added	Active Strategy	Value Added
Mortgages	Overweighted	-0.03	Overweighted	-0.03
Corporates	Underweighted	0.00%	Underweighted	-0.01%
BBBs	Underweighted	-0.01	Underweighted	-0.03
Asset-Backeds	Overweighted	0.00	Overweighted	+0.0s
Miscellaneous				
Rebalancing Transaction Cost	N/A	-0.01%	N/A	-0.04%
Contribution Transaction Cost	N/A	-0.07	N/A	-0.07
Security Selection	N/A	<u>+0.10</u>	N/A	<u>+0.17</u>
Total		-0.02%		+0.01%

Due to the substantial volatility in the bond market, security selection was the largest source of value added for both periods. Asset-backed issues also performed well relative to other corporates. The largest drag on returns was due to the one time transaction costs associated with the 7/01/93 contribution of \$330 million. The rapid decline in interest rates adversely affected mortgage spreads while the improving economic outlook resulted in a narrowing of BBB spreads.

2. *Future Strategy.* What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.

Future Strategy	Strategy	Rationale
Government Trust Certificates	Overweighted vs Treasuries	1. Government Guarantee 2. Attractive Yield 3. Certain Cash Flow
Asset-Backed	Overweighted vs Treasuries and Corporates	1. High Quality 2. Attractive Yield 3. Low Event Risk 4. Low Prepayment Risk
Current Coupon Mortgages	Overweighted vs Treasuries	1. Agency Quality 2. Low Prepayment Risk 3. Wide Nominal Spreads 4. Deferred Settlement
High Coupon Moderately Seasoned GNMA Mortgages	Overweighted vs Conventionals	1. Lower Prepayment Risk 2. Much Higher Yield

3. *Organizational Issues.* Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.

	Number	Market Value (\$ millions)
Accounts Gained	2	\$110
Accounts Lost	0	

There have been no ownership or personnel changes.

4. *Other Comments.* Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.

There are no issues or developments that would impact the SBI account.

Staff Comments

No comments at this time.

Manager Commentary
Miller, Anderson & Sherrerd

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$29.1 billion	Actual	3.5%	13.8%
Total Firm Assets Managed in this Discipline	\$17.7 billion	Benchmark	2.6%	10.2%

1. **Past Performance.** *Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

The total return of your portfolio for the third quarter of 1993 was 3.1% and for the last twelve months was 13.5% versus 2.6% for the Salomon Broad Index for the third quarter and 10.2% for the last twelve months.

The active bets in your portfolio in the last quarter and for most of the trailing twelve months were a duration that was meaningfully greater than your benchmark, overweighting mortgage-backed and corporate securities relative to the benchmark, underweighting of U.S. Treasury securities, and a barbell strategy that used long maturity zero coupon Treasuries and higher coupon mortgage-backed securities as a package within the portfolio in an attempt to capitalize on the steepness of the yield curve.

For the last year and the last quarter the duration of your portfolio has been at the high end of your permitted range. A year ago, the modified duration of your portfolio was close to 7.0 years versus 4.5 years for the benchmark. As interest rates fell in the second and third quarter, the duration of the portfolio provided significant benefits and, in response to the most recent decline in interest rates, the duration or interest rate risk within the portfolio has been cut back. The duration at the end of the quarter was 5.7 years.

The steepening of the yield curve that took place this year, with short rates falling much more than long rates, was more pronounced than we had anticipated. This steepening caused long zero coupons and mortgage-backed securities to underperform our expectations. The incorporation of the barbell strategy within your portfolio detracted from investment results.

The corporate securities within your portfolio were largely call-free and had intermediate maturity orientations. These securities benefited from a spread tightening and the reshaping of the yield curve and their overweighting within the portfolio added to overall investment results.

2. **Future Strategy.** *What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

The active bets at present within your portfolio continue to be an exposure to the yield curve flattening and an overweighting of mortgage-backed and corporate securities.

The duration of the portfolio has been reduced and we now anticipate that the portfolio is largely neutral with regard to general interest rate movements. However, it is still sensitive to

a reshaping of the yield curve. We anticipate over the next several quarters that the yield curve will continue to flatten and that our remaining exposure to long zero coupon securities will serve you well

We remain overweight in mortgage-backed and corporate securities. In the case of mortgage securities, we have shifted our emphasis to high coupon securities. For these securities rapid prepayment is expected and we believe investors are well compensated for the prepayment risk they bear. These are viewed as very attractive holdings if rates are stable or rise moderately.

With regard to corporates, we view them as attractive and anticipate that issuers will continue to reduce leverage, rebuild balance sheets, and improve credit quality.

Both mortgage and corporate securities should provide return advantages in a period of relatively stable interest rates.

3. *Organizational Issues.* Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.

At the end of the year we will admit to the partnership Steve Esser and Scott Richard, both members of the fixed income team, and Marna Whittington, who manages our business core. In addition, at the end of the year Tom Beach, a member of the equity team, and Herb Evert, a member of the business core, will be retiring from the partnership.

During the last quarter, we gained 5 new accounts. No accounts were lost during the period.

4. *Other Comments.* Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.

Real interest rates have been crucial to our judgments about duration and the appropriate level of interest rate sensitivity to incorporate within our fixed income portfolios. Over the last several years the level of real interest rates within the U.S. economy has been high enough to retard growth, suppress inflation, and provide for high real returns to domestic fixed income investors. As nominally real rates have declined over the last several quarters, we have been reducing the duration and commensurate interest rate risk within portfolios

Our research also shows that real rates of interest are an important determinant of returns in other industrialized economies. Real interest rates in the U.S. have fallen much more rapidly than in other major fixed income markets and, where permitted, we have begun to move monies from our domestic portfolios into the international fixed income arena. This has translated into an approximate 18% commitment to the non-dollar fixed income area in our fully discretionary portfolios. We think this movement towards the international markets will reduce the volatility of our portfolios and at the same time raise their expected returns. We believe the inclusion of non-dollar securities in core fixed income portfolios will serve our clients well and we anticipate discussing this matter with you in the near future.

Staff Comments

Staff met with the portfolio manager on November 10, 1993 and is considering allowing Miller to invest in foreign bonds. Staff will meet Miller at their offices in December before they are allowed to invest in the securities.

Manager Commentary
Standish, Ayer & Wood

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$21,439 Million	Actual	3.0%	--
Total Firm Assets Managed in this Discipline	\$10,847 Million	Benchmark	2.6%	--

1. ***Past Performance.** Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

We estimate the transition to our management cost the account approximately 30 basis points in July.

Sharp underweighting in Treasuries and corresponding overweighting in corporates had little effect.

We underperformed by 23 basis points in mortgages, but this compared to a 50 b.p. underperformance within index - (net +27 b.p.) Our weighting was lower (21% vs. 29%) and our lower coupons were better.

Curve management +32 b.p.

- Superior roll down the curve +25 b.p.
- Long zero's outperformed long coupons +45 b.p.
- We were underweighted in long bonds -38 b.p.

2. ***Future Strategy.** What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

We will continue to be sharply underweight in Treasuries which is inherent in our investment style. Our largest overweighting will continue to be in corporate bonds and we expect to increase commitments in this area taking advantage of wider year-end spreads. Our concentration will continue to be in BBBs which appear more attractive than the higher quality categories. Our mortgage commitments will continue to be in the lower coupons and we may increase this sector but not until we see rapid prepayments subsiding.

3. **Organizational Issues.** *Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.*

No significant ownership or personnel changes in past quarter.

Active Core Accounts Gained

Outboard Marine
Columbia Gas

Active Core Accounts Lost

None

4. **Other Comments.** *Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.*

Two new bond research analysts hired:

William Talbot - International Bonds
John McNichols - Domestic Corporate Bonds

Staff Comments

Staff met with the portfolio manager on October 5, 1993 and is considering allowing Standish to invest in foreign bonds. Staff will meet the foreign bond portfolio managers at their offices in December before they are allowed to invest in foreign bonds

Manager Commentary
TCW Asset Management

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$44,755 Million	Actual	2.9%	N/A
Total Firm Assets Managed in this Discipline	\$ 7,841 Million	Benchmark	0.9%	N/A

1. *Past Performance. Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

We have managed the Minnesota State Board Mortgage-Backed portfolio for only this one quarter. Returns were 2.68% versus .91% for the Salomon Mortgage Index and .96% for the Lehman Mortgage Index. We do not make active bets in the portfolios we manage. Rather, we employ a bottom up methodology designed to deliver all the income of the mortgage sector while minimizing the negative dynamics of prepayments. This involves building call protection into portfolios during the current refinancing cycle. This call protection worked very well as interest rates fell during the quarter and generic mortgage pass-throughs exhibited enormous negative convexity. We are using CMOs and certain call protected pass-throughs to achieve optimal portfolio structure.

2. *Future Strategy. What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

Again, we do not make active bets. The portfolio is structured to do well regardless of the direction of interest rates. We have more yield than the mortgage indices, roughly equivalent duration, and greater convexity. This portfolio structure is in place because it should result in incremental return over the vast majority of future scenarios.

3. *Organizational Issues. Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.*

There were no ownership changes during the quarter. We hired two senior professionals in our mortgage group. Fred Horton, Senior Vice President and Jennifer Jacob, Vice President. Both bring more than 10 years experience successfully managing significant mortgage-backed portfolios. We gained three accounts and lost none during the quarter in our core MBS strategy. Accounts gained totaled \$325 million.

4. *Other Comments. Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.*

Mortgages as a sector have underperformed very significantly other high grade bonds. This has provided an outstanding opportunity as the underperformance has been over done. It is

possible to invest portfolios with 50% this risk and 150% of the prospective return of Government/Corporate portfolios. Funds should act now to allocate incremental assets to MBS and thereby substantially improve this fixed income mix.

Staff Comments

Contrary to what TCW says, they do make active bets in the portfolio. For instance, the benchmark is 100 percent conventional mortgages while their portfolio has only 20 percent conventional mortgages. The remainder of their portfolio is a variety of different types of CMOs. Staff met with the portfolio managers on November 1, 1993.

Manager Commentary
Western Asset Management

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$10,931 Million	Actual	3.9%	14.8%
Total Firm Assets Managed in this Discipline	\$ 6,473 Million	Benchmark	2.6%	10.2%

1. *Past Performance. Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

We thought that:

- The economy's limited growth potential would allow interest rates to decline.
- Good inflation fundamentals and modest growth would cause intermediate and long-term rates to fall relative to short-term rates.
- An environment of benign growth and low inflation would keep Fed policy on hold.
- An improving economic outlook and balance sheet de-leveraging would lead to a tightening of corporate spreads. Dynamic, capital-intensive industries with growth prospects looked attractive.
- Lower interest rates and a flatter yield curve would cause prepayments to rise and mortgage-backed spreads to widen.
- Municipal bond prices had been artificially depressed by heavy issuance designed to deface existing issues, while the prospects of higher tax rates increased their appeal generically.

Therefore, we:

- Maintained a longer-than-normal duration posture throughout the quarter.
- Continued to hold a "barbell" maturity exposure, emphasizing long maturities and enhanced-yielding cash.
- Used long positions in Eurodollar derivatives, where allowed, to benefit from a convergence between forward and spot rates.
- Held a substantial but somewhat reduced overweighting to non-callable corporate securities, emphasizing issues at the lower end of the investment quality scale.
- Underweighted mortgage-backed securities, while emphasizing low-coupon and non-traditional mortgages with less prepayment risk.
- Added a modest position in high-quality municipal bonds, where allowed, with the expectation that a relative price shift in favor of munis would more than compensate for their marginally lower yields.

And the results:

- Our interest rate posture made a significant contribution to performance, since intermediate and long-term interest rates fell substantially.
- Intermediate and long-term rates fell while cash yields remained steady, so this contributed substantially to performance.
- Forward rates did indeed converge to spot rates, thus contributing to performance.
- Corporate holdings in general made a positive contribution to performance.
- This was a definite plus, as lower interest rates sparked higher prepayments, and our choices of low-coupon and non-traditional mortgages outperformed the broad mortgage sector.
- This had no appreciable impact on performance, as muni yields remained around 85-90% of treasury yields.

2. *Future Strategy. What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

Investment Themes

Good inflation fundamentals and the Administration's bias toward restrictive policies should force investors to lower further their inflation expectations, allowing long-term interest rates to decline relative to short-term rates.

Moderate growth and ongoing corporate balance sheet de-leveraging should lead to a gradual narrowing of corporate spreads. Dynamic, capital-intensive industries with growth prospects look attractive. Labor-intensive industries with unrealistic asset/liability assumptions face downward earnings pressures.

Traditional mortgage-backed issues remain vulnerable to prepayment risk and a flatter yield curve.

Heavy supply of municipal bonds to support defeasance operations has depressed prices, but higher tax rates should eventually increase their appeal.

Recessionary conditions abroad should lead to lower foreign interest rates and a stronger dollar.

Investment Strategies

Maintain a longer-than-normal duration. Barbell maturities to benefit from a flattening of the yield curve, using low-coupon IOs to enhance overall yield. Moderate interest rate positions as long rates move to lower levels.

Maintain an overweight position in non-callable corporates, with emphasis on selected industrial issues. De-emphasize utility and cable sectors, where competitive and/or regulatory pressures are mounting. Pare back corporate exposure somewhat in recognition of sluggish growth and heightened competitive pressures.

Underweight the sector, emphasizing low-coupon, non-traditional and packaged commercial mortgage-backed securities to minimize prepayment risk.

Gain exposure to municipal bonds for their appreciation potential, while minimizing sector credit risk.

Maintain a modest exposure, where allowed, to European and Japanese bonds, but minimize currency risk and hedging costs.

- 3. *Organizational Issues.*** Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.

Personnel Additions:

Trudie D. Whithead, Senior Research Analyst

Accounts Gained:

Kentucky Workers Compensation

- 4. *Other Comments.*** Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.

Staff Comments

Staff met with Western's staff on November 1, 1993. Staff is considering allowing foreign bonds in Western's portfolio.

Manager Commentary
Baring Investment Services

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$ 8,600 mil.	Actual	6.7%	
Total Firm Assets Managed in this Discipline	\$ 770 mil.	Benchmark	6.6%	

1. *Past Performance.* Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?

The following figures show a breakdown of the performance of your portfolio for the quarter ended 30th September, 1993:

	Total Return	Currency	Market Weighting	Tracking Error
	%	%	%	%
Minnesota State Board of Investment	7.8	0.5	7.1	0.2
MSCI EAFE (Net Dividends) Index	6.6	0.2	6.4	-
Relative Return	1.1	0.3	0.7	0.2

The relative contribution to return for all categories were positive. The positive currency performance came primarily from the portfolio's low exposure to the Japanese Yen and overweighting of the currencies of the South East Asian economies. This was partly offset by having little exposure to the Continental European currencies.

Relative contribution from the market weighting decisions provided an outperformance of 0.7% with the underweight position to Japan having the biggest impact. Singapore and Malaysia, where the portfolio is substantially exposed, also added to the relative outperformance. Both these markets were in the top five best performing EAFE constituent markets in local currency terms. These relative gains were partially offset by exposure to Korea.

The positive tracking error arose from marginally higher income from Singapore and Thailand than from the net dividend indices.

2. *Future Strategy.* What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.

The main features of your portfolio are:

Substantial exposure to South East Asia;
Underweight in Japan;
Marginally underweight in Europe, but overweight in France;
20.5% of the portfolio hedged back into US Dollars from Continental European currencies.

Our strategy is to continue to emphasise growth in the portfolio. Asian stock markets remain very attractive with their high levels of economic and profit growth whilst selling at reasonable valuations. Growth is being driven by expanding inter-regional trade, domestic infrastructure investment, and high levels of capital spending. Hong Kong and Korea stand out as being particularly attractive and stand to gain substantially from the development of China. We are maintaining our low weighting in Japan

Commentary (continued)

as the economy continues to deteriorate despite Government efforts to bolster growth through fiscal stimulation. Earnings forecasts continue to be downgraded and the market continues to discount a substantial recovery in profits which we believe will not materialise.

The European economies are now in recession and our focus is primarily on France where we believe the economy and stock market are particularly sensitive to lower interest rates. We believe that the low inflation levels in France will permit interest rates to fall faster and further than most other countries in Europe, providing a boost to the economy and the stock market. The majority of the European currency exposure of your portfolios is hedged back into the US Dollar as we believe that the lower interest rates we are forecasting in Europe will lead to European currencies depreciating against the US Dollar.

3. **Organizational Issues.** *Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.*

New Active/Passive Clients. Florida State Board of Administration; Whearton Trust, Knight Ridder; Ryder Systems.

Clients Lost: None.

Terry Mahoney who led our Latin American equity team in Boston has resigned from Barings for personal reasons; namely that both Terry and his wife wish to live and work in Hong Kong. Miren Etcheverry, the senior portfolio manager and integral member of the team, will now assume responsibility for our Latin American process.

We are pleased to announce the expansion of our Hong Kong office with the recent addition of Martin Paling, Tom Walker, and John Payne. This means we now have ten investment professionals located in Hong Kong. The decision to build our team not only reflects the growth of our business but more importantly the growth in size and number of markets in the Asia Pacific Region.

4. **Other Comments.** *Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.*

None

Staff Comments

No additional comments.

Manager Commentary
Brinson Partners, Inc.

Period Ending:	9/30/93	Returns	Qtr.	Year
Total Firm Assets Under Management	\$ 31.0 billion	Actual	4.7%	
Total Firm Assets Managed in this Discipline	\$ 5.0 billion	Benchmark	6.6%	

1. ***Past Performance.** Summarize your performance over the last quarter and year. Specifically, what active bets did you make relative to your benchmark? Which of these bets worked/did not work and why?*

We manage market and currency exposures for the SBI in this non-U.S. equity portfolio. Over the last quarter and year, our basic strategies have been to hold cash as a reflection of the overpriced nature of non-U.S. equity markets in general, underweight the Japanese market due to its particular overvalued nature, overweight a few markets, namely -- U.K., France, Canada, Netherlands, Australia, and Belgium and to hedge considerable currency risk away from Japan and continental Europe to North American currencies.

Over the last quarter and year, the cash holding hurt performance as many markets have appreciated. The market selection decisions had little impact this quarter although the underweight in Japan hurt as it rose sharply earlier this year. The decision to protect the currency exposure in continental Europe hurt somewhat this quarter (particularly as the Canadian dollar fell versus most currencies) but helped tremendously over the last year. Hedging yen was slightly helpful this quarter but harmful this year as the yen has risen to considerably overvalued levels.

2. ***Future Strategy.** What active bets are in place at the present time relative to your benchmark? Summarize the rationale for making these active bets.*

In the third quarter we made minor adjustments to market and currency strategies in the SBI portfolio. We added 2% to the cash holding bringing it to the top of our normal range of 0-10%. This is a reflection of the strong rise in non-U.S. equity markets this year without fundamental improvements in earnings. We are 10% underweight in the Japanese stock market as the price has risen far beyond value, particularly in light of the languishing economic condition made worse by the rapid rise of the yen. We continue to find the best value in Australia, Canada and the Netherlands and, to a lesser degree, the U.K., Belgium, Spain and New Zealand. We continue to underweight the severely overvalued Japanese yen as well as most of continental European currencies which have fallen this year but, are still overvalued. Offsetting these underweights are small overweights in Australia and New Zealand dollars, Swedish krona, Italian lira and Spanish peseta and large overweights in U.S. and Canadian dollars.

Commentary (continued)

3. **Organizational Issues.** Describe any significant ownership or personnel changes at the firm over the last quarter. List accounts gained and lost in this discipline over the same time period.

No significant ownership or personnel changes occurred in the third quarter Client assignments changed as follows:

Gained	4 accounts	\$49 million
Lost	0	0

4. **Other Comments.** Highlight any other issues/events that are pertinent to the management of the SBI account at your firm.

This portfolio's initial funding was 3/31/93, with added cash flow on 9/30/93

Staff Comments

No additional comments