MINNESOTA STATE BOARD OF INVESTMENT MEETING
December 18, 1991
&
INVESTMENT ADVISORY COUNCIL MEETING
December 17, 1991

AGENDA
STATE BOARD OF INVESTMENT
MEETING
Wednesday, December 18, 1991
8:30 A.M. - Room 125
State Capitol
Saint Paul

	TAB
1. Approval of Minutes of September 11, 1991 Meeting	
2. Report from the Executive Director (H. Bicker)	
A. Quarterly Investment Review (July 1 - Sept. 30, 1991)	A
B. Portfolio Statistics (Sept. 30, 1991)	B
C. Administrative Report	C
1. Budget Report	
2. Travel Report	
3. Post Retirement Fund Benefit Increase	
3. Report from the SBI Administrative Committee (M. McGrath)	D
A. FY 91 Audit Results	
B. FY 91 Annual Report Draft	
C. Up-Coming Client Conference	
D. Management Options for the Environmental Trust Fund	
E. Search Committee for Consultant RFP	
F. Contract Extension for Dedicated Bond Portfolio Software	
G. SBI Bill for 1992 Session	
4. Proposed Legislation from Retirement Systems Regarding the Post Fund (Executive Directors of PERA, MSRS, TRA)	
5. Report from the Equity Manager Search Committee (P. Sausen)	E
6. Reports from the Investment Advisory Council (J. Yeomans)	
A. Asset Allocation Committee	F
1. Assigned Risk Plan Policy Statement	
2. International Equity Program Implementation Plan	
B. Stock and Bond Manager Committee	G
1. Review of Manager Performance	
2. Request for Allocation Guidelines	
3. Results of 1991-94 GIC Bid	
C. Alternative Investment Committee	H
1. Report on Fund Manager Annual Reviews	
2. Status of Jacobs' IMR Fund	
3. Update on KKR	

Minutes
State Board of Investment
September 11, 1991

The State Board of Investment (SBI) met at 10:10 A.M. on Wednesday, September 11, 1991 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 Attorney General Hubert H. Humphrey III were present.

Executive Director's Investment Report

Mr. Bicker, Executive Director, referred Board members to Tab A of the meeting materials. He stated that the Basic Retirement Funds have exceeded the inflation rate over the last five years and slightly underperformed the composite index and the median fund over the 5 year period. He added that the Post Retirement Fund provided an annualized benefit increase of 6.7% over the last 5 year period.

Mr. Bicker reported that the Basic Funds decreased in value by 0.6% for the quarter ending June 30, 1991, due to a negative cash flow of $50 million. He stated that the asset mix remained essentially unchanged for the quarter. He reported that the Basic Funds slightly underperformed both targets for the quarter, underperformed the median balanced fund for the 3 year period, and approximately matched the median fund for the 5 year period ending June 30, 1991. Mr. Bicker added that both the stock and bond segments slightly underperformed their respective targets for the year.

Mr. Bicker then directed the Board to the Post Retirement summary. He stated that the Post Fund increased in value by 3.6% during the second quarter, primarily due to positive cash flow. He explained that the 6.6% of assets in cash is higher than normal due to the retirement of teachers at fiscal year end. Mr. Bicker then reported that as of June 30, 1991, the State Board of Investment was responsible for over $17 billion in assets.

Executive Director's Administrative Report

Mr. Bicker referred Board members to the budget and travel reports in the meeting materials. He reminded the Board members that at the June 1991 meeting they requested that he provide them with recommendations for the three vacancies on the South Africa Task Force. He continued by naming the individuals he was recommending: representing the retirement funds is Elton Erdahl, Executive Director of the Teachers Retirement Fund; representing the employees is Bernard Brommer, President of the AFL-CIO; and representing the private sector is Peter J. Kiedrowski, Executive Vice President at Norwest Bank. Mr. Dayton moved approval of Mr. Bicker's recommendations. Mr. Humphrey seconded. The motion was approved.

Mr. Carlson then asked for a motion to approve the minutes of the June 11, 1991 meeting. Mr. McGrath moved approval with Ms. Growe seconding the motion. The motion carried.

Mr. Bicker then moved on to the recommendations for the two current vacancies on the Investment Advisory Council. He summarized the process used by the IAC Member Selection Committee to select the potential candidates. He said that the Committee recommended Michael Troutman, Sr. Manager of Investment Programs at the Evangelical Lutheran Church in America and Peter J. Kiedrowski, Executive Vice President at Norwest Bank. Mr. Humphrey moved approval of the committee's recommendations. Mr. Dayton seconded the motion. The motion was approved.

Investment Advisory Council Committee Reports
Proxy Committee

Mr. Sausen discussed two recommendations of the Proxy Committee regarding the Valdez Principles. He reported that the first recommendation was that the SBI should continue to vote its proxies in support of the Valdez Principles and related environmental issues and that the second recommendation stated that the Proxy Committee should review this issue after the Coalition for Environmentally Responsible Economies (CERES) completes its pending revision of the Principles. He said that when the Principles have been finalized, the Committee should re-examine its voting policy and re-visit the issue of becoming a signator of the Principles. Mr. Dayton moved approval of the Committee's recommendations. Mr. McGrath seconded. The motion was approved.

Equity, Fixed Income, and Alternative Investment Committees

Ms. Yeomans stated that in the interest of time, since the reports from the three committees contained information items only, she would like to defer making a detailed presentation. The Board members agreed.

Asset Allocation Proposal

Ms. Yeomans then moved on to the asset allocation proposal for the Basic Retirement Funds. She directed Board members to Tab D of the meeting materials. She stated that the proposal has the approval of the full Investment Advisory Council and turned the presentation over to Mr. Bicker.

Mr. Bicker stated that asset allocation overwhelms all other policy and implementation decisions. He quickly reviewed the process used by the SBI in establishing its asset allocation and reported that the SBI's current asset allocation is 60% stocks, 25% bonds and 15% alternative assets.

Mr. Bicker recapped the performance history of the Basic Funds. He stated that in 1984 the value of the Basics was $3.1 billion. During the period from 1984 -1991, contributions were approximately $258 million. He explained that the risk-free rate (i.e.

90 Day Treasury Bills) would have generated $2.6 billion over this same period. He stated that the SBI's more aggressive asset allocation policy has generated $1.6 billion of additional return for the fund. He then reported the negative $65 million from asset management was due for the most part, to the active manager's small capitalization bias. He added that the index fund generated a negative $20 million relative to its benchmark, which was expected and was due to tracking error and trading and management costs. He reported that the active managers had added $9 million to their benchmarks over this period and that rebalancing activity had added $38 million to the Funds. These figures all resulted in a market value for the Basic Funds of $7.6 billion as of March 1991.

Mr. McGrath inquired whether the $9 million generated by the active managers was from current managers or all managers since inception. Mr. Bicker responded that it was from every manager retained during that period. Mr. Humphrey requested clarification of the $258 million in contributions. Mr. Bicker stated that the $258 million was correct for the Basics as a net figure. He added that there has been more than $258 million generated by employees contributions, but the majority of it went into the Post Retirement Fund due to retirements during the period.

Ms. Lehman then presented the new asset allocation proposal for the Basic Retirement Funds. (See Exhibit A). She explained the linked relationship between performance goals and asset allocation. She reviewed the current performance goals for the Basic Funds which are: to be in the top half of the TUCS Universe over a 5 year period and to exceed the composite index over a 5 year period. Ms. Lehman next stated that the new proposal goal is to be in the top third of the TUCS Universe and noted that this would require the Basic Funds to be slightly more aggressive.

Ms. Lehman reviewed the Basic Funds' TUCS rankings over the last five years. She stated that the SBI hopes to provide additional returns without dramatically increasing the level of risk by making three changes to the asset allocation policy. The first change is to increase alternative assets from the current 15% to 20%. Mr. Carlson requested a breakdown of the categories of alternative investments with an explanation of what staff wants to change. Mr. Bicker responded by stating that staff does not anticipate doing any real estate deals for quite some time but that staff wants to have a flexible allocation. He added that in venture capital and oil and gas, staff has seen good performance and wishes to continue looking for attractive opportunities.

A lengthy discussion followed between Mr. Dayton and Mr. Bicker on the appropriateness of using market value versus cost to calculate percentages for asset allocation purposes and how funded and unfunded commitments were counted. Mr. Bicker stated that staff believes that using market value is the most appropriate way to measure the risk of the entire portfolio. It also gives staff an opportunity to explain where committed dollars go. He added that he would be more than pleased to report to the Board that the SBI went over its allocation because the area had performed so well.

Ms. Growe requested that all the percentage figures be compared consistently, either with or without unfunded commitments. Mr. Bicker reported that with unfunded

commitments, real estate would be approximately 7.5%, oil and gas would be about 3.5%, private equity would be 5.5 to 6.0%, making the total for alternative assets currently around 17.0%. Ms. Growe asked Ms. Lehman to comment on staffing requirements for the alternative asset area. Ms. Lehman stated that the SBI has two full-time professionals assigned to the area, which is significantly above what many other pension plans have.

In response to a question from Ms. Growe, Ms. Yeomans stated that private corporations average 5-10% of their assets in the alternative investment area. Ms. Growe asked if this level was due to a more cautious view on their part. Ms. Yeomans responded that it varies in different situations. She added that the IAC wants the Board to be aware that these types of investments are very long-term in nature.

Mr. Humphrey expressed concern over the less liquid nature of the alternative assets. He asked if the SBI would have to rebalance and sell current investments if the Board did not adopt the new asset allocation proposal. Mr. Bicker stated that rebalancing would be necessary but that it would require not making any new commitments for 3-4 years rather than selling current investments.

In response to a question from Mr. Dayton regarding different returns in the alternative investment area by Richards & Tierney, Mr. Bicker reported that the consultant did not have all the valuations for June 30, 1991 thereby causing the majority of the difference. Mr. Richards confirmed Mr. Bicker's explanation.

Ms. Growe asked who, besides KKR, have been good performers in this area. Mr. Bicker confirmed that KKR has done very well and that some oil and gas investments have also done well. He reminded the Board of the immaturity of most of the venture capital investments. Ms. Growe added that she does not have the same level of optimism about this area as others have. In response to a question from Mr. Carlson, Mr. Bicker stated that venture capital funds usually take 7-9 years to mature and partnerships have 10-15 year terms.

Returning to the presentation of the new asset allocation proposal, Ms. Lehman stated that the second change to the policy would be to add an international stock component to the portfolio in the amount of 10%. She said this would mean substituting 10% of the domestic portfolio for 10% in international stocks.

In response to several questions from Mr. Carlson, Ms. Lehman replied that this move would require the hiring of additional money managers. She added that 10% of the Basic Funds would amount to roughly $700 million for international investments. Ms. Lehman stated that if that allocation were approved, staff would work with the IAC and consultant to present a plan for implementation for the Board's approval at their next meeting. Ms. Growe inquired whether the plan was for active or passive management of this strategy. Mr. Bicker stated that those are two alternatives under consideration. Ms. Growe asked what kind of returns international stocks have provided. Ms. Lehman reported that over the last 20 years U.S. stocks gained 11% and international stocks

advanced 15.5% annually. She added that during both the 1970's and 1980's international stocks outperformed domestic stocks.

Mr. Dayton expressed concern that the SBI was moving too fast with all the proposed changes in the various asset classes. Mr. Bicker acknowledged Mr. Dayton's statement and suggested that initially the international funds could be indexed. He said this would allow the SBI to participate in the international markets at an earlier date and fine tune the management of the program later. Mr. Carlson reminded members that the Board's fiduciary responsibility is to invest for profit. He added that the international returns were impressive and that the Board should welcome proposals for international investments or other changes to the asset allocation. Mr. Humphrey asked if the returns on international stocks have taken into account the currency differences. Ms. Yeomans stated that they had. Mr. Carlson suggested that Mr. Bicker watch for a conference on international investing that Board members could attend. Mr. Bicker agreed.

Ms. Lehman then presented the final proposed change to the asset allocation which is to decrease the bond component by 5% to offset the increased allocation in alternative assets.

Ms. Growe inquired as to what time frame is needed to evaluate all these changes. Mr. Bicker discussed the various factors that impact market cycles in both the domestic and international markets. He reminded the Board that at times returns calculated over shorter periods of time could be disappointing but that higher long-term returns require a more aggressive asset allocation. He added that the Board could face extended periods when the Basic Funds' performance is in the bottom quartile of the TUCS Universe if the stock market performs poorly.

Mr. Humphrey stated that he was concerned about increasing alternative investments but that he believes the Board should move ahead with international investing. Mr. Bicker acknowledged the Board's concern over liquidity and opportunity in the alternative investment area. He explained that staff was not proposing a significant increase in alternative assets, and that the only real change was that the percentages would be adjusted to include unfunded commitments, in order to more accurately reflect the SBI's total exposure in the area.

Mr. Carlson stated he was more nervous about weakening the SBI's bond position than anything else. He asked Ms. Yeomans how comfortable the IAC was with this proposed change. Ms. Yeomans reported that the Alternative Investment Committee supports the change enthusiastically. She added that she thought some other IAC members wanted to emphasize to the Board the level of commitment in both money and work involved in these types of long-term investments.

Mr. Carlson questioned why the Board should keep the equity commitment the same while weakening the bond commitment. Mr. Bicker stated that the proposal actually increases the equity exposure. He added that if the economic system in the U.S. makes sense, someone who puts up equity dollars should earn more than someone who puts up

debt dollars. In response to a question from Mr. Carlson, Mr. Bicker noted that if low economic growth is expected, it can result in good returns for certain segments of the stock market, even though the stock market as a whole might suffer. He added that with low or negative economic growth it also becomes difficult for debt to be repaid, thus effecting the bond market too.

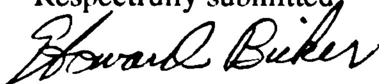
Mr. Dayton inquired about how soon staff would move the $700 million if the international proposal was approved. Mr. Bicker responded that staff would present the Board with an implementation plan at the next Board meeting.

Mr. Carlson then polled the Board members about their comfort level with the new proposal. Mr. Dayton stated he was not entirely comfortable with all of it. He added that alternative investments should be capped but that the amount proposed for equities was fine. Mr. McGrath indicated he was comfortable with the proposal as long as staff felt they could handle the international component in addition to the other changes. Ms. Growe stated she was relatively comfortable with it as long as the SBI moves slowly, has the staff resources to handle it and evaluates the results over an appropriate long period of time. Mr. Humphrey stated he was not comfortable with the increase in alternative assets from 15% to 20%. He approved of the international proposal but was against decreasing the bond segment. He added that it was his understanding that the SBI invested in alternative investments in order to diversify the portfolio, and not because its sole purpose was to maximize profits.

Mr. Bicker stated that the Board should understand that if the 15% allocation for alternatives is left in place, it would mean that the SBI would not be able to make any new investments in that area for as long as 3-4 years. A discussion followed with Board members indicating that if an exceptional opportunity arose in this area, staff could still bring it to the Board for consideration. Mr. Bicker then asked for clarification on whether the 15% target was to include unfunded commitments. Ms. Growe stated that it does.

Mr. Humphrey made a motion to maintain the alternative investment allocation at 15%, to allow an international component of up to 10%, and to maintain the bond allocation at 25%. Mr. Dayton seconded the motion. In response to a question from Ms. Growe, Mr. Carlson stated that the Board was not directing Mr. Bicker to liquidate any investments in the alternative investment area. The motion was approved. Mr. Carlson adjourned the meeting at 11:30 a.m.

Respectfully submitted,



Howard J. Bicker
Executive Director

ATTACHMENT A

Basic Retirement Funds
Asset Allocation

	Current Target	Proposed Target	Revised Target
Equity	60.0%	60.0%	60.0 - 65.0%
Domestic Stocks	60.0	50.0	50.0 - 55.0
International Stocks	0.0	10.0	10.0
Alternative Investments	15.0%	20.0%	15.0 - 20.0%*
Private Equity	2.5	10.0	Market Value Plus Unfunded Commitments
Real Assets	12.5	10.0	
Fixed Income	25.0%	20.0%	20.0%
Domestic Bonds	24.0	19.0	19.0
Cash	1.0	1.0	1.0
Total	100.0%		100.0%

* Unused allocation would be placed in domestic stocks

AGENDA
INVESTMENT ADVISORY COUNCIL
MEETING

Tuesday, December 17, 1991
2:00 P.M. - Room 125
State Capitol
Saint Paul

	TAB
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B. Portfolio Statistics (Sept. 30, 1991)	B
C. Administrative Report	C
1. Budget Report	
2. Travel Report	
3. Post Retirement Fund Benefit Increase	
3. Reports from the SBI Administrative Committees	D
A. FY 91 Audit Results	
B. FY 91 Annual Report Draft	
C. Up-Coming Client Conference	
D. Management Options for the Environmental Trust Fund	
E. Search Committee for Consultant RFP	
F. Contract Extension for Dedicated Bond Portfolio Software	
G. SBI Bill for 1992 Session	
4. Proposed Legislation from Retirement Systems Regarding the Post Fund (Executive Directors of PERA, MSRS, TRA)	
5. Report from the Equity Manager Search Committee (P. Sausen)	E
6. Reports from the Investment Advisory Council	
A. Asset Allocation Committee (J. Bohan)	F
1. Assigned Risk Plan Policy Statement	
2. International Equity Program Implementation Plan	
B. Stock and Bond Manager Performance (J. Eckmann)	G
1. Review of Manager Performance	
2. Request for Allocation Guidelines	
3. Results of 1991-94 GIC Bid	
C. Alternative Investment Committee (P. Kiedrowski)	H
1. Report on Fund Manager Annual Reviews	
2. Status of Jacobs' IMR Fund	
3. Update on KKR	

Minutes
Investment Advisory Council
September 10, 1991

The Investment Advisory Council met on Tuesday, September 10, 1991 at 2:00 P.M. in Room 118, State Capitol, St. Paul, Minnesota.

Members Present: John Bohan; James Eckmann; Elton Erdahl; Paul Groschen; Ken Gudorf; Laurie Fiori Hacking; Keith Johnson; Han Chin Liu; Malcolm McDonald; Barbara Schnoor; Debbie Veverka; and Jan Yeomans.

Members Absent: John Gunyou; David Jeffery; and Gary Norstrem.

SBI Staff: Howard Bicker; Beth Lehman; Jim Heidelberg; Deborah Griebenow; John Griebenow; Mansco Perry; Harriet Balian; Charlene Olson.

Others Attending: Gary Austin; Christie Eller; Michael A. McGrath; John Manahan; O.M. Ousdigian; Tom Richards, Richards & Tierney; Lisa Rotenberg; Ed Stuart, REAM; Elaine Voss; Robert Whitaker; Tim Beer, AFSCME; Glen West, MAPE.

Ms. Yeomans called the meeting to order and the minutes of the June 10, 1991 meeting were approved.

Executive Director's Investment Report

Mr. Bicker, Executive Director, referred IAC members to Tab A of the meeting materials. He stated that the Basic Retirement Funds have exceeded the inflation rate over the last five years and slightly underperformed the composite index and the median fund over the five year period. He added that the Post Retirement Fund provided an annualized benefit increase of 6.7% over the last five year period. He noted that the actuarial data would be updated in late 1991.

Mr. Bicker reported that the Basic Funds decreased in value by 0.6% for the quarter ending June 30, 1991 due to a negative cash flow of $50 million. He stated that the asset mix remained unchanged for the quarter. He reported that for the quarter, the Basic Funds slightly underperformed the composite index and the median fund. Excluding alternative assets, the fund outperformed over the three year period and matched the performance of the targets over five years. Mr. Bicker added that the stock segment underperformed the Wilshire 5000 by 0.5% for the quarter. The bond segment slightly trailed its target for the quarter but outperformed it for the latest five year period.

Mr. Bicker then directed members to the Post Retirement Fund summary. He stated that the fund increased in value by 3.6% during the second quarter, primarily due to positive cash flow. He explained that the 6.6% of assets in cash is higher than normal due to the

retirement of teachers after the end of the school year. He reported that as of June 30, 1991, the State Board of Investment was responsible for over $17 billion in assets.

Executive Director's Administrative Report

Mr. Bicker next presented his Administrative Report (Tab C of the meeting materials). He stated that the budget and the travel report were included as Attachments B and C respectively. He informed the IAC members that recommendations would be presented to the Board to fill the two vacancies on the IAC and the two positions on the South Africa Task Force. In response to a question from Mr. Bohan, Mr. Bicker stated that the recommendation was that the Equity Manager Selection Committee would consist of one designee of each of the Board members and two or more members of the IAC to be appointed by the Chair of the IAC.

Ms. Veverka asked why the asset mix for the Income Share Account differed from the target. Mr. Bicker indicated that the fund had been rebalanced. Mr. Bicker confirmed that the asset mix and rebalancing policy is the same as for the Basic Retirement Funds.

Investment Advisory Council Committee Reports
Equity Manager Committee

Ms. Veverka referred members to Tab E of the meeting materials. She stated that the committee had reviewed manager performance. She reported that the Basic Funds' managers underperformed both the aggregate benchmark and the Wilshire 5000 for the quarter. She also reported that at the request of staff and the Committee, IDS had conducted an analysis comparing the performance variation among its portfolio managers. The analysis revealed that the majority of the underperformance was the result of the active bets made by the portfolio manager responsible for the SBI's account. She stated that the committee recommended that IDS be included in the upcoming equity manager search and that no change be made in the account at this time. Ms. Veverka also noted that staff had recommended an in-depth review of Rosenberg due to its recent performance.

Fixed Income Manager Committee

Ms. Hacking stated that the Committee had reviewed manager performance and manager benchmarks during the quarter. She reported that the bond managers had slightly underperformed for the second quarter but outperformed their benchmark for the past year and the last five year period. She stated that the Committee accepted staff's recommendation to use the Salomon BIG as the benchmark for all the active fixed income managers. She added that the rationale for this recommendation was that it is difficult to develop appropriate fixed income benchmarks and that currently the active managers are broad based, investing in each sector of the market.

Alternative Investment Committee

Mr. Gudorf stated that there were no action items this quarter for the Board. He reported that the Committee and staff held review sessions with five managers, four of which

were venture capital and one was a resource manager. He stated that all the reports were positive and that the committee and staff were satisfied with each of the manager's reviews. He noted that the Zell/Chilmark fund has not drawn down any funds to date and that KKR has been very active recently and had given a favorable report to the Committee.

Asset Allocation Committee

Ms. Yeomans referred members to Tab D of the meeting materials. She provided background information on what Board members had requested regarding the staff asset allocation proposal. She then turned the presentation over to Mr. Bicker.

Mr. Bicker reviewed the process used by the SBI in establishing its asset allocation and recapped the performance history of the Basic Funds. He stated that in 1984 the value of the Basics was $3.1 billion. During the period from Jan. 1984 - Mar. 1991, contributions amounted to approximately $258 million. He explained how the risk-free rate (i.e. T-Bill rate) would have generated $2.6 billion over this same period. He stated that the SBI's more aggressive asset allocation policy has generated $1.6 billion of additional return for the funds. He reported the negative $65 million from asset management was due for the most part, to the active stock manager's bias toward small capitalization growth. He added that the index fund generated a negative $20 million relative to their benchmark, which was expected and due to tracking error and trading and management costs. He reported that the active managers had added $9 million to their benchmarks over this period, resulting in an ending market value for the Basic Funds of $7.6 billion as of March 1991. Mr. Bicker concluded by stating that the SBI has made a great deal of progress since 1984, such as learning how managers operate and how to better evaluate manager performance.

Ms. Lehman next presented the new asset allocation proposal for the Basic Retirement Funds. (See Exhibit A). She explained the linked relationship between performance goals and asset allocation. She stated that the Basic Funds have two performance goals: the first being a peer group comparison whereby the Basic Funds' performance should be in the top half of the TUCS Universe over a five year period; the second being market index comparison where the Basics' performance exceeds the composite index over a five year period. Ms. Lehman stated that the new proposal goal is to be in the top third of the TUCS Universe, which would require the Basic Funds to be slightly more aggressive.

Ms. Lehman reviewed the Basic Funds' TUCS rankings over the last five years. She explained to members that if the new asset allocation proposal is approved, these rankings could become even more volatile on a quarter to quarter basis than at present. She stated that the new asset allocation proposal was designed to provide additional returns without dramatically increasing the level of risk.

Ms. Lehman then discussed the three changes to the asset allocation policy. They are:

1) to increase alternative investments from up to 15% to up to 20%
2) to add an international stock component of 10% which would substitute 10% of the domestic stock allocation for 10% in international stocks

3) to decrease the bond allocation from 24% to 19%, to offset the increase in alternative assets.

She stated that the reasons for these changes were to further diversify the funds and to take advantage of the higher expected return potential in both private equity and international equity.

Ms. Lehman pointed out that the original proposal mailed out in the packet had been modified. She reported that there were concerns about the private equity targets in the original proposal. She stated that under the modified proposal, alternative asset percentages would be calculated using market values of the existing investments plus any outstanding commitments that had not yet been funded. She added that using this method, the alternative asset segment would make up 16-17% of the Basic Funds. Mr. Bicker noted that funds not utilized in the allocation of 20% would be committed to the domestic equity program. Ms. Lehman then continued by presenting some asset allocation simulations showing various expected returns and changes in standard deviations.

Mr. Richards briefly discussed a paper on asset allocation that his firm had distributed to various Board and IAC members. He stated that in general, Richards & Tierney supported staff's proposal, providing that the following operational questions be answered:

1) that the Board understands the increased investment risk
2) that there are adequate investment opportunities available
3) that there is sufficient availability of research resources
4) that everyone is aware of the illiquidity of private equity
5) that the visibility factor or sensitivity to poor outcomes could potentially be higher for private equity than it is for public equity.

Mr. Bicker reiterated that staff and some members of the IAC felt the need to address the issue of how the asset allocation percentages were defined with respect to money committed but not spent in the alternative asset area, and where uninvested dollars would go in the interim. He added that if the Board approves the 20% allocation to alternative assets, it doesn't mean the SBI will fill the target quickly.

Mr. Gudorf then asked for each Alternative Investment Committee member's opinion regarding the proposal. Mr. McDonald stated that the alternative area has produced some very pleasing results. He added that the proposal is a recognition of both where the SBI is now with alternative assets and the opportunities available in the future. He noted that he felt the committee had been trying to work toward this sort of proposal over the past couple of years. Mr. Bohan stated that he supports the proposal, especially in the alternative investment area, in its entirety. He added that he would like to see a more ambitious return than 300 basis points over equities as a reward for the illiquidity associated with these types of investments. Mr. Gudorf responded that he could directly support the 20% target. He added that there is a tremendous opportunity to put money to work in this area and that those who have the ability to put money to work can attract premier deals.

Other members of the IAC then commented on the proposal. Ms. Veverka stated that she preferred the prior proposal which had a specific allocation for real assets. She noted she was concerned about committing a lot in the private equity area and about the staff time that must be devoted to these investments. Mr. Eckmann commented that he had some concern about being unspecific about the differentiation between private equity and real assets. He reminded the members that since the retirees are already segregated in the Post Fund, he did not feel the combined equity and alternative investment allocation was too aggressive. He stated that he thought this proposal was a good approach and a step in the right direction. Mr. Bohan added that the Alternative Investment Committee would report regularly to the full IAC and Board as to the status of each asset class concerning levels of commitments, investments, and opportunities. He stated this was the reason he felt comfortable with staff's proposal.

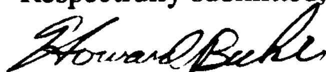
Ms. Yeomans then suggested moving the discussion on to the international component. Mr. Bicker stated that there were two reasons that staff had arrived at a recommendation of 10%. The first is that 10% equals approximately $700 million, which is a significant amount. The second reason is due to the fact that there is a 35% limitation on international and alternative investments set by statutes.

Mr. Groschen expressed concern about the availability of reliable financial data from some countries. Mr. Bicker stated that the majority of the international market is Japan, the United Kingdom, Germany and France. He added that these markets are improving their disclosure requirements.

Ms. Veverka inquired how long it would take to get to 10% in international. Mr. Bicker replied that staff would be bringing a proposal to the Board at its next meeting. In response to a question from Mr. Gudorf, Mr. Bicker replied that until the international program was in place, the money would remain invested in domestic stocks. Mr. Gudorf then added that he would like to see a larger target for international stocks than the 10% proposed, even if it wasn't all placed in international securities right away.

Mr. Bohan then moved approval of staff's asset allocation proposal as described at the meeting. Mr. McDonald seconded. The motion was approved. The meeting was adjourned at 3:15 p.m.

Respectfully submitted,



Howard J. Bicker
Executive Director

ATTACHMENT A

Basic Retirement Funds
Asset Allocation

	Current Target	Proposed Target	Revised Target
Equity	**60.0%**	**60.0%**	**60.0 - 65.0%**
Domestic Stocks	60.0	50.0	50.0 - 55.0
International Stocks	0.0	10.0	10.0
Alternative Investments	**15.0%**	**20.0%**	**15.0 - 20.0%***
Private Equity	2.5	10.0	Market Value Plus Unfunded Commitments
Real Assets	12.5	10.0	
Fixed Income	**25.0%**	**20.0%**	**20.0%**
Domestic Bonds	24.0	19.0	19.0
Cash	1.0	1.0	1.0
Total	**100.0%**		**100.0%**

* Unused allocation would be placed in domestic stocks

Tab A

RETURN OBJECTIVES

Basic Retirement Funds — $8.1 Billion Market Value

Total Return	Period Ending 9/30/91 Actual	Compared to Objective
Total Fund over 10 years	14.6%	10.7 percentage points above
■ Exceed inflation by 3-5 percentage points		
Total Fund over 5 years	11.8%	0.1 percentage points below
■ Exceed composite market index		
Stocks, Bonds, Cash over 5 years	12.2%	0.5 percentage points above
■ Exceed median fund		

Post Retirement Fund — $6.4 Billion Market Value

Realized Earnings	Actual	Benefit Increase Provided
Earnings over 1 year (Fiscal Year 1991)	9.3%	4.3% effective Jan. 1, 1992
Earnings over 5 years (Fiscal Years 1987-1991)	10.7%	5.7% annualized

ACTUARIAL VALUATIONS

MSRS, TRA, PERA General Plans

June 30, 1990

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

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

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

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

Actuarial Assumptions:

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

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

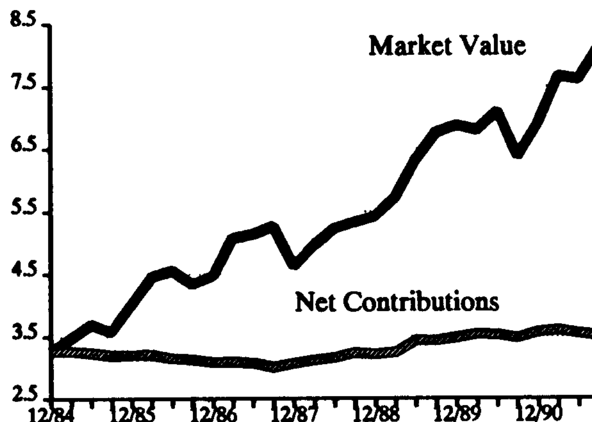
Additional detail on these funds as well as information on other funds managed by the Board can be found in the body of the Quarterly Investment Report.

EXECUTIVE SUMMARY

Basic Retirement Funds

Asset Growth

The market value of the Basic Funds increased 6.7% during the third quarter of 1991. The increase was due to strong performance in the stock, bonds and venture capital asset classes.



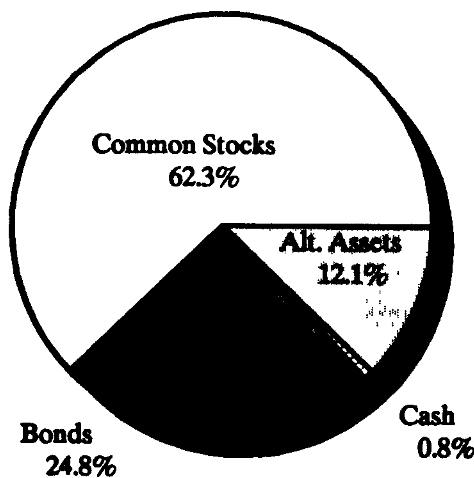
Asset Growth During Third Quarter 1991 (Millions)

Beginning Value	$7,610
Net Contributions	-39
Investment Return	549
Ending Value	$8,120

Asset Mix

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

The asset mix for the Basic Retirement Funds essentially remained unchanged for the quarter.



Actual Asset Mix
9/30/91

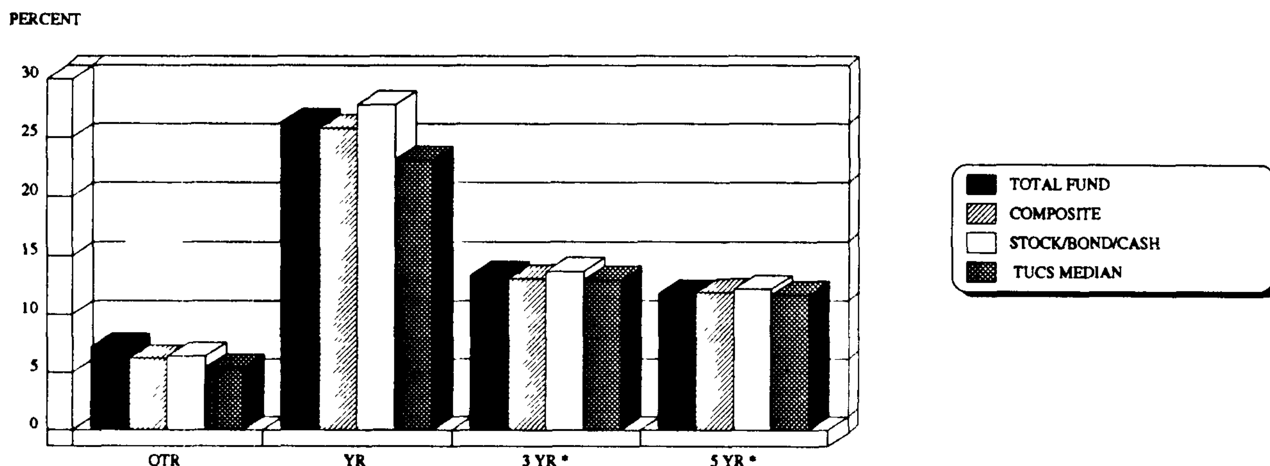
	Policy Asset Mix	Actual Mix 9/30/91	Actual Market Value (Millions)
Stocks	60.0%	62.3%	$5,062
Bonds	24.0	24.8	2,013
Alternative Assets	15.0	12.1	981
Unallocated Cash	1.0	0.8	64
	100.0%	100.0%	$8,120

Basic Funds (Con't.)

Total Fund Performance

For the quarter and latest year, the total fund with and without alternative assets exceeded their respective benchmarks.

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



Period Ending 9/30/91

	Qtr.	Yr.	*(Annualized) 3 Yr.	5 Yr.
Total Fund	**7.2%**	**26.3%**	**13.4%**	**11.8%**
Composite Index **	6.2	25.8	13.1	11.9
Stocks, Bonds and Cash Only	**6.4**	**27.7**	**13.7**	**12.2**
TUCS Median Balanced Fund***	5.4	23.1	13.0	11.7

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

Stock Segment Performance

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

	Qtr.	Yr.	(Annualized) 3 Yr.	5 Yr.
Stock Segment	6.7%	33.0%	14.4%	12.8%
Wilshire 5000	6.4	34.2	15.2	13.4

Bond Segment Performance

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

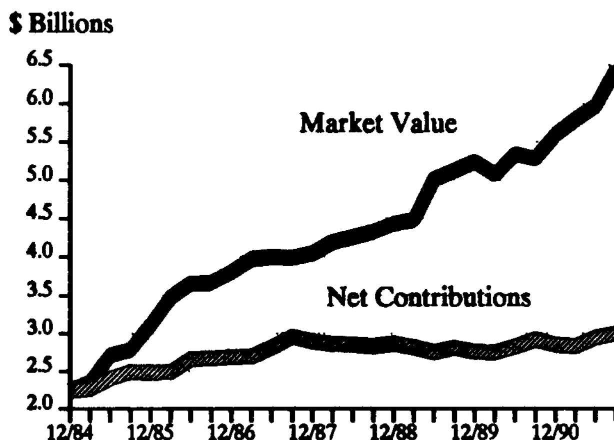
	Qtr.	Yr.	(Annualized) 3 Yr.	5 Yr.
Bond Segment	6.0%	17.1%	11.6%	10.0%
Salomon Broad Index	5.7	16.0	11.6	9.6

EXECUTIVE SUMMARY

Post Retirement Fund

Asset Growth

The market value of the Post Fund increased by 7.9% during the third quarter of 1991. Assets increased primarily due to strong stock and bond performance during the quarter.

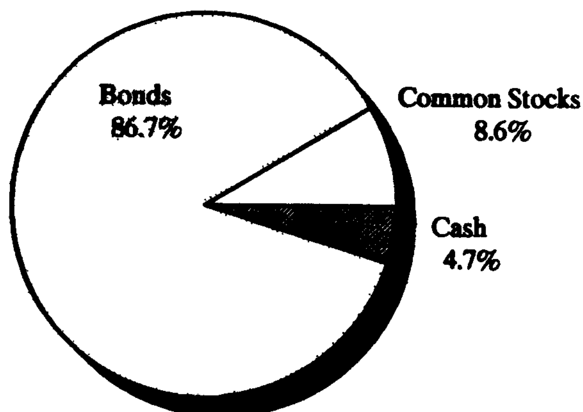


	Asset Growth During Second Quarter 1991 (Millions)
Beginning Value	$5,976
Net Contributions	54
Investment Return	418
Ending Value	$6,448

Asset Mix

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

The large cash flow received at the end of last quarter was invested in bonds, increasing the bond allocation and decreasing cash.



Actual Asset Mix
9/30/91

	Actual Market Value (Millions)	Asset Mix 9/30/91
Common Stocks	$555	8.6%
Bonds	5,588	86.7
Unallocated Cash	305	4.7
	$6,448	100.0%

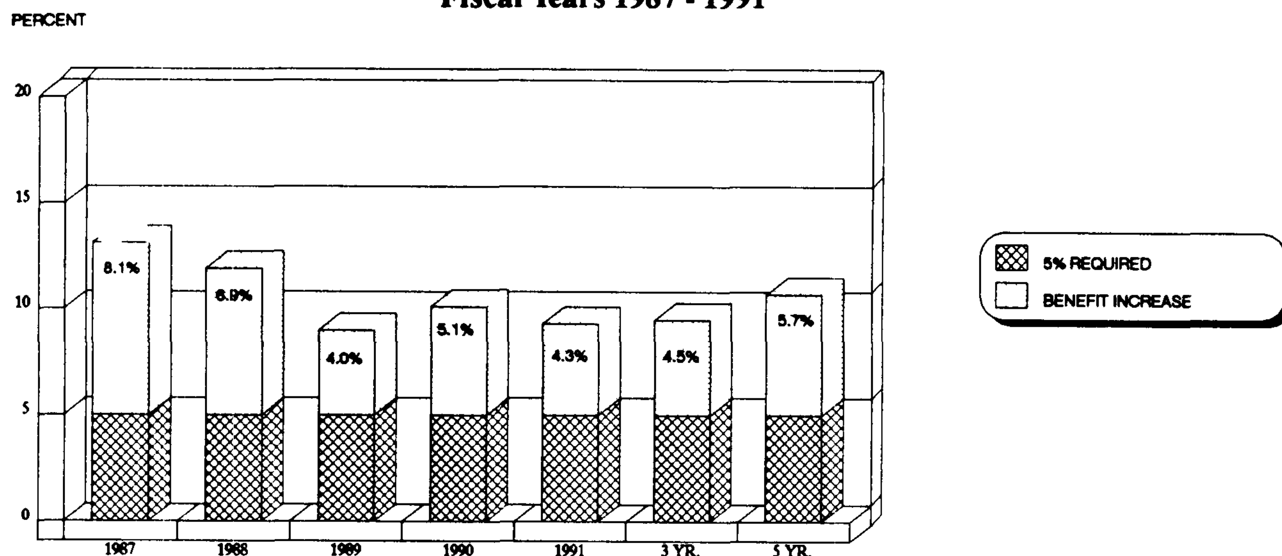
Post Fund (Con't.)

Total Fund Performance

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

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

Realized Earnings
Fiscal Years 1987 - 1991



	1987	1988	1989	1990	1991	(Annualized) 3 Yrs.	5 Yrs.
Realized Earnings*	13.1%	11.9%	9.0%	10.1%	9.3%	9.5%	10.7%
Benefit Increase**	**8.1**	**6.9**	**4.0**	**5.1**	**4.3**	**4.5**	**5.7**
Inflation	3.7	3.9	5.2	4.7	4.7	4.9	4.4

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

Stock Segment Performance

The stock segment of the Post Fund exceeded its benchmark for the latest quarter and year.

	Period Ending 9/30/91 (Annualized) Qtr.	Yr.	3 Yr.	5 Yr.
Stock Segment	6.9%	41.4%	12.8%	10.9%
Post Fund Benchmark	5.1	37.8	12.5	N.A.

Bond Segment Performance

At the close of the quarter, the dedicated bond portfolio had a current yield of 7.43% and average duration of 7.63 years. The market value of the dedicated bond portfolio was $5.5 billion at the end of the quarter.

The dedicated bond portfolio is designed such that cash inflows from portfolio income and principal payments match required cash outflows to retirees. Thus, total return is not a relevant performance measure for the portfolio. Nevertheless, the bond segment provided a 7.3% return for the quarter and a 19.5% return for the year. This is consistent with the design of the dedicated bond portfolio.

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.

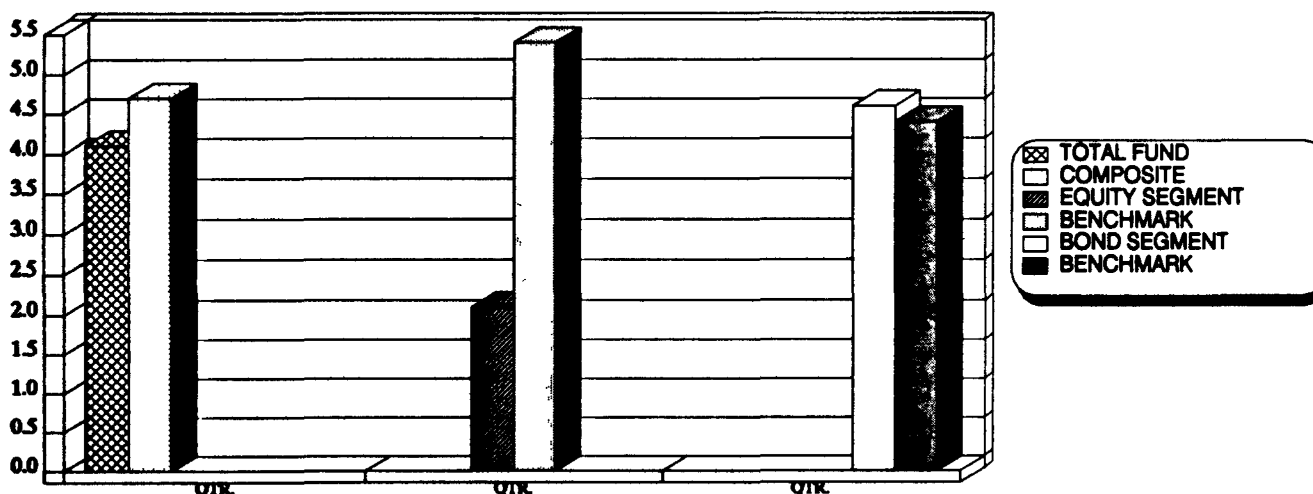
Asset Mix
The Assigned Risk Plan is ivnested in a balanced portfolio of common stocks and bonds. The actual asset mix will fluctuate in response to changes in the Plan's liability stream.

	9/30/91 Target	9/30/91 Actual
Stocks	20.0%	14.2%
Bonds	80.0	83.3
Unallocated Cash	0.0	2.5
Total	100.0%	100.0%

Investment Management
External management is utilized by the Assigned Risk Plan. The entire fund is managed by Voyageur 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 allocations of Voyageur Asset Management. Currently, the equity benchmark is the S&P 500. Staff and the manager are reviewing a custom benchmark for the equities, to replace the S&P 500. 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, 1991 the market value of the Assigned Risk Plan was $ 306 million.

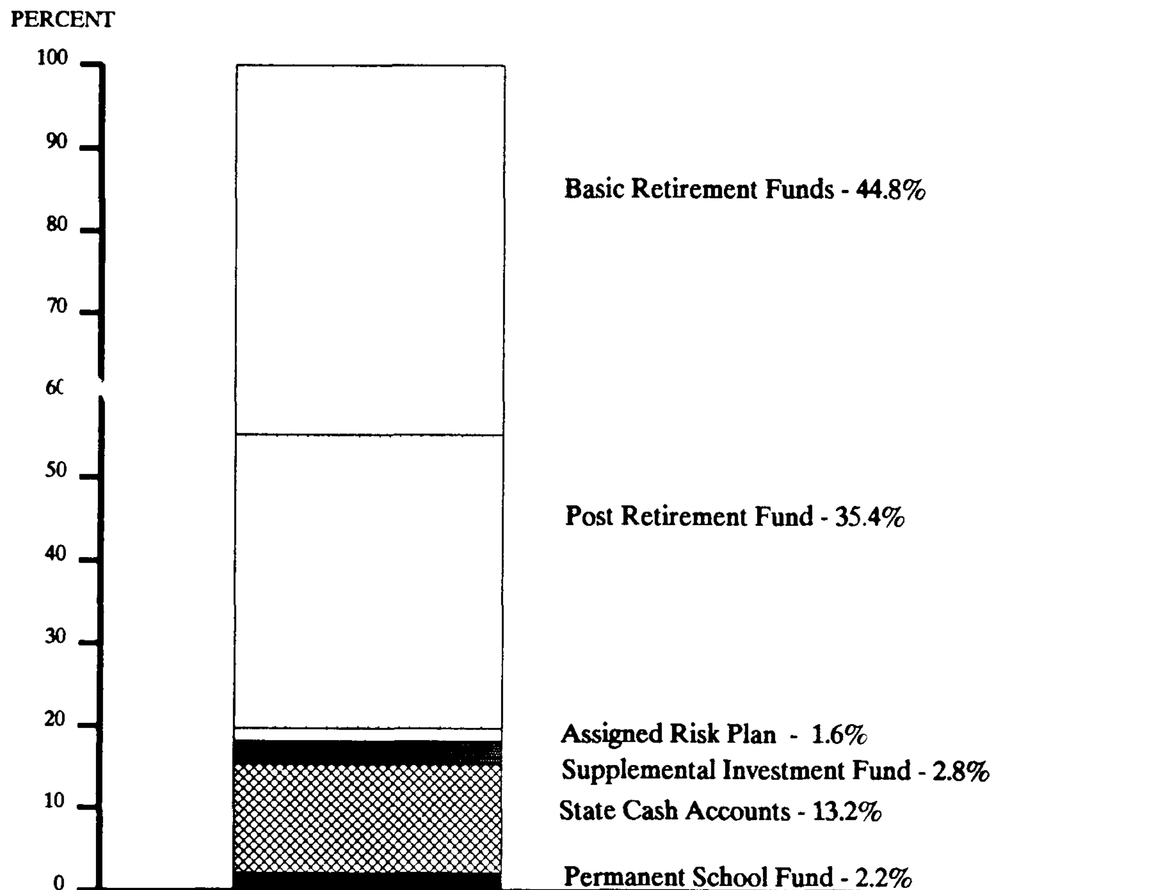


Period Ending 9/30/91

	Qtr.
Total Fund	4.1%
Composite Index	4.7
Equity Segment	2.1
Benchmark	5.4
Bond Segment	4.6
Benchmark	4.4

EXECUTIVE SUMMARY

Funds Under Management



	9/30/91 Market Value (Billions)
Basic Retirement Funds	$8.1
Post Retirement Fund	6.4
Assigned Risk Plan	0.3
Supplemental Investment Fund	0.5
State Cash Accounts	2.4
Permanent School Fund	0.4
Total	$18.1

MINNESOTA STATE BOARD OF INVESTMENT

QUARTERLY INVESTMENT REPORT

Third Quarter 1991

(July 1, 1991 – September 30, 1991)

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FINANCIAL MARKETS REVIEW

STOCK MARKET

Stock prices increased significantly during the quarter. During July and August the stock market advanced due to the combination of lower inflation rates, modestly improving econimic data, and easing monetary policy by the Federal Reserve. However, in September the economic data was disappointing, causing the market to me more cautious and giving back some of its gains from the previous months.

The Wilshire 5000 increased 6.4% for the quarter. Performance among the different Wilshire Style Indexes for the quarter are shown below:

- Large Value 7.0%
- Small Value 9.8
- Large Growth 6.5
- Small Growth 10.9

The Wilshire 5000 increased 34.2% during the latest year.

BOND MARKET

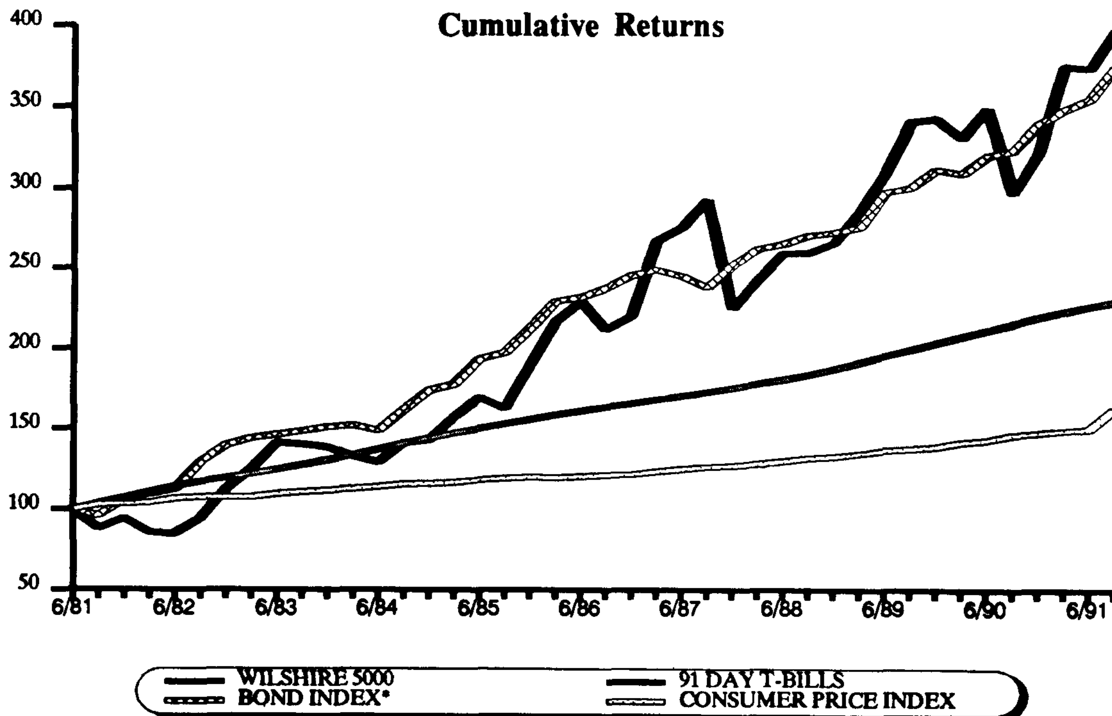
The bond market recorded a strong positive rate of return for the quarter. Bond prices increased all three months of the quarter due to the easing monetary policy by the Federal Reserve, causing long and short interest rates to drop.

Overall, the Salomon Brothers Broad Investment Grade (BIG) Index increased 5.7% for the quarter. The Salomon BIG sector returns for the quarter were:

- Treasury/Agency 5.8%
- Corporates 5.8
- Mortgages 5.5

The Salomon BIG increased 16.0% for the latest year.

PERFORMANCE OF CAPITAL MARKETS



* Salomon Broad Investment Grade Bond (BIG) Index

FINANCIAL MARKETS REVIEW

REAL ESTATE

The real estate market still faces capital shortages, oversupply and slow demand. Regional malls, industrials and apartments are faring the best. Office (especially suburban), smaller retail, hotel and land are not doing well. Many real estate portfolios have experienced significant writedowns over the last year, reflecting the weak real estate markets.

VENTURE CAPITAL

According to the *Venture Capital Journal*, a look at venture capital disbursements for 1990 indicates that net new capital commitments made to independent private venture capital funds declined 43% to $1.9 billion in 1990 from $3 4 billion in 1989. The 1990 total was the third consecutive year-to-year decline in new venture capital commitments It marks the lowest level of new capital raised since 1982, when the industry raised $1.4 billion.

RESOURCE FUNDS

Over the past year spot prices of West Texas Intermediate oil jumped to as high as $41.15 per barrel in October 1990 compared to a low of $15 06 in June 1990. Currently, spot prices of oil are at $21 per barrel.

Spot prices of natural gas reached in June 1991 a low of approximately $1.00 per MCF (thousand cubic feet) in June 1991 compared to a recent price of approximately $2.00 per MCF.

BASIC RETIREMENT FUNDS

Investment Objectives

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

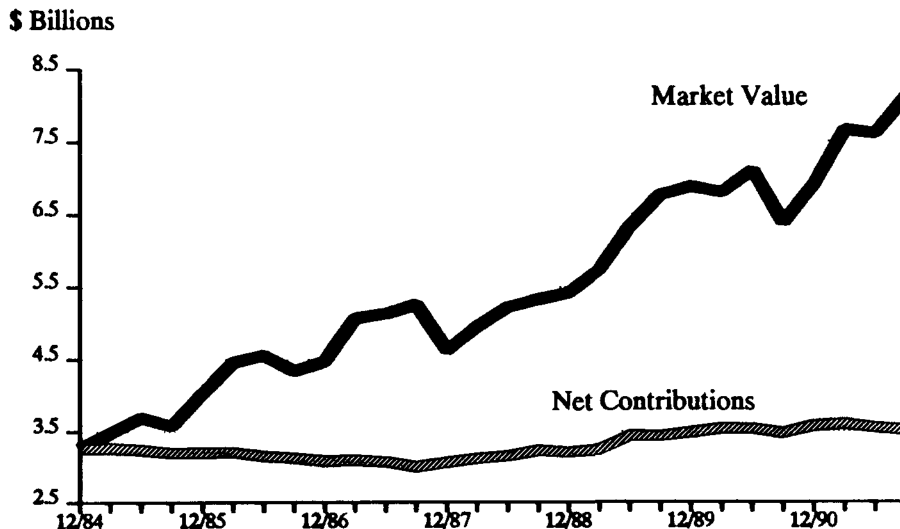
Based upon the Basic Funds' adequate funding levels and participant demographics, its investment time horizon is quite long. This extended time horizon permits the Board to take an aggressive, high expected return investment policy which incorporates a sizable equity component.

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

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

Asset Growth

The market value of the Basic Retirement Funds' assets increased 6.7% during the third quarter of 1991. The increase was due to strong performance in stocks, bonds, and venture capital.



In Millions

	12/86	12/87	12/88	12/89	12/90	3/91	6/91	9/91
Beginning Value	$4,030	$4,474	$4,628	$5,420	$6,382	$6,919	$7,656	$7,610
Net Contributions	-113	-26	146	269	97	29	-50	-39
Investment Return	557	180	646	1,186	440	708	4	549
Ending Value	$4,474	$4,628	$5,420	$6,875	$6,919	$7,656	$7,610	$8,120

BASIC RETIREMENT FUNDS

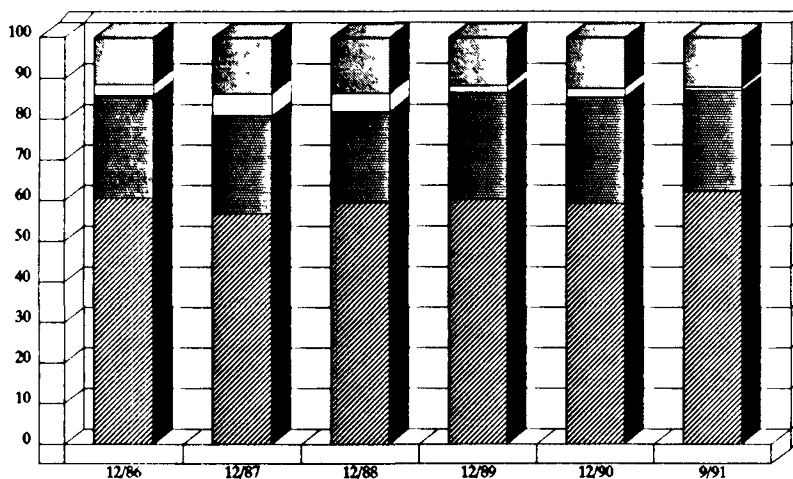
Asset Mix

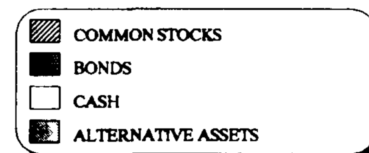
Based on the Basic Funds' investment objectives and the expected long-run performance of the capital markets, the Board has adopted the following long term policy asset allocation for the Basic Funds:

Common Stocks	60.0%
Bonds	24.0
Alternative Assets*	15.0
Unallocated Cash	1.0

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

The asset mix for the Basic Retirement Funds essentially remained unchanged for the quarter.





	Last Five Years					Latest Qtrs.		
	12/86	12/87	12/88	12/89	12/90	3/91	6/91	9/91
Stocks	60.6%	56.7%	59.5%	60.2%	59.1%	62.4%	62.1%	62.3%
Bonds	25.3	24.2	22.4	26.4	26.2	24.4	25.0	24.8
Real Estate	8.3	9.5	9.0	7.5	7.0	5.9	6.0	5.6
Venture Capital	1.8	2.8	3.1	2.8	4.2	3.8	3.9	5.1
Resource Funds	1.4	1.4	1.5	1.4	1.5	1.4	1.5	1.4
Unallocated Cash	2.6	5.4	4.5	1.7	2.0	2.1	1.5	0.8
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

BASIC RETIREMENT FUNDS

Total Fund Performance vs. Standards

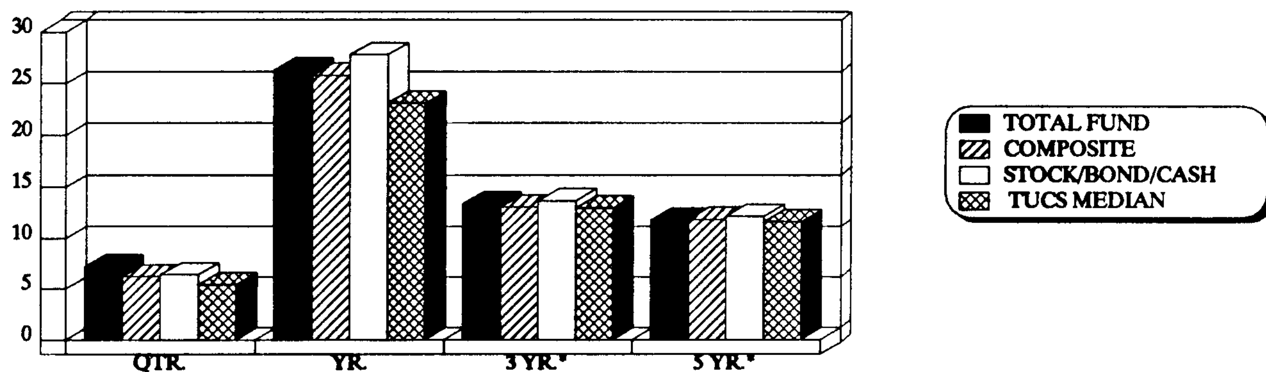
The Basic Funds' long-term rate of return performance is evaluated relative to two specific benchmarks:

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

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

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

The Basic Funds total portfolio exceeded its composite index for the latest quarter and year. Because of the Basic Funds sizable stock allocation and performance of the stock market, the Basic Funds' exceeded the median balanced fund for the latest quarter and year. Excluding alternative assets, the Basic Funds ranked in the top third (27th percentile) of the TUCS universe for the quarter. In addition, it ranked in the top quartile (25th percentile) for the latest year and the top half (39th percentile) for the last five years.



	Qtr.	Yr.	3 Yr.	5 Yr.
		Period Ending 9/30/91	***(Annualized)**	
Total Fund	**7.2%**	**26.3%**	**13.4%**	**11.8%**
Composite Index	6.2	25.8	13.1	11.9
Stocks, Bonds and Cash Only	**6.4**	**27.7**	**13.7**	**12.2**
TUCS Median Balanced Fund	5.4	23.1	13.0	11.7

BASIC RETIREMENT FUNDS

Segment Performance vs. Standards

Stock Segment

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

			Annualized	
	Qtr.	Yr.	3 Yrs.	5 Yrs.
Stock Segment	6 7%	33.0%	14.4%	12.8%
Wilshire 5000	6 4	34.2	15.2	13.4

Bond Segment

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

			Annualized	
	Qtr.	Yr.	3 Yrs.	5 Yrs.
Bond Segment	6 0%	17.1%	11.6%	10.0%
Salomon Bond Index	5 7	16.0	11.6	9.6

Real Estate Segment

The real estate segment of the Basic Funds equaled its target for the latest quarter and exceeded it for the latest year

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

			Annualized	
	Qtr.	Yr.	3 Yrs.	5 Yrs.
Real Estate Segment	0.0%	-4.9%	2.4%	4.3%
Real Estate Index	0.0	-5.3	1.0	3.7
Inflation	0.9	3.4	4.6	4.5

Venture Capital and Resource Funds

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

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

			Annualized	
	Qtr.	Yr.	3 Yrs.	5 Yrs.
Venture Capital Segment	39 4%	59.3%	26.0%	18.8%
Resource Fund Segment	0.4	30.3	4.5	7.9

POST RETIREMENT FUND

Investment Objectives

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

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

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

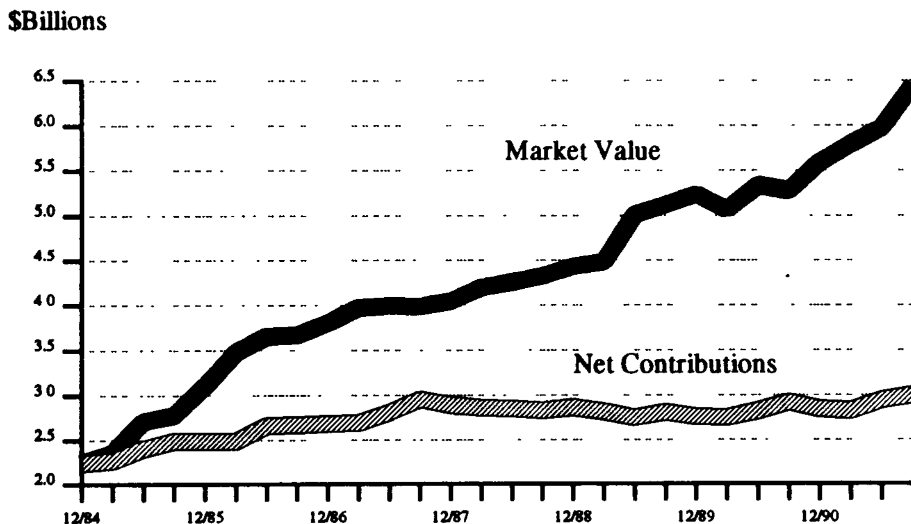
The Board has established two earnings objectives for the Post Fund:

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

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

Asset Growth

The market value of the Post Retirement Fund increased by 7.9% during the third quarter of 1991. Asset growth increased primarily due to strong stock and bond performance during the quarter.



In Millions

	12/86	12/87	12/88	12/89	12/90	3/91	6/91	9/91
Beginning Value	$3,107	$3,808	$4,047	$4,434	$5,278	$5,590	$5,790	$5,976
Net Contributions	199	207	-27	25	-72	-20	119	54
Investment Return	502	32	414	779	384	220	67	418
Ending Value	$3,808	$4,047	$4,434	$5,238	$5,590	$5,790	$5,976	$6,448

POST RETIREMENT FUND

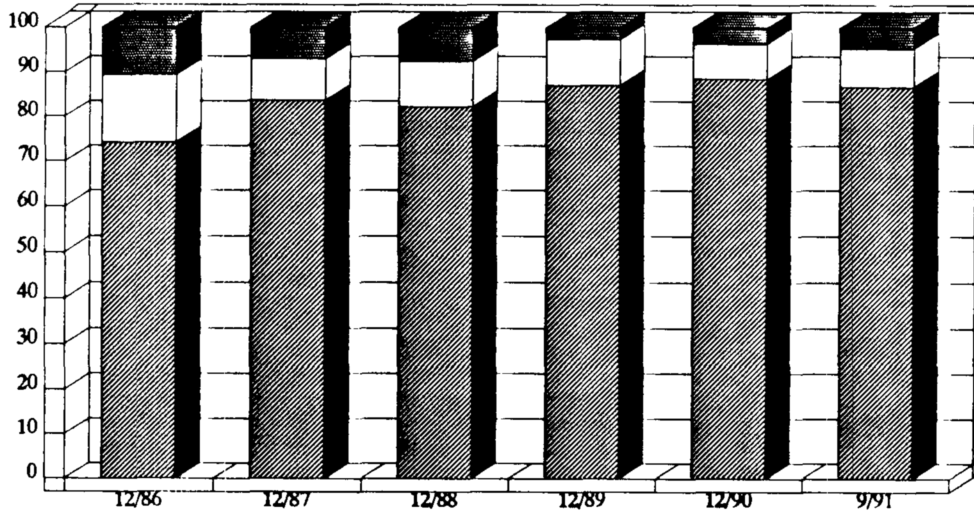
Asset Mix

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

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

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

The large cashflow received at the end of last quarter was invested in bonds, increasing the bond allocation and decreasing cash.



	Last Five Years					Latest Qtrs.		
	12/86	**12/87**	**12/88**	**12/89**	**12/90**	**3/91**	**6/91**	**9/91**
Bonds	74.2%	83.7%	82.3%	87.1%	88.5%	87.6%	84.7%	86.7%
Stocks	15.1	9.3	10.1	10.2	7.9	9.0	8.7	8.6
Unallocated Cash	10.7	7.0	7.6	2.7	3.6	3.4	6.6	4.7
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

POST RETIREMENT FUND

Total Fund Performance

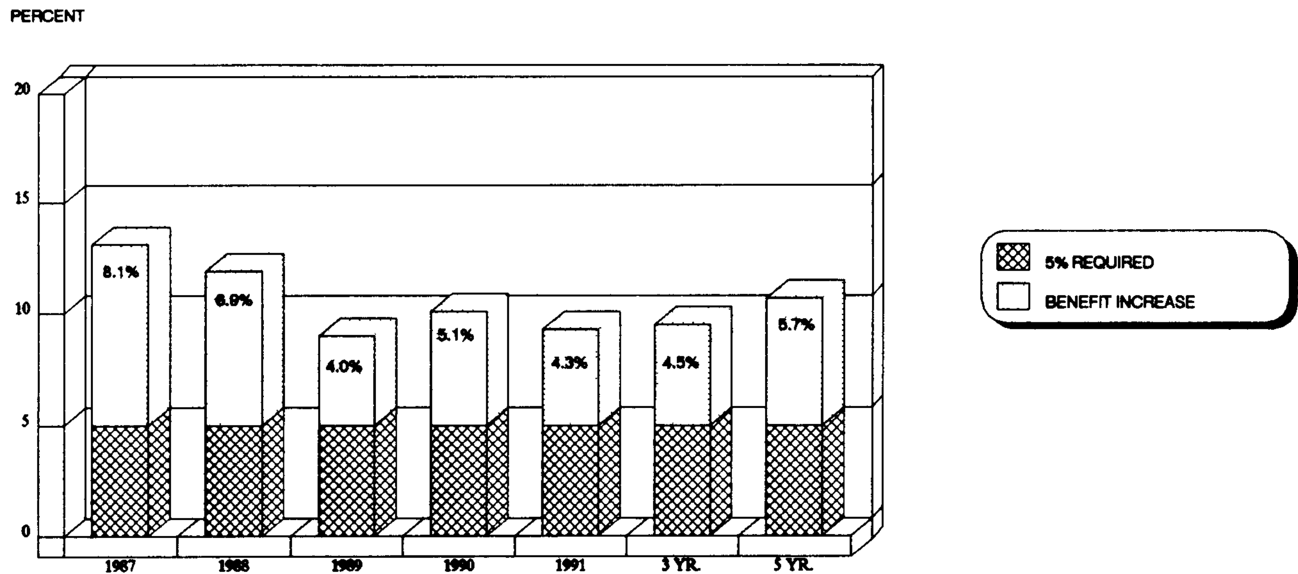
The ability of the Post Fund to maintain current benefit levels and provide future benefit increases depends upon its earnings. State statutes define earnings for the Post Fund as interest and dividend income as well as realized equity and fixed income capital gains (or losses). Unrealized capital gains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

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

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

Realized Earnings

Fiscal Years 1987 - 1991



	1987	1988	1989	1990	1991	(Annualized) 3 Yrs.	5 Yrs.
Realized Earnings*	13.1%	11.9%	9.0%	10.1%	9.3%	9.5%	10.7%
Benefit Increase**	**8.1**	**6.9**	**4.0**	**5.1**	4.3	4.5	5.7
Inflation	3.7	3.9	5.2	4.7	4.7	4.9	4.4

* Interest, dividends and net realized capital gains.

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

POST RETIREMENT FUND

Segment Performance

Stock Segment Performance

The stock segment of the Post Fund exceeded its benchmark for the latest quarter and year.

	Period Ending 9/30/91 (Annualized)			
	Qtr.	Yr.	3 Yrs.	5 Yrs.
Stock Segment	6.9%	41.4%	12.8%	10.9%
Post Fund Benchmark	5 1	37.8	12.5	N.A.

Bond Segment Performance

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

The Post Fund's bond portfolio provided a 7.3% total rate of return for the quarter and a 19.5% return for the year. This performance is consistent with the bond portfolio's design. The Post Fund's dedicated bond portfolio is structured so that portfolio income and maturities match the Fund's liability stream. As a result, the duration of the dedicated bond portfolio exceeds that of the bond market Consequently, on a total return basis, the portfolio can be expected to underperform the bond market in down periods and outperform the market in up periods.

Dedicated Bond Portfolio Statistics
9/30/91

Value at Market	$ 5,481,666,330
Value at Cost	4,999,400,174
Average Coupon	8.56%
Current Yield	7.43
Yield to Maturity	8.24
Current Yield at Cost	8.17
Time to Maturity	16.35 Years
Average Duration	7.63 Years
Average Quality Rating	AAA
Number of Issues	457

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

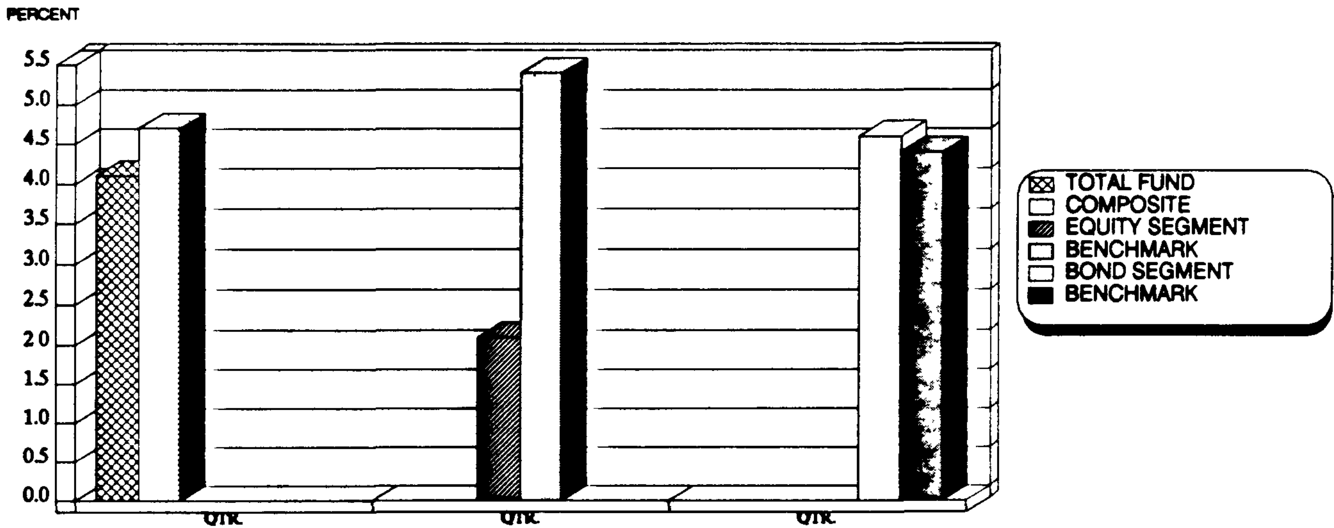
Asset Mix
The Assigned Risk Plan is ivnested in a balanced portfolio of common stocks and bonds. The actual asset mix will fluctuate in response to changes in the Plan's liability stream

	9/30/91 Target	9/30/91 Actual
Stocks	20.0%	14.2%
Bonds	80.0	83.3
Unallocated Cash	0.0	2.5
Total	100.0%	100.0%

Investment Management
External management is utilized by the Assigned Risk Plan The entire fund is managed by Voyageur 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 allocations of Voyageur Asset Management. Currently, the equity benchmark is the S&P 500. Staff and the manager are reviewing a custom benchmark for the equities, to replace the S&P 500. 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, 1991 the market value of the Assigned Risk Plan was $ 306 million.



Period Ending 9/30/91

	Qtr.
Total Fund	4.1%
Composite Index	4.7
Equity Segment	2.1
Benchmark	5.4
Bond Segment	4.6
Benchmark	4.4

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

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

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

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

On September 30, 1991 the market value of the entire fund was $536 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.

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

SUPPLEMENTAL INVESTMENT FUND

Income Share Account

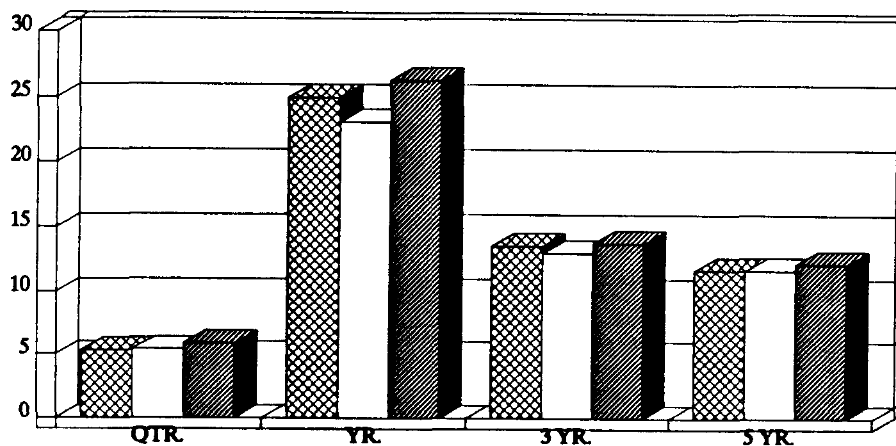
Investment Objective
The primary investment objective of the Income Share Account is similar to that of the Basic Retirement Funds. The Account seeks to maximize long-term real rates of return, while limiting short-run portfolio return volatility.

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

	Target	Actual
Stocks	60.0%	63.1%
Bonds	35.0	29.2
Unallocated Cash	5.0	7.7
	100.0%	100.0%

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

Market Value
On September 30, 1991 the market value of the Income Share Account was $278 million.



Period Ending 9/30/91

	Qtr.	Yr.	Annualized 3 Yr.	Annualized 5 Yr.
Total Account	5.3%	25.0%	13.6%	11.7%
Median Fund*	5.4	23.1	13.0	11.7
Composite**	5.9	26.3	13.8	12.2
Equity Segment	5.9	33.4	14.8	12.5
Wilshire 5000	6.4	34.2	15.2	13.4
Bond Segment	5.2	15.5	11.5	9.9
Salomon Bond Index	5.7	16.0	11.6	9.6

* TUCS Median Balanced Portfolio

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

SUPPLEMENTAL INVESTMENT FUND

Growth Share Account

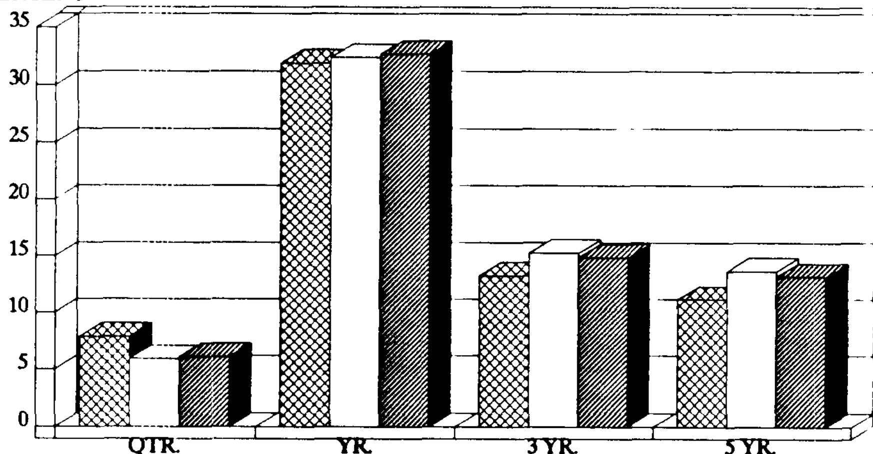
Investment Objective
The Growth Share Account's investment objective is to generate above-average returns from capital appreciation on common stocks.

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

	Target	Actual
Stocks	95.0%	96.1%
Unallocated Cash	5.0	3.9
	100.0%	100.0%

Investment Management
Currently, the entire Account is managed by the same group of active external stock managers utilized by the Basic Retirement Funds. Prior to April 1988, other active managers controlled a substantial portion of the account.

Market Value
On September 30, 1991 the market value of the Growth Share Account was $80 million.



Period Ending 9/30/91

	Qtr.	Yr.	Annualized 3 Yr.	Annualized 5 Yr.
Total Account	7.9%	31.9%	13.3%	11.2%
Median Fund*	5.9	32.4	15.3	13.7
Composite**	6.1	32.8	14.9	13.2
Equity Segment	8.3	33.4	13.8	11.5
Wilshire 5000	6.4	34.2	15.2	13.4

* TUCS Median Managed Equity Portfolio

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

SUPPLEMENTAL INVESTMENT FUND

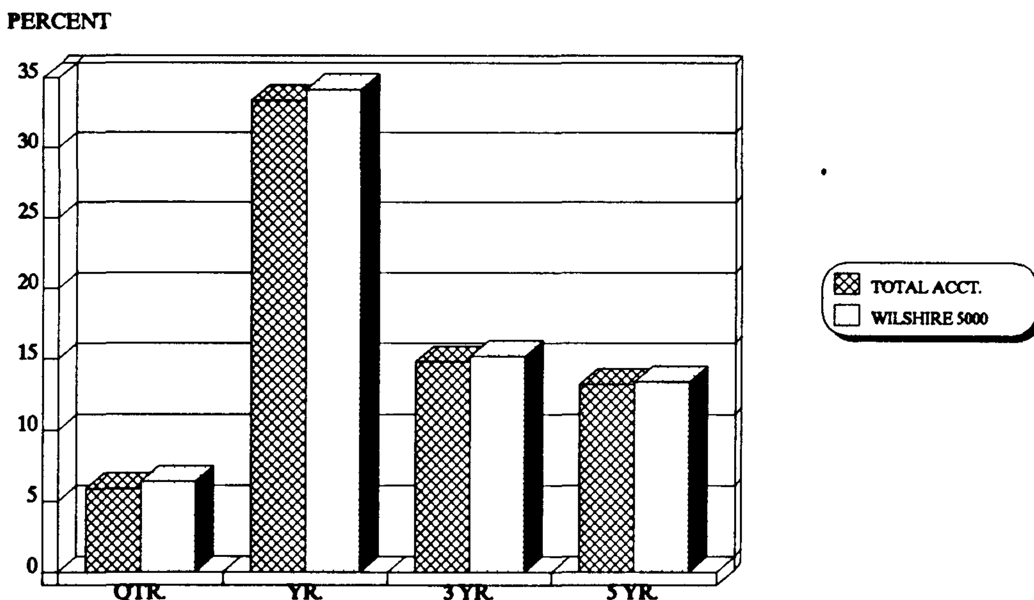
Common Stock Index Account

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

The Account is invested 100% in common stocks.

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

Market Value
On September 30, 1991 the market value of the Common Stock Index Account was $17 million.



Period Ending 9/30/91

	Qtr.	Yr.	3 Yr. (Annualized)	5 Yr. (Annualized)
Total Account	5.9%	33.5%	14.8%	13.2%
Wilshire 5000	6.4	34.2	15.2	13.4

SUPPLEMENTAL INVESTMENT FUND

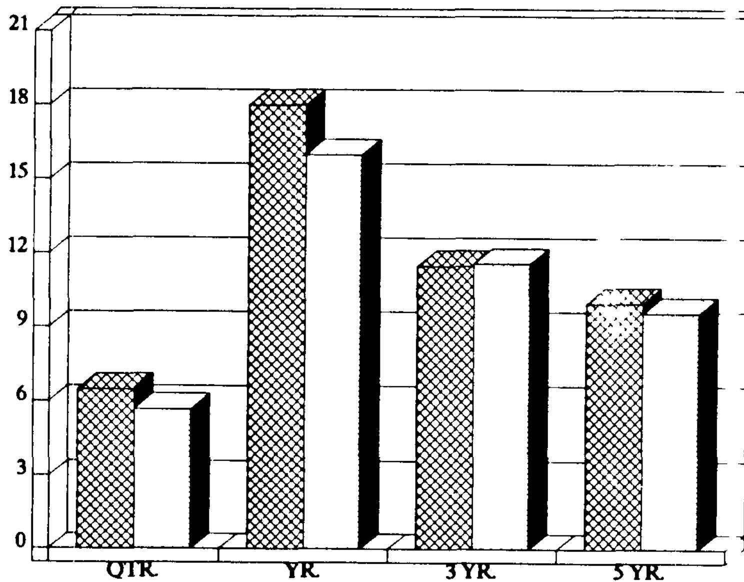
Bond Market Account

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

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

Investment Management
The entire Account is managed by the same group of active external bond managers utilized by the Basic Retirement Funds.

Market Value
On September 30, 1991 the market value of the Bond Market Account was $8 million



Period Ending 9/30/91

			Annualized	
	Qtr.	Yr.	3 Yr.	5 Yr.
Total Account	6.5%	18.0%	11.5%	10.0%
Salomon Broad	5.7	16.0	11.6	9.6

SUPPLEMENTAL INVESTMENT FUND

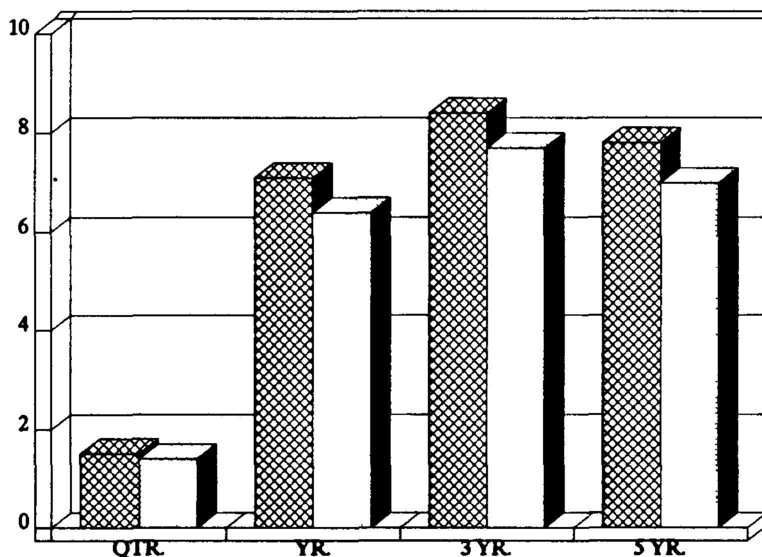
Money Market Account

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

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

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

Market Value
On September 30, 1991 the market value of the Money Market Account was $86 million.



Period Ending 9/30/91

	Qtr.	Yr.	3 Yr. (Annualized)	5 Yr. (Annualized)
Total Account	1.5%	7.1%	8.4%	7.9%
91 Day T-Bills	1.4	6.4	7.7	7.0

SUPPLEMENTAL INVESTMENT FUND

Guaranteed Return Account

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

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

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

Market Value
On September 30, 1991 the market value of the Guaranteed Return Account was $66 million.

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

PERMANENT SCHOOL FUND

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

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

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

Asset Mix
The Permanent School Fund increased its cash position to fund a cash outflow to the Dept. of Education in October of this year. The Permanent School fund continues to hold only fixed income securities. Under current legal limitations, common stocks are not appropriate vehicles for the Fund.

	Target	Actual
Bonds	95.0%	93.5%
Unallocated Cash	5.0	6.5
Total	100.0%	100.0%

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

Asset Growth
The market value of the Permanent School Fund's assets increased 7.2% during the third quarter. Investment income and contributions contributed to the increase in assets.

Asset Growth During Third Quarter 1991 (Millions)

Beginning Value	$391.9
Net Contributions	2.1
Investment Return	26.2
Ending Value	$420.2

Bond Segment Performance
The composition of the Permanent School Fund's bond portfolio was essentially unchanged during the quarter. The bond portfolio is structured with a laddered distribution of maturities to minimize the Fund's exposure to re-investment rate risk. At the quarter's-end, the portfolio had a current yield of 8.74%, an average life of 7.01 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 9/30/91

Value at Market	$384,623,923
Value at Cost	356,832,720
Average Coupon	9.15%
Current Yield	8.74
Yield to Maturity	8.41
Current Yield at Cost	9.19
Time to Maturity	15.07 Years
Average Duration	7.01 Years
Average Quality Rating	AAA
Number of Issues	132

STATE CASH ACCOUNTS

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

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

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

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

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

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

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

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

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

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

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

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

Period Ending 9/30/91

	Market Value (Millions)	Qtr.	Yr.	3 Yrs. Annualized
Treasurer's Cash Pool	$1,903	1.9%	8.3%	8.8%
Trust Fund Cash Pool	287	1.6	7.4	8.4
91-Day T-Bills		1.4	6.4	7.7

Tab B

PORTFOLIO STATISTICS

		PAGE
I.	Composition of State Investment Portfolios 9/30/91	1
II.	Cash Flow Available for Investment 6/30/91 - 9/30/91	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, 1991
(in 000's)

	CASH AND SHORT TERM SECURITIES	BONDS		STOCKS		ALTERNATIVE ASSETS	TOTAL
		INTERNAL	EXTERNAL	INTERNAL	EXTERNAL		
BASIC RETIREMENT FUNDS:							
TEACHERS RETIREMENT FUND	$ 9,121	$ -0-	$ 915,149	$ -0-	$2,300,699	$445,917	$ 3,670,886
	0.25%		24.93%		62.67%	12.15%	100%
PUBLIC EMPLOYEES RETIRE. FUND	19,132	-0-	456,128	-0-	1,146,713	222,121	1,844,094
	1.04%		24.73%		62.18%	12.05%	100%
STATE EMPLOYEES RETIRE. FUND	24,443	-0-	394,678	-0-	992,227	192,197	1,603,545
	1.52%		24.61%		61.88%	11.99%	100%
PUBLIC EMP. POLICE & FIRE FUND	7,411	-0-	176,626	-0-	444,041	86,012	714,090
	1.04%		24.73%		62.18%	12.05%	100%
HIGHWAY PATROL RETIRE. FUND	1,739	-0-	28,936	-0-	72,745	14,091	117,511
	1.48%		24.62%		61.91%	11.99%	100%
JUDGES RETIREMENT FUND	72	-0-	1,704	-0-	4,283	830	6,889
	1.05%		24.73%		62.17%	12.05%	100%
PUBLIC EMP. P.F. CONSOLIDATED	1,498	-0-	20,279	-0-	51,000	9,875	82,652
	1.81%		24.54%		61.70%	11.95%	100%
CORRECTIONAL EMPLOYEES RETIREMENT	448	-0-	19,947	-0-	50,147	9,714	80,256
	.56%		24.86%		62.48%	12.10%	100%
POST RETIREMENT FUND	305,061	5,588,685	-0-	554,571	-0-	-0-	6,448,317
	4.73%	86.67%		8.60%			100%
MINNESOTA SUPPLEMENTAL FUNDS:							
INCOME SHARE ACCOUNT	21,463	81,233	-0-	-0-	175,499	-0-	278,195
	7.72%	29.20%			63.08%		100%
GROWTH SHARE ACCOUNT	3,072	-0-	-0-	-0-	76,571	-0-	79,643
	3.86%				96.14%		100%
MONEY MARKET ACCOUNT	85,856	-0-	-0-	-0-	-0-	-0-	85,856
	100%						100%
COMMON STOCK INDEX ACCOUNT	-0-	-0-	-0-	-0-	17,390	-0-	17,390
					100%		100%
BOND MARKET ACCOUNT	-0-	-0-	9,639	-0-	-0-	-0-	9,639
			100%				100%
GUARANTEED RETURN ACCOUNT	-0-	-0-	66,082	-0-	-0-	-0-	66,082
			100%				100%

	CASH AND SHORT TERM SECURITIES	BONDS		STOCKS		ALTERNATIVE ASSETS	TOTAL
		INTERNAL	EXTERNAL	INTERNAL	EXTERNAL		
TOTAL RETIREMENT FUNDS	$ 479,316	$5,669,918	$2,089,168	$554,571	$ 5,331,315	$980,757	$15,105,045
	3.17%	37.54%	13.83%	3.67%	35.30%	6.49%	100%
WORKERS COMPENSATION	7,676	251,780		43,406	-0-	-0-	302,862
	2.54%	83.13%		14.33%			100%
PERMANENT SCHOOL FUND	27,487	392,729	-0-	-0-	-0-	-0-	420,213
	6.54%	93.46%					100%
TREASURERS CASH	1,902,866	-0-	-0-	-0-	-0-	-0-	1,902,866
	100%						100%
HOUSING FINANCE AGENCY	181,918	-0-	-0-	-0-	-0-	-0-	181,918
	100%						100%
MINNESOTA DEBT SERVICE FUND	20,924	-0-	-0-	-0-	-0-	-0-	20,924
	100%						100%
MISCELLANEOUS ACCOUNTS	128,487	-0-	-0-	-0-	-0-	-0-	128,487
	100%						100%
GRAND TOTAL	$2,748,671	$6,314,427	$2,089,168	$597,977	$5,331,315	$980,757	$18,062,315
	15.22%	34.96%	11.57%	3.31%	29.51%	5.43%	100%

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

For period of
July 1, 1991 - September 30, 1991

Teachers Retirement Fund	$(45,500,000.00)
Public Employees Retirement Fund	(7,000,000.00)
State Employees Retirement Fund	7,885,000.00
Public Employees Police & Fire	5,000,000.00
Highway Patrol Retirement Fund	(196,000.00)
Judges Retirement Fund	134,000.00
Public Emp. P & F Consolidated	664.516.53
Correctional Employees Retirement Fund	382,000.00
Post Retirement Fund	54,489,365.97
Supplemental Retirement Fund - Income	(5,738,262.32)
Supplemental Retirement Fund - Growth	(1,824,325.57)
Supplemental Retirement Fund - Money Market	(1,460,288.18)
Supplemental Retirement Fund - Index	1,034,855.38
Supplemental Retirement Fund - Bond Mkt.	512,591.08
Supplemental Retirement Fund - Guaranteed	341,686.90
Total Retirement Funds Net Cash Flow	$ 8,725,139.79
Permanent School Fund	2,089,873.33
Total Net Cash Flow	$ 10,815,013.12

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT

TRANSACTION AND ASSET SUMMARY
RETIREMENT FUNDS

	Net Transactions				Asset Summary (at market)			
	Bonds (000,000)	Stocks (000,000)	Total	Cash Flow	Short-term % of Fund	Bonds % of Fund	Equity % of Fund	Total (000,000) (at market)
January 1989	88	(10)	78	3	5.6	47.7	46.7	10,760
February	60	18	78	38	5.3	47.9	46.8	10,633
March	150	5	155	12	3.9	48.8	47.3	10,783
April	(16)	188	172	16	2.3	48.1	49.6	11,113
May	(2)	4	2	43	2.6	47.6	49.8	11,461
June	119	10	129	119	2.5	49.2	48.3	11,768
July	121	(100)	21	44	2.6	49.0	48.4	12,287
August	275	(205)	70	51	2.4	49.8	47.8	12,311
September	47	11	58	32	2.2	50.2	47.6	12,344
October	113	(154)	(41)	8	2.6	52.5	44.9	12,342
November	45	0	45	78	2.8	52.1	45.1	12,494
December	14	6	20	24	2.8	51.8	45.4	12,581
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

Tab C

EXECUTIVE DIRECTOR'S REPORT

DATE: December 11, 1991

TO: Members, State Board of Investment

FROM: Howard J. Bicker

1) Budget Report

A report on the SBI's FY92 administrative budget for the period ending November 30, 1991 is included as Attachment A.

2) Travel Report

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

3) Post Retirement Fund Increase

Earnings from the Post Retirement Fund for FY 1991 were sufficient to provide a 4.295% benefit increase to eligible retirees. The benefit increase will be effective January 1, 1992.

STATE BOARD OF INVESTMENT
FISCAL YEAR 1992 ADMINISTRATIVE BUDGET REPORT
GENERAL FUND APPROPRIATION
FISCAL YEAR TO-DATE THROUGH NOVEMBER 30,1991

ITEM	FISCAL YEAR 1992 BUDGET	FISCAL YEAR 1992 EXPENDITURES
PERSONAL SERVICES		
CLASSIFIED EMPLOYEES	$ 260,000	$ 101,582
UNCLASSIFIED EMPLOYEES	1,224,000	443,927
SEVERENCE PAYOFF	0	24,225
WORKERS COMPENSATION INSURANCE	0	1,264
MISCELLANEOUS PAYROLL	0	-20
SUBTOTAL	**$ 1,484,000**	**$ 570,978**
EXPENSES & CONTRACTUAL SERVICES		
RENTS & LEASES	92,000	32,743
REPAIRS/ALTERATIONS/MAINTENANCE	9,000	1,987
PRINTING & BINDING	18,000	6,680
PROFESSIONAL/TECHNICAL SERVICES	5,000	4,383
DATA PROCESSING & SYSTEM SERVICES	162,000	54,000
PURCHASED SERVICES	20,000	14,639
SUBTOTAL	**$ 306,000**	**$ 114,432**
MISCELLANEOUS OPERATING EXPENSES		
COMMUNICATIONS	20,000	10,013
TRAVEL, IN-STATE	3,000	602
TRAVEL, OUT-STATE	40,000	15,541
FEES & OTHER FIXED CHARGES	7,000	4,478
SUBTOTAL	**$ 70,000**	**$ 30,634**
SUPPLIES/MATERIALS/PARTS	**15,000**	**8,109**
CAPITAL EQUIPMENT	**19,000**	**1,557**
TOTAL GENERAL FUND	**$ 1,894,000**	**$ 725,710**

ATTACHMENT B

STATE BOARD OF INVESTMENT

Travel Summary by Date
August 16, 1991 - November 15, 1991

Purpose	Name(s)	Destination and Date	Total Cost
Staff Conference National Association of State Treasurers (NAST) Annual Meeting	H. Bicker	Waterville NH 8/24-29	$1,547.24
Miscellaneous Retired Education Assoc. of Minnesota (REAM) Regional Meeting	H. Bicker	Rochester MN 9/18	$ 34.02
Manager Monitoring **Equity Managers** Forstmann, Franklin, GeoCapital, Lieber, Waddell & Reed	M. Menssen J. Guckeen	Boston/ New York City/ Kansas City 9/29-10/2	$2,543.88
Miscellaneous REAM Annual Meeting	H. Bicker	Brainerd MN 10/7	$ 67.58
Miscellaneous Meeting with Counsel and Co-Defendents on KKR Lawsuit	C. Eller	New York City 10/10-11	$1,177.37
Board Member Travel NAST Pension Conference; Council of Institutional Investors; Fidelity	M. McGrath	Boston/ New York City 10/23-11/1	$1,749.96
Board Member Travel State Auditor's Public Pension Fund Conference	J. Manahan	Minneapolis 10/24-25	$ 250.00
Staff Conference State Auditor's Public Pension Fund Conference	H. Bicker	Minneapolis 10/24-25	$ 250.00
Staff Conference National Association of State Investment Officers Annual Meeting	H. Bicker B. Lehman	Denver 10/27-30	$2,074.85

ATTACHMENT B (con't)

Purpose	Name(s)	Destination and Date	Total Cost
New Manager Search 1991-94 GIC Bid	J. Heidelberg	Boston 10/28-29	$ 909.66
New Manager Search **Equity Managers** Nicholas Applegate, Fisher	J. Guckeen	San Diego/ San Francisco 10/30-11/1	$1,411.81
New Manager Search **Equity Managers** Brandywine, Lynch & Mayer, Dietche Field, Independence, Mitchell Hutchins	M. Menssen	Boston/ New York City 10/30-11/1	$1,458.53
Manager Monitoring **Venture Capital Meeting** Summit Ventures Annual Meeting **Staff Education** Venture Capital Conf.	J. Griebenow	Boston 11/5-7	$ 864.05

Tab D

STATE OF MINNESOTA
OFFICE OF THE STATE TREASURER
ST. PAUL 55155

MICHAEL A. McGRATH
Treasurer

303 State Administration Building
50 Sherburne Avenue
St. Paul, Minnesota 55155
(612) 296-7091

DATE: December 11, 1991

TO: Members, State Board of Investment

FROM: Michael A. McGrath, Chairman
SBI Administration Committee

The SBI Administrative Committee met on December 10, 1991 to review the following items:

- o FY 1991 Audit Results
- o FY 1991 Annual Report Draft
- o Up-coming Client Conference
- o Management Options for the Environmental Trust Fund
- o Consultant Search Committee
- o Contract Extension for Dedicated Bond Portfolio Software
- o SBI Bill for 1992 Session

The last three items require action by the Board at this time.

INFORMATION ITEMS:

1) FY 1991 Audit Results

Mr. Bicker reported that the SBI received a "clean opinion" on its financial statements for FY 1991 from the Office of the Legislative Auditor. (A copy of the audit opinion letter is attachment A).

In addition, Mr. Bicker informed the Committee that no items regarding the SBI will be cited in the Legislative Auditor's management letter on administrative practices.

AN EQUAL OPPORTUNITY EMPLOYER

2) FY 1991 Annual Report Draft

The Committee discussed the comments received on the draft of the FY 1991 Annual Report. The report will be sent printer in December 1991 and copies will be distributed in mid January 1992.

3) Up-coming Client Conference

In recent years the SBI has sponsored several one-day investment seminars for its clientele. The conference has often been held early in the calendar year to coincide with the legislative session. Approximately $2,500 has been budgeted in FY92 for this year's conference. The amount covers lunch and room rental costs. Typically, speakers appear at no expense to the SBI.

Mr. Bicker recommended that planning responsibility for the conference should be handled by the SBI deputies group. Staff will work with the deputies to prepare an agenda and obtain appropriate speakers.

4) Management Options for the Environmental Trust Fund

In June, 1991, staff presented an outline of the investment policy statement for the Environmental Trust Fund (ETF) to the Asset Allocation Committee. The Committee endorsed the concepts presented in the outline, including a 75% commitment to common stock.

During the last few weeks, staff to the Legislative Commission on Minnesota Resources (LCMR) asked Mr. Bicker to develop income projections based on several alternative asset allocations:

- 100% bonds
- 50% stocks, 50% bonds
- 75% stocks, 25% bonds

The resulting spread sheets from this analysis are in Attachment B. The LCMR has asked Mr. Bicker to present this information at their December 20, 1991 meeting.

ACTION ITEMS:

1) Consultant Search Committee

The SBI's contract for consulting services with Richards & Tierney, Inc. will expire on June 30, 1992. It has been the Board's practice to issue a request for proposal (RFP) for its consultant on a three-year cycle.

While Board action will not be taken until the SBI's June 1992 meeting, a search committee should be established now to review the SBI's consulting needs.

RECOMMENDATION:

The Committee recommends that the SBI establish a Consultant Review Committee to define the SBI's consulting needs, draft the RFP, review responses, interview finalist candidates and make a recommendation to Board. The Consultant Review Committee should include a designee of each Board member and two or more members of the IAC. The Committee's recommendation should be presented to the Board at its June 1992 meeting.

2) Contract Extension for Dedicated Bond Portfolio Software

The SBI's contract for software services to assist in rebalancing the dedicated bond portfolio in the Post Retirement Fund will expire January 31, 1992. The current contract was approved for a three year period (February 1, 1989 - January 31, 1992). The vendor was selected through an RFP process.

As you know, the retirement systems are considering proposals which may alter the Post Fund's benefit increase mechanism. If changes are adopted, it is likely that the SBI's need for these software services will change significantly. As a result, the Committee believes it is prudent to extend the current contract until October 31, 1992 and then re-evaluate the need for these services. Bankers Trust, the current vendor, is willing to provide continued service with a pro rata share of the current fee arrangement ($150,000 per year).

RECOMMENDATION:

The Committee recommends that the SBI authorize the Executive Director, with assistance from SBI legal counsel, to negotiate and execute a contract extension with Bankers Trust for software services associated with the Post Fund dedicated bond portfolio.

3) SBI Bill for 1992 Session

Mr. Bicker presented several items for the SBI's 1992 Bill. Most of the changes are of a technical nature but all are important to the on-going management of the funds under the Board's control.

The changes can be summarized as follows:

- Extend the amortization period for gains and losses in both the Permanent School Fund and the Environmental Trust Fund. This will make equities a more attractive investment vehicle for the funds.

- Eliminate or reduce the front-end load on new contributions to the Supplemental Investment Fund (SIF) by instituting an asset based charge. This change will make the SIF more comparable with the investment products offered by outside vendors in the Deferred Compensation Plan.

- Add bank deposit notes as an authorized investment. This will expand the universe of securities available for purchase primarily in the short term accounts such as Invested Treasurer's Cash Fund.

- Re-name the Guaranteed Return Account. The new name, Fixed Interest Account, is a more accurate title for the portfolio.

- Add authority to purchase synthetic guaranteed investment contracts (GIC's). This would provide an alternative to conventional GIC's backed by insurance companies and banks. This may address some of the concerns raised recently about the credit quality of traditional GIC's.

- Eliminate restrictions on purchase of original issue municipal debt. This would expand the universe of securities available for investing the proceeds of the State's bond issues and their respective debt reserve accounts.

  In its discussion on this item, the Committee observed that there are several statutory safeguards against the inappropriate use of tax-exempt securities in other portfolios managed by the SBI. (See MS 11A.09 and 356A.04 which incorporate the prudent person standard of fiduciary conduct. See also MS 356.001 subd. 1 which specifies that pension funds are maintained for the exclusive benefit of beneficiaries and MS 356.651 which mandates that no assets of a public pension plan may be loaned or transferred to the state or governmental subdivision.)

- Amend reference to the "combined investment funds" to reflect current practice. This is a change recommended by legal counsel which clarifies how the SBI pools assets for efficient investment.

- Change the interest rate charged on late transfers to and from the Post Fund attributed to mortality gains and losses. This change will make the rate uniform for all

types of late transfers to and from the Basic and Post Funds.

A more detailed explanation of these changes is attached along with a section by section summary and draft language.

RECOMMENDATION:

The Committee recommends that the SBI authorize the Executive Director to seek legislative approval of these changes during the 1992 Session.

Attachment A - FY91 Audit Opinion Letter

Attachment B - Environmental Trust Fund Options

Attachment C - Narrative explanation of proposals

Attachment D - Legal advice concerning PSF and ETF changes

Attachment E - Summary of SIF front-end load charges

Attachment F - Section by section summary of draft language

Attachment G - Draft language

ATTACHMENT A

STATE OF MINNESOTA
OFFICE OF THE LEGISLATIVE AUDITOR
CENTENNIAL BUILDING, ST. PAUL, MN 55155 • 612/296-4708
JAMES R. NOBLES, LEGISLATIVE AUDITOR

Independent Auditor's Report

The State Board of Investment
and
Howard J. Bicker, Executive Director

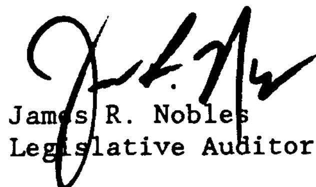
We have audited the accompanying financial statements of the Supplemental Retirement Fund and the Post Retirement Investment Fund which constitute the Investment Trust Funds of the State of Minnesota as of and for the year ended June 30, 1991, as shown on pages 2 to 7. These financial statements are the responsibility of the State Board of Investment's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

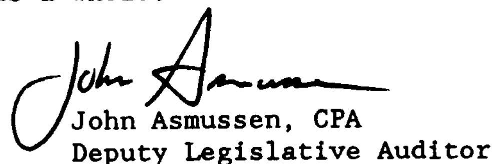
The financial statements present only the Investment Trust Funds of the State of Minnesota and are not intended to present fairly the financial position and results of operations of the State Board of Investment or the State of Minnesota in conformity with generally accepted accounting principles.

In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets and participation of the Investment Trust Funds of the State of Minnesota at June 30, 1991, and the results of their operations and changes in their net assets for the year then ended, in conformity with generally accepted accounting principles.

Our audit was made for the purpose of forming an opinion on the financial statements taken as a whole. The combining financial statements and supporting schedules on pages 10 to 77 are presented for the purposes of additional analysis and are not a required part of the Investment Trust Funds of the State of Minnesota. Such information has been subjected to the auditing procedures applied in the audit of the financial statements and, in our opinion, is fairly stated in all material respects in relation to the financial statements taken as a whole.



James R. Nobles
Legislative Auditor



John Asmussen, CPA
Deputy Legislative Auditor

November 29, 1991

ATTACHMENT B

ENVIRONMENTAL TRUST FUND OUTLINE

BACKGROUND

o Money used to improve environment.

o Legislature states that managing the environment is a long term proposition.

o Only interest and dividends can be used after 1997.

o Any realized principal losses must be offset by interest and dividends before payments can be made.

ASSET ALLOCATION ALTERNATIVES

o The environmental trust fund (ETF) is like a college or university endowment fund.

- As of 1988, the ten largest endowments had an average of 59.6% stocks, 4.8% foreign stocks, 18.4% bonds, 0.9% foreign bonds, 5.6% real estate, 2.6% venture capital, 7.1% cash, and 1% other.

o Not all investments are appropriate for the ETF.

- Fund currently small.

- Unlike endowment funds, principal is inviolate and can only spend interest and dividends. For instance, Venture Capital is probably inappropriate because it pays no dividends.

o Currently consider only domestic stocks and bonds. In future, should consider diversifying the portfolio with real estate and international equities.

STOCK/BOND ALLOCATION

o Recommend 75% equity, 20% fixed income, 5% cash with fund periodically rebalanced.

o Positives
- Meets long term objective.
- Allows real payments to remain constant.

o Negatives

- Returns and therefore income stream more volatile
- More chance to realize losses

- o The negative aspects can be minimized through proper management of the fund.

FUND MANAGEMENT

- o Should be managed to balance current income needs while maintaining fund growth to offset inflation.

- o Realized losses must be minimized. Realized losses occur due to:
  - portfolio turnover that occurs in all managed portfolios.
  - portfolio rebalancing.

Stock Portfolio Management

- o The stock portion of the portfolio should be indexed to the Wilshire 5000.

  - Analysis shows that the lower turnover of an index fund significantly reduces the potential to realize losses.

  - Index managers have lower fees and less misfit risk than active managers.

- o Rebalancing increases interest payments when stocks outperform bonds and assets are shifted to the higher yielding bonds.

Bond Management

- o The Salomon BIG Medium-Term index should be used as a benchmark.

  - Is an intermediate index which is less volatile than an index containing long bonds. This reduces the potential for realized losses.

  - Intermediates provide comparable to better returns than long bonds.

  - Will perform better in inflationary periods.

- o The portfolio should be indexed. Index accounts have lower turnover, again reducing the potential for realizing losses.

Portfolio Rebalancing

- The stock and cash portion of the portfolio should be within 5% of the allocation. (e.g. stock allocation should range from 71.25% to 78.75% of the portfolio.)

- If possible, only cash should be used to rebalance in down bond and stock markets to limit realized losses.

- Analysis shows that rebalancing would have little affect on interest and dividend payments.

Amortizing Losses

The affect of principal losses could be further minimized if the losses could be amortized. Staff recommends the installment time to recover losses should be ten years and that current gains can be used to offset losses over that same 10 year time period.

PORTFOLIO WITH 100% BONDS

YEAR	STOCK VALUE	BOND VALUE	CASH VALUE	INTEREST AND DIVIDENDS	PRINCIPAL PAYOUT	TOTAL PAYOUT	YEAR END MARKET VALUE
1991	$0	$20,000,000	$0				$20,000,000
1992	$0	$21,400,000	$0	$1,400,000	$5,750,000	$7,150,000	$38,400,000
1993	$0	$41,088,000	$0	$2,688,000	$4,600,000	$7,288,000	$57,950,000
1994	$0	$62,006,500	$0	$4,056,500	$3,450,000	$7,506,500	$78,650,000
1995	$0	$84,155,500	$0	$5,505,500	$2,300,000	$7,805,500	$100,500,000
1996	$0	$107,535,000	$0	$7,035,000	$1,150,000	$8,185,000	$123,500,000
1997	$0	$132,145,000	$0	$8,645,000		$8,645,000	$146,500,000
1998	$0	$156,755,000	$0	$10,255,000		$10,255,000	$169,500,000
1999	$0	$181,365,000	$0	$11,865,000		$11,865,000	$192,500,000
2000	$0	$205,975,000	$0	$13,475,000		$13,475,000	$215,500,000
2001	$0	$230,585,000	$0	$15,085,000		$15,085,000	$238,500,000
2002	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2003	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2004	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2005	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2006	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2007	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2008	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2009	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2010	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2011	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2012	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2013	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2014	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2015	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2016	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2017	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2018	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2019	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2020	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000
2021	$0	$255,195,000	$0	$16,695,000		$16,695,000	$238,500,000

PORTFOLIO WITH 50% STOCKS 45% BONDS AND 5% CASH

YEAR	STOCK VALUE	BOND VALUE	CASH VALUE	INTEREST AND DIVIDENDS	PRINCIPAL PAYOUT	TOTAL PAYOUT	YEAR END MARKET VALUE
1991	$10,000,000	$9,000,000	$1,000,000				$20,000,000
1992	$11,050,000	$9,630,000	$1,050,000	$980,000	$5,750,000	$6,730,000	$39,150,000
1993	$21,630,375	$18,850,725	$2,055,375	$1,918,350	$4,600,000	$6,518,350	$60,168,125
1994	$33,242,889	$28,970,952	$3,158,827	$2,948,238	$3,450,000	$6,398,238	$83,124,430
1995	$45,926,247	$40,024,413	$4,364,033	$4,073,097	$2,300,000	$6,373,097	$107,631,596
1996	$59,466,457	$51,824,613	$5,650,659	$5,273,948	$1,150,000	$6,423,948	$134,667,781
1997	$74,403,949	$64,842,536	$7,070,058	$6,598,721		$6,598,721	$162,717,822
1998	$89,901,597	$78,348,631	$8,542,686	$7,973,173		$7,973,173	$191,819,741
1999	$105,980,407	$92,361,205	$10,070,536	$9,399,167		$9,399,167	$222,012,981
2000	$122,662,172	$106,899,250	$11,655,682	$10,878,636		$10,878,636	$253,338,468
2001	$139,969,503	$121,982,472	$13,300,270	$12,413,585		$12,413,585	$285,838,660
2002	$157,925,860	$137,631,315	$15,006,530	$14,006,094		$14,006,094	$296,557,610
2003	$163,848,080	$142,792,489	$15,569,275	$14,531,323		$14,531,323	$307,678,521
2004	$169,992,383	$148,147,208	$16,153,122	$15,076,248		$15,076,248	$319,216,465
2005	$176,367,097	$153,702,728	$16,758,864	$15,641,607		$15,641,607	$331,187,082
2006	$182,980,863	$159,466,580	$17,387,322	$16,228,167		$16,228,167	$343,606,598
2007	$189,842,645	$165,446,577	$18,039,346	$16,836,723		$16,836,723	$356,491,845
2008	$196,961,745	$171,650,824	$18,715,822	$17,468,100		$17,468,100	$369,860,290
2009	$204,347,810	$178,087,729	$19,417,665	$18,123,154		$18,123,154	$383,730,051
2010	$212,010,853	$184,766,019	$20,145,828	$18,802,772		$18,802,772	$398,119,927
2011	$219,961,260	$191,694,745	$20,901,296	$19,507,876		$19,507,876	$413,049,425
2012	$228,209,807	$198,883,298	$21,685,095	$20,239,422		$20,239,422	$428,538,778
2013	$236,767,675	$206,341,422	$22,498,286	$20,998,400		$20,998,400	$444,608,982
2014	$245,646,463	$214,079,225	$23,341,972	$21,785,840		$21,785,840	$461,281,819
2015	$254,858,205	$222,107,196	$24,217,296	$22,602,809		$22,602,809	$478,579,887
2016	$264,415,388	$230,436,216	$25,125,444	$23,450,414		$23,450,414	$496,526,633
2017	$274,330,965	$239,077,574	$26,067,648	$24,329,805		$24,329,805	$515,146,382
2018	$284,618,376	$248,042,983	$27,045,185	$25,242,173		$25,242,173	$534,464,371
2019	$295,291,565	$257,344,595	$28,059,379	$26,188,754		$26,188,754	$554,506,785
2020	$306,364,999	$266,995,017	$29,111,606	$27,170,832		$27,170,832	$575,300,790
2021	$317,853,686	$277,007,330	$30,203,291	$28,189,739		$28,189,739	$596,874,569

PORTFOLIO WITH 75% STOCKS
20% BONDS AND 5% CASH

YEAR	STOCK VALUE	BOND VALUE	CASH VALUE	INTEREST AND DIVIDENDS	PRINCIPAL PAYOUT	TOTAL PAYOUT	YEAR END MARKET VALUE
1991	$15,000,000	$4,000,000	$1,000,000				$20,000,000
1992	$16,575,000	$4,280,000	$1,050,000	$780,000	$5,750,000	$6,530,000	$39,525,000
1993	$32,756,344	$8,458,350	$2,075,063	$1,541,475	$4,600,000	$6,141,475	$61,298,281
1994	$50,800,951	$13,117,832	$3,218,160	$2,390,633	$3,450,000	$5,840,633	$85,446,310
1995	$70,813,629	$18,285,510	$4,485,931	$3,332,406	$2,300,000	$5,632,406	$111,642,664
1996	$92,523,858	$23,891,530	$5,861,240	$4,354,064	$1,150,000	$5,504,064	$140,922,564
1997	$116,789,575	$30,157,429	$7,398,435	$5,495,980		$5,495,980	$171,849,459
1998	$142,420,239	$36,775,784	$9,022,097	$6,702,129		$6,702,129	$204,515,991
1999	$169,492,627	$43,766,422	$10,737,090	$7,976,124		$7,976,124	$239,020,015
2000	$198,087,838	$51,150,283	$12,548,551	$9,321,781		$9,321,781	$275,464,891
2001	$228,291,528	$58,949,487	$14,461,907	$10,743,131		$10,743,131	$313,959,791
2002	$260,194,177	$67,187,395	$16,482,889	$12,244,432		$12,244,432	$331,620,029
2003	$274,830,099	$70,966,686	$17,410,052	$12,933,181		$12,933,181	$350,273,656
2004	$290,289,292	$74,958,562	$18,389,367	$13,660,673		$13,660,673	$369,976,549
2005	$306,618,065	$79,174,982	$19,423,769	$14,429,085		$14,429,085	$390,787,730
2006	$323,865,331	$83,628,574	$20,516,356	$15,240,721		$15,240,721	$412,769,540
2007	$342,082,756	$88,332,682	$21,670,401	$16,098,012		$16,098,012	$435,987,826
2008	$361,324,911	$93,301,395	$22,889,361	$17,003,525		$17,003,525	$460,512,142
2009	$381,649,437	$98,549,598	$24,176,887	$17,959,974		$17,959,974	$486,415,950
2010	$403,117,218	$104,093,013	$25,536,837	$18,970,222		$18,970,222	$513,776,847
2011	$425,792,562	$109,948,245	$26,973,284	$20,037,297		$20,037,297	$542,676,794
2012	$449,743,393	$116,132,834	$28,490,532	$21,164,395		$21,164,395	$573,202,364
2013	$475,041,459	$122,665,306	$30,093,124	$22,354,892		$22,354,892	$605,444,997
2014	$501,762,541	$129,565,229	$31,785,862	$23,612,355		$23,612,355	$639,501,278
2015	$529,986,684	$136,853,274	$33,573,817	$24,940,550		$24,940,550	$675,473,225
2016	$559,798,435	$144,551,270	$35,462,344	$26,343,456		$26,343,456	$713,468,594
2017	$591,287,097	$152,682,279	$37,457,101	$27,825,275		$27,825,275	$753,601,202
2018	$624,546,997	$161,270,657	$39,564,063	$29,390,447		$29,390,447	$795,991,270
2019	$659,677,765	$170,342,132	$41,789,542	$31,043,660		$31,043,660	$840,765,779
2020	$696,784,639	$179,923,877	$44,140,203	$32,789,865		$32,789,865	$888,058,854
2021	$735,978,775	$190,044,595	$46,623,090	$34,634,295		$34,634,295	$938,012,165

REAL DOLLAR VALUES
PRINCIPAL PLUS INTEREST
4.5% INFLATION

YEAR	100% BONDS	50% STOCKS	75% STOCKS	50% STOCKS/ 100%BONDS	75%STOCKS/ 100%BONDS
1991					
1992	$6,842,105	$6,440,191	$6,248,804	94.13%	91.33%
1993	$6,673,840	$5,969,048	$5,623,933	89.44%	84.27%
1994	$6,577,920	$5,606,754	$5,118,127	85.24%	77.81%
1995	$6,545,391	$5,344,233	$4,723,118	81.65%	72.16%
1996	$6,568,062	$5,172,991	$4,431,138	78.76%	67.46%
1997	$6,638,459	$5,085,087	$4,234,891	76.60%	63.79%
1998	$7,535,666	$5,876,743	$4,939,623	77.99%	65.55%
1999	$8,343,292	$6,627,055	$5,623,557	79.43%	67.40%
2000	$9,067,387	$7,337,856	$6,287,693	80.93%	69.34%
2001	$9,713,649	$8,010,898	$6,932,987	82.47%	71.37%
2002	$10,287,438	$8,647,860	$7,560,355	84.06%	73.49%
2003	$9,844,438	$8,585,794	$7,641,746	87.21%	77.63%
2004	$9,420,515	$8,524,173	$7,724,014	90.49%	81.99%
2005	$9,014,847	$8,462,995	$7,807,167	93.88%	86.60%
2006	$8,626,648	$8,402,256	$7,891,215	97.40%	91.47%
2007	$8,255,165	$8,341,953	$7,976,169	101.05%	96.62%
2008	$7,899,680	$8,282,082	$8,062,037	104.84%	102.06%
2009	$7,559,502	$8,222,641	$8,148,829	108.77%	107.80%
2010	$7,233,973	$8,163,627	$8,236,555	112.85%	113.86%
2011	$6,922,463	$8,105,037	$8,325,226	117.08%	120.26%
2012	$6,624,366	$8,046,866	$8,414,852	121.47%	127.03%
2013	$6,339,106	$7,989,114	$8,505,443	126.03%	134.17%
2014	$6,066,130	$7,931,776	$8,597,008	130.76%	141.72%
2015	$5,804,909	$7,874,849	$8,689,560	135.66%	149.69%
2016	$5,554,937	$7,818,331	$8,783,108	140.75%	158.11%
2017	$5,315,729	$7,762,219	$8,877,663	146.02%	167.01%
2018	$5,086,822	$7,706,509	$8,973,236	151.50%	176.40%
2019	$4,867,773	$7,651,199	$9,069,838	157.18%	186.32%
2020	$4,658,156	$7,596,286	$9,167,479	163.07%	196.80%

ASSUMPTIONS AND DEFINITIONS

Return Assumptions (%)

	Stocks	Bonds	Cash
Annual Returns	10.5	7.0	5.0
Dividends and Interest	3.0	7.0	5.0

Payout Assumptions

o All interest and dividends are paid annually.

o The interest and dividend payments are calculated based on the previous year market values. For instance, in 1993 the interest and dividend payment for 50% stocks, 45% bonds and 5% cash was calculated using the year end 1992 market value as follows:

Stocks Bonds

0.03(0.50 x $39,150,000) + 0.07(0.45 x $39,150,000 +

Cash

0.05(0.05 x $39,150,000) = $1,918,000

o The principal payouts are based on the Minnesota Environment and Natural Resources Trust Fund Strategic Plan draft, section 116p.11. For instance, it states that for the 1993-1995 biennium, up to 20 percent of the revenue deposited in the trust fund in fiscal year 1992 and up to 15 percent of the revenue deposited in the fund in fiscal year 1993 can be spent. Therefore it is assumed that the 1992 revenue is spent in 1993 and the 1993 revenue in 1994. It is assumed the revenue for each year through 2001 is $23 million.

o It is assumed no additional interest is earned on the interest or principal earmarked for use.

Definition of Market Value

The market value is the sum of the stock, bond and cash values plus whatever was added to the fund from the lottery minus the interest and dividend payments. It is assumed $23 million was collected annually through 2001. From 1992 - 1995, 80, 85, 90, and 95 percent of $23 million was added to principal.

ATTACHMENT C

1992 SBI BILL
NARRATIVE EXPLANATION OF PROPOSED CHANGES

Permanent School Fund: Amortization of Gains and Losses

The Permanent School Fund (PSF) is established by the Minnesota Constitution and was created as a long-term source of revenue for Minnesota's public schools. The Constitution provides that investments constituting the principal of the fund must remain "inviolate." Securities comprising the principal may be sold at either a loss or a gain. However, any net loss must be offset by interest and dividend income, thereby reducing the amount of earnings that is distributed to school districts throughout the state. As a result of these restrictions, the SBI has invested the PSF predominately in bonds in order to maximize current income.

In its April 1991 report entitled "State Investment Performance," the Legislative Auditor recommended that the SBI re-introduce equities into the PSF portfolio in order to increase the size of the Fund over time and thereby increase the amount of earnings that can be generated. A switch to lower yielding stocks from higher yielding bonds would reduce the near term amount of earnings that would be available to distribute to school districts.

The procedure for calculating the net interest and dividend income is provided for in statute. The proposed amendment would allow the SBI to recover losses over a 10 year period. Realized gains would be used to offset losses over the same 10 year period. This proposal would reduce the volatility of the income stream and would make equities a more attractive investment for the PSF.

A copy of legal advice from William H. Kuretsky, Special Assistant Attorney General, concerning the proposal is attached.

Environmental Trust Fund: Amortization of Gains and Losses

The Environmental Trust Fund (ETF) is established in the Minnesota Constitution and was created as a long-term source of revenue for the benefit of Minnesota's environment. Like the PSF, the principal of the ETF fund must remain inviolate and net losses from the sale of securities must be offset by interest and dividend income. This offset reduces the amount of earnings available to fund environmental projects.

In order to mitigate the impact of principal losses on the amount of earnings that may be expended from the fund, staff recommends that statutory language be added allowing the recovery of losses

over a 10 year period. Realized gains would be used to offset losses over the same 10 year period.

A copy of legal advice from William H. Kuretsky, Special Assistant Attorney General, concerning the proposal is attached.

Supplemental Investment Fund: Asset Based Administrative Charge

The proposal would eliminate or reduce the front-end charge on new contributions into the Supplemental Investment Fund and replace it with an asset based charge. The front-end charge is used to pay plan administrative expenses incurred by the administering plan, not the SBI. The front-end load would be replaced by a charge against investment earnings that would be distributed to participating plans or funds to defray their expenses.

The proposal contains the following elements:

1) The asset based charge will be set to cover the administrative cost needs of MSRS for the Deferred Compensation Plan, which is the largest plan in the SIF. The charge will slightly reduce share values for each account.

2) The asset based charge will apply to every participating plan or fund in the SIF. Those plans that do not receive sufficient administrative dollars to cover their plan administrative expenses will retain the statutory authority to charge a front-end load on new contributions into their plans.

3) Participating plans or funds that do not currently have statutory authority to deduct a front-end load on new contributions will have the option to receive the asset based charge or purchase additional shares or units in the respective accounts. By choosing to purchase additional shares the administering organization would maintain the account balances for their participants as if no change had been introduced.

4) Language is added to clarify that the Community College and State University Systems have statutory authority to deduct a front end load on new contributions into the Individual Retirement Account Plan.

A chart summarizing the change for all participants in the SIF is attached. The proposal would take effect July 1, 1992 at the start of the new fiscal year.

The proposed change is necessary to make the Supplemental Investment fund comparable to the investment products offered by outside vendors in the Deferred Compensation Plan. Currently, MSRS charges an administrative fee on all new contributions into the SIF. The fee looks like an additional charge in comparison

to the products of the outside vendors who charge no comparable fee. The proposal would eliminate the front-end load on the SIF to match the no-load nature of the outside vendor products. This change will make it easier for participants to compare overall costs between the three vendors.

An asset based charge is also a more equitable method for assessing participants. Currently, a person who participates several years but no longer contributes pays no administrative expenses yet receives the on-going benefits of having his/her account maintained by the sponsoring plan. Further, a front-end load causes participants with a larger account balances to pay a lower fee than a participant with a smaller account. The asset based fee would eliminate this inequity.

Guaranteed Return Account: Name Change to Fixed Return Account

The Guaranteed Return Account would be renamed the Fixed Interest Account to clarify the nature of the account.

The account is invested in instruments that are called guaranteed investment contracts (GIC's), which are purchased from insurance companies or banks. The phrase "guaranteed return" implies that there is some sort of guarantee beyond the financial ability of the insurance carrier to pay back the principal and stated interest rate. The proposed new name would focus attention on the fixed interest rate feature of the GIC's rather than on the term "guaranteed," which may be misleading.

New Investment Authority: Synthetic GIC's

The proposal would allow the SBI to invest in synthetic or alternative guaranteed investment contracts (GIC's).

GIC's are investments primarily with life insurance companies. Currently, the life insurance industry is experiencing financial pressure primarily from the downturn in the real estate market and junk bonds. These risks are reflected in the general downgrading of many companies by the national rating agencies. Assets backing traditional GIC's are in a life insurance company's general account.

A synthetic GIC offers a way to retain the fixed interest feature of a GIC while reducing the risk associated with default. A synthetic GIC segregates a pool of assets from the insurance company's general account for the purpose of paying principal and interest on the synthetic GIC. The separate pool feature allows the investor to retain control of the assets in the event of the insurance company's default. As a result, the credit quality of the investment may be viewed in terms of the ratings of the assets (i.e., U.S. Treasuries, high quality corporate bonds, mortgage-backed securities, etc.) rather than the strength of the insurance company.

New Investment Authority: Deposit Notes

The proposal would allow the SBI to invest in medium term debt securities issued by banks known as "deposit notes".

Deposit notes are much like medium term corporate notes with terms of less than 10 years. Deposit notes, like bank certificates of deposit, carry the rating of the issuing bank. Deposit notes also have precedence over corporate notes in bankruptcy.

The SBI would use deposit notes in the cash pools to fill out the 9 months to 3 year portion of the maturity spectrum.

New Investment Authority: Original Issue Municipal Debt

The proposal would eliminate Section 11A.04, paragraph 8, which prohibits the SBI from purchasing municipal bonds directly from the issuing unit of government or from the governmental unit's investment agent. This provision was placed in statute in 1960 to prohibit the inappropriate use the pension funds as a repository for Minnesota municipal tax exempt debt. Prior to that time, the SBI's portfolio contained many tax-exempt, low yielding municipal bonds.

Eliminating the provision would allow the SBI to consider "arms length" transactions with investment bankers which sell existing or new issue tax exempt throughout the United States and in so doing allow the SBI to expand the universe of available securities for certain portfolios. This proposal would not alter the quality criteria the SBI uses. The SBI would continue to consider only the higher rated issues as provided in statute.

The SBI purchases tax-exempt debt to invest bond proceeds and debt reserve funds for the State of Minnesota. A governmental unit may not issue bonds and invest the proceeds to earn more than the effective interest rate on the bond issue unless the investment is made in the tax exempt market. Therefore, in order to maximize earnings on bond proceed and debt reserve portfolios, the SBI has an incentive to invest in the tax-exempt market. The current statutory provision restricts the universe of securities that can be purchased for this purpose to the secondary tax-exempt market. Since the secondary market is very small, it is sometimes difficult to find appropriate securities.

Eliminating language of 11A.04 paragraph 8 would expand the universe of available securities to the primary as well as secondary markets. Staff believes there is sufficient protection in other statutes to guard against the inappropriate purchase of tax-exempt debt for pension and trust fund portfolios:

- Section 356.001, subdivision 1 states that: "The public plans and funds are established and shall be maintained for the exclusive benefit of the members and the beneficiaries of

the members." This language would prohibit the investment of pension assets for the purpose of subsidizing local or state debt.

- Section 356.651 also states that the retirement fund may be used exclusively to pay retirement benefits and reasonable administrative expenses. In addition, the section stipulates that: "No assets of a public pension plan may be loaned or transferred to the state or a governmental subdivision..." The investment of pension assets for the purpose of subsidizing local or state debt would be prohibited as a loan to the state or a governmental subdivision.

Combined Investment Funds: Clarification of Pool Structure

This proposal is a housekeeping measure to clarify the manner in which the SBI pools assets for efficient investment.

The language of 11A.14 subdivision 2 currently stipulates that participation by each plan or fund is in each combined fund account created by the SBI. This provision is inaccurate because all participating funds do not participate in each combined fund account. (For example, the Post Fund does not participate in the alternative investment accounts.) The proposed change would provide that each plan or fund participates in a given pool only to the extent authorized by the SBI.

ATTACHMENT D

STATE OF MINNESOTA
Office Memorandum

Attorney General's Office

Date: July 24, 1991

To: Beth Lehman
Deputy Executive Director - State Board of Investment

From: William H. Kuretsky
Special Assistant Attorney General

Phone: (612) 296-9806

Subject: Proposed Changes to Permanent School Fund and Environmental Trust Fund Statutes

SUMMARY

The basic "bare bones" structure for the Permanent School Fund and the Environmental Trust Fund is contained in the Minnesota Constitution, with additional language needed to implement the intent thereof contained in the Minnesota Statutes. The proposed statutory amendments delineated hereinbelow appear to only effect those provisions contained in the Minnesota Statutes regarding the implementation of such funds. Therefore, any or all of such proposed statutory amendments may be adopted without being in direct conflict with any of the provisions contained in the Minnesota Constitution, or any other state or federal law.

PROPOSED STATUTORY AMENDMENTS

You have asked whether or not any of the following proposed statutory amendments could be implemented without being in conflict with any of the provisions conta ned in the Minnesota Constitution, or any other applicable state or federal law:

1. Add language regarding the amortization of capital losses to Minn. Stat. §116P.11 (1990)[1] to make it correspond to the language regarding the amortization of capital losses contained in the Minn. Stat. §11A.16 Subd.5(b) (1990)[2].

2. Amend Minn. Stat. §11A.16 Subd.5(b) (1990) to expand the time period over which equity losses are to be amortized from a five (5) year time period to a ten (10) year time period, and add similar language to Minn. Stat. §116P.11 (1990).

3. Amend Minn. Stat. §11A.16 Subd.5(b) (1990) to allow the State Board of Investment to set aside a portion of current realized capital gains to offset future capital

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1 Environmental Trust Fund statute.
2 Permanent School Fund statute.

losses, and add similar language to Minn. Stat. §116P.11 (1990). The specific changes in Minn Stat. §11A.16 Subd.5(b) (1990) would be as follows:

> As of the end of each fiscal year, the state board shall calculate the investment income earned by the permanent school fund. The investment income earned by the fund shall equal the amount of interest on debt securities and dividends on equity securities. Gains and losses arising from the sale of securities shall be apportioned as follows:
>
> (a) If the sale of securities results in a net gain during a fiscal year, the gain shall be apportioned in equal installments over the next ten fiscal years to offset net losses in those years. If any portion of an installment is not needed to recover subsequent losses identified in (b) it shall be added to the principle of the fund.
>
> (b) If the sale of securities results in a net loss during a fiscal year, the net loss shall be recovered first from the gains in (a) apportioned to that fiscal year If such gains are insufficient, any remaining net loss shall be recovered from interest and dividend income in equal installments over the following five fiscal years ~~a period equal to (a) the average period prior to maturity remaining on the debt securities which were sold if the sale of debt securities resulted in the loss, or (b) over a period of five years if the sale of equity securities resulted in the lose unless there is a net gain in the sale of securities sufficient to eliminate the amount of the loss prior to the end of the period. In any fiscal year in which gains on the sale of securities exceed th losses on the sale of securities, the excess shall be added to the principal of the fund~~.

ANSWER

Any or all of the proposed statutory amendments may be adopted without being in direct conflict with any of the provisions contained in the Minnesota Constitution, or any other state or federal law.

DISCUSSION

The Permanent School Fund and the Environmental Trust Fund are both established by way of provisions in the Minnesota Constitution[3], and were created as long-term sources of revenue for Minnesota's public schools and to protect Minnesota's environment, respectively. The provisions contained in the Minnesota Constitution only delineate the basic structure for each such fund, with the actual provisions regarding the operation thereof left to be filed in by the Minnesota Statutes. The applicable statutes are *Minn. Stat.* §11A.16 (1990) for the Permanent School Fund, and Chapter 116P of the *Minnesota Statutes* for the Environmental Trust Fund. Because of the way such funds were created (i.e. established by constitutional provision with details implemented by statute), the details

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[3] The enabling provision for the Permanent School Fund is contained in Article XI, Section 8 of the *Minnesota Constitution*, and the enabling provision for the Environmental Trust Fund is contained in Article XI, Section 14 of the *Minnesota Constitution*.

of how each such fund operates may be modified by simply amending the appropriate statute, as long as the basic structure mandated by the constitution is not changed or any other state or federal law is impinged upon.

Proposed statutory amendments No. 2 and 3 as they relate to the Permanent School Fund.

The provision in the Minnesota Constitution which deals with the Permanent School Fund[4] contains the following explicit or implicit requirements:

(i) Investments constituting the principal of the fund may be sold at either a gain or a loss;

(ii) All losses are first to be offset against any gains, and if there are not sufficient gains then the remaining losses are to be repaid from future interest and dividends generated by the principal of the fund; and

(iii) The net interest and dividends generated by the principal of the fund are to be distributed to the different school districts of the state.

Although Article XI, Section 8 of the *Minnesota Constitution* specifically (i) authorizes all losses caused by the sale of any investments contained in the Permanent School Fund to be directly offset against any gains, (ii) requires any losses not set-off by gains to be repaid from future interest and dividends generated by the principal of the Permanent School Fund, and (iii) mandates that the net interest and dividends generated by the principal of the Permanent School Fund be distributed to the different school districts of the state; it does not specifically state what time periods such offset and repayment applies to (i.e. does this apply on a daily, weekly, monthly yearly, etc. basis), or when such distribution is to be made, and leaves the timing of such matters to be set by statute[5]. Since the procedure for calculating the set-off and establishing the date for the distribution of net interest and dividends is not mandated by the Minnesota Constitution and left to the statutes, it would appear to be logical that an extension of the time period over which any net gain or loss produced by the sale of securities is to be calculated and amortized, as long as such time period is reasonable[6], may be accomplished by statute, and does not require a constitutional amendment.

It is always possible that a Court would narrowly construe Article XI, Section 8 of the *Minnesota Constitution,* and therefore invalidate any of the proposed statutory

4 Article XI, Section 8 of the *Minnesota Constitution.*

5 Minn. Stat. §11A.16 subd. 5 (1990) mandates that such set-off be done and distribution be made at the end of each fiscal year.

6 Although it is impossible to accurately predict what time period a Court would deem to be reasonable, and what time period a Court would be deem to be unreasonable, the time periods included in the proposed statutory amendments would appear to be reasonable.

amendments. However, although it is not completely clear from either the provisions in the Minnesota Constitution or the Minnesota Statutes, it is my belief that proposed statutory amendments number 2 and 3, as they are specified hereinabove and relate to the Permanent School Fund, can be implemented without being in conflict with any of the provisions contained in the Minnesota Constitution or any other state or federal law.

Proposed statutory amendments No. 1, 2 and 3 as they relate to the Environmental Trust Fund.

The provision in the Minnesota Constitution which deals with the Environmental Trust Fund[7] contains the following explicit or implicit requirements:

(i) Investments constituting the principal of the fund may be sold at either a gain or a loss;

(ii) All losses are first to be offset against any gains, and if there are not sufficient gains then the remaining losses are to be repaid from future earnings generated by the principal of the fund; and

(iii) The net earnings generated by the principal of the fund are to be appropriated for certain public purposes relating to the environment.

Since the provisions contained in the Minnesota Constitution regarding the Environmental Trust Fund are similar to the provisions contained therein for the Permanent School Fund, the following remarks regarding he Environmental Trust Fund are similar to the previous remarks regarding the Permanent School Fund. Although Article XI, Section 14 of the *Minnesota Constitution* specifically (i) authorizes all losses caused by the sale of any investments contained in the Environmental Trust Fund to be directly offset against any gains, (ii) requires any losses not set-off by gains to be repaid from future earnings generated by the principal of the Environmental Trust Fund, and (iii) mandates that the net earnings generated by the principal of the Environmental Trust Fund be appropriated for certain public purposes relating to the environment; it does not specifically state what time periods such offset and repayment applies to (i.e. does this apply on a daily, weekly, monthly yearly, etc. basis), or when such appropriation is to be made, and leaves the timing of such matters to be set by statute[8]. Since the procedure for calculating the set-off and establishing the date for the appropriation of net earnings is not mandated by the Minnesota Constitution and left to the statutes, it would appear to be logical that establishment of the time period over which any net gain or loss produced by the sale of

[7] Article XI, Section 14 of the *Minnesota Constitution*.

[8] Minn. Stat. §116P.1 (1990) mandates that such appropriation occur at the end of each biennium. However, there does not appear to be any provision in the statutes regarding the calculation of the set-off, or the timing for the repayment of any losses.

securities is to be calculated and amortized, as long as such time period is reasonable[9], may be accomplished by statute, and does not require a constitutional amendment.

As with the Permanent School Fund, it is always possible that a Court would narrowly construe Article XI, Section 14 of the *Minnesota Constitution,* and therefore invalidate any of the proposed statutory amendments. Therefore, although it is not completely clear from either the provisions in the Minnesota Constitution or the Minnesota Statutes, it is my belief that proposed statutory amendments number 1, 2 and 3, as they are specified hereinabove and relate to the Environmental Trust Fund, can be implemented without being in conflict with any of the provisions contained in the Minnesota Constitution or any other state or federal law.

c.c. Christie Eller

9 Although it is impossible to accurately predict what time period a Court would deem to be reasonable, and what time period a Court would be deem to be unreasonable, the time periods included in the proposed statutory amendments would appear to be reasonable.

ATTACHMENT E

Summary of Supplemental Fund Change

Plan	Administering Organization	Current Front-End Load	Proposed Front-End Load
Deferred Comp	MSRS	1.5%	None
Unclassified Employees	MSRS	2.0%	Up to 2.0% on new contributions authorized. Organization would establish the rate based on projected costs.
Defined Contribution	PERA	2.0%	"
College Supplemental	Community College and State University Sys.	2.0%	"
Individual Ret. Account	Community College and State University Sys.	None	"
Hennepin Cty. Supplemental	Hennepin County	None	None
Local Police and Fire	Local	None	None

ATTACHMENT F

STATE BOARD OF INVESTMENT

PROPOSED STATUTORY CHANGES
1992 LEGISLATIVE SESSION

Section by Section Summary

Section 1	Duties and Powers of the State Board (11A.04) Allows SBI to invest in tax exempt municipal debt.
Section 2	Combined Investment Funds (11A.14, subdivision 2) Clarifies that the various funds managed by the SBI participate in combined asset accounts rather than in combined funds. This is a housekeeping change.
Section 3	Permanent School Fund (11A.16, subdivision 5) Allows SBI to set aside a portion of current realized gains to offset future losses in order to make equities a more attractive investment.
Sections 4-6	Supplemental Investment Fund (11A.17, subdivision 1) Renames the guaranteed return account the fixed interest account.
Section 7	Supplemental Investment Fund (11A.17, new subdivision) Adds necessary language to implement new asset based charge for payment of fund administrative expenses.
Section 8	Supplemental Investment Fund (11A.17, subdivision 14) Adds necessary language to implement new asset based charge and renames the guarantee return account the fixed interest account.

Section 9	Mortality Adjustments in Post Fund (11A.18, subdivision 11) Changes the interest rate charged on late payment of mortality adjustments to conform with language elsewhere in statute setting interest rate charges on other payments to the Post.
Section 10	Environmental Trust Fund (116P.11) Allows SBI to set aside a portion of current realized gains to offset future losses in order to make equities a more attractive investment.
Section 11	Unclassified Employees Plan (352D.04, subdivision 1) Renames the guaranteed return account the fixed interest account.
Section 12	Unclassified Employees Plan (352D.085, subdivision 7) Adds necessary language to implement the change to the asset based charge within the supplemental investment fund.
Section 13	PERA Defined Contribution Plan (353D.05, subdivision 2) Renames the guaranteed return account the fixed interest account.
Section 14	PERA Defined Contribution Plan (353D.05, subdivision 3) Adds necessary language to implement the change to the asset based charge within the supplemental investment fund.
Section 15	Individual Retirement Account Plan (354B.04, new subdivision) Adds deductions from contributions into the IRAP as part of the change to the asset based charge.
Section 16 & 18	Individual Retirement Account pLan (354B.05, subdivision 3; 354B.07, subdivision 2) Renames the guaranteed return account the fixed interest account.

Section 17 — Other Obligations Purchased by State Board (11A.24, subdivision 4)

Adds authority to purchase deposit notes of banks and synthetic GIC's (alternative guaranteed investment contracts).

Section 19 — Effective Date

All changes are effective July 1, 1992.

ATTACHMENT G

Section 1. Minnesota Statutes 1990, section 11A.04 is amended to read:

11A.04 DUTIES AND POWERS

The state board shall:

(1) Act as trustees for each fund for which it invests or manages money in accordance with the standard of care set forth in section 11A.09 if state assets are involved and in accordance with chapter 356A if pension assets are involved.

(2) Formulate policies and procedures deemed necessary and appropriate to carry out its functions. Procedures adopted by the board must allow fund beneficiaries and members of the public to become informed of proposed board actions. Procedures and policies of the board are not subject to the administrative procedure act.

(3) Employ an executive director as provided in section 11A.07.

(4) Employ investment advisors and consultants as it deems necessary.

(5) Prescribe policies concerning personal investments of all employees of the board to prevent conflicts of interest.

(6) Maintain a record of its proceedings.

(7) As it deems necessary, establish advisory committees subject to section 15.059 to assist the board in carrying out its duties.

~~(8) Not permit state funds to be used for the underwriting or direct purchase of municipal securities for the issuer or the issuer's agent.~~

~~(9)~~ (8) Direct the state treasurer to sell property other than money that has escheated to the state when the board determines that sale of the property is in the best interest of the state. Escheated property must be sold to the highest bidder in the manner and upon terms and conditions prescribed by the board.

~~(10)~~ (9) Undertake any other activities necessary to implement the duties and powers set forth in this section.

~~(11)~~ (10) Establish a formula or formulas to measure management performance and return on investment. Public pension funds in the state shall utilize the formula or formulas developed by the state board.

~~(12)~~ (11) Except as otherwise provided in article XI, section 8, of the constitution of the state of Minnesota, employ, at its discretion, qualified private firms to invest and manage the assets of funds over which the state board has investment management responsibility. There is annually appropriated to the state board, from the assets of the funds for which the state board utilizes a private investment manager, sums efficient to pay the costs of employing private firms. Each year, by January 15, the board shall report to the governor and legislature on the cost and the investment performance of each investment manager employed by the board.

~~(13)~~ (12) Adopt an investment policy statement that includes investment objectives, asset allocation, and the investment management structure for the retirement fund assets under its control. The statement may be revised at the discretion of the state board. The state board shall seek the advice of the council regarding its investment policy statement. Adoption of the statement is not subject to chapter 14.

Sec. 2. Minnesota Statutes 1990, section 11A.14, subdivision 2, is amended to read:

Subd. 2. **Assets.** The assets of the combined investment funds shall consist of the money certified to and received by the state board from participating retirement plans and funds which shall be used to purchase investment shares in the appropriate investment accounts. Each participating fund shall own an undivided participation in all the assets of the particular accounts of the combined funds in which it participates. As of any date, the total claim of a participating fund on the assets in each account shall be equal to the ratio of units owned by a fund in each account to the total issued units then outstanding.

Sec. 3. Minnesota Statutes 1990, section 11A.16, subd. 5, is amended to read:

Subd. 5. **Calculation of income.** As of the end of each fiscal year, the state board shall calculate the investment income earned by the permanent school fund. The investment income earned by the fund shall equal the amount of interest on

debt securities and dividends on equity securities. Gains and losses arising from the sale of securities shall be apportioned as follows: (a) If the sale of securities results in a net gain during a fiscal year, the gain shall be apportioned in equal installments over the next ten fiscal years to offset net losses in those years. If any portion of an installment is not needed to recover subsequent losses identified in (b) it shall be added to the principal of the fund. (b) If the sale of securities results in a net loss during a fiscal year, the net loss shall be recovered first from the gains in (a) apportioned to that fiscal year. If such gains are insufficient, any remaining net loss shall be recovered from interest and dividend income in equal installments over the following ten fiscal years ~~a period equal to (a) the average period prior to maturity remaining on the debt securities which were sold if the sale of debt securities resulted in the loss, or (b) over a period of five years if the sale of equity securities resulted in the loss unless there is a net gain in the sale of securities sufficient to eliminate the amount of the loss prior to the end of the period. In any fiscal year in which gains on the sale of securities exceed the losses on the sales of securities, the excess shall be added to the principal of the fund.~~

Sec. 4. Minnesota Statutes 1990, section 11A.17, subd. 1, is amended to read:

Subd. 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 investment accounts: an income share account, a growth share account, a money market account, a ~~guaranteed return~~ 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. 5. Minnesota Statutes 1990, section 11A.17, subd. 4, is amended to read:

Subd. 4. **Investment.** The assets of the supplement fund must be invested by the state board subject to section 11A.24; provided, however, that:

(1) the bond market account and the money market account must be invested entirely in debt obligations;

(2) the growth share account and the common stock index account may be invested entirely in corporate stocks; and

(3) the ~~guaranteed return~~ fixed interest account may be invested entirely in guaranteed investment contracts and debt obligations specified in 11A.24.

Sec. 6. Minnesota Statutes 1990, section 11A.17, subd. 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 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. The value of investment shares in the money market account and the ~~guaranteed return~~ 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.

Sec. 7. Minnesota Statutes 1990, section 11A.17, is amended to by adding a subdivision to read:

Subd. 10a. **Distribution of earnings.** Once each month the state board shall deduct from the investment earnings of each account an amount equal to xx percent of the assets in each account. Unless otherwise directed by the participating plan or fund, the state board shall distribute the deductions to participating plans or funds to pay administrative expenses. Any deductions not distributed must be used to purchase additional units in the accounts.

Sec. 8. Minnesota Statutes 1990, section 11A.17, subd. 14, is amended to read:

Subd. 14. **Procedures for distribution of income for money market account, and ~~guaranteed return~~ fixed income account.** At the end of each fiscal year month, ~~and at other times that the state board might determine appropriate~~, and state board shall determine the earnings of the money market account and the ~~guaranteed return~~ fixed interest account and deduct from the earnings an amount equal to xx percent of the assets in each

account. Unless otherwise directed by the participating plan or fund, the state board shall distribute the deductions to participating plans or funds to pay administrative expenses. The Any earnings not deducted and distributed must be used to purchase additional shares in the respective accounts on behalf of each participating public retirement plan or fund.

Sec. 9. Minnesota Statutes 1990, section 11A.18, subdivision 11 is amended to read:

Subd. 11. **Adjustment for mortality gains and losses.** As of June 30 annually, the commission-retained actuary shall calculate the amount of required reserves representing any mortality gains and any mortality losses incurred by each participating public pension fund or plan during the fiscal year and report the results of those calculations to the applicable participating public pension fund or plan. The actuary shall report separately the amount of the reserves for annuitants and benefit recipients who are eligible for a postretirement benefit adjustment and the amount of reserves for annuitants and benefit recipients who are not eligible for a postretirement benefit adjustment. If the net amount of required reserves represents a mortality gain, the participating public pension fund or plan shall certify that amount to the state board, which shall sell sufficient securities or transfer sufficient available cash to equal the amount of money certified. If the amount of required reserves represents a mortality loss, the participating public pension fund or plan shall transfer to the state board an amount equal to the amount

of the net mortality loss. The amount of the transfers shall be determined before any postretirement benefit adjustments have been made. All transfers resulting from mortality adjustments shall be completed annually by December 31 for the preceding June 30. Interest shall be charged or credited on any transfers after December 31 based upon the ~~average short term rate earned by the postretirement investment fund~~ preretirement interest assumption for the participating plan or fund as specified in section 356.215, subdivision 4d, stated as a monthly rate. Book values of the assets of the fund for the purposes of subdivision 9 shall be determined only after all adjustments for mortality gains and losses for the fiscal year have been made.

Sec. 10. Minnesota Statutes 1990, section 116P.11, is amended to read:

116P.11 AVAILABILITY OF FUNDS FOR DISBURSEMENT. (a) The amount biennially available from the trust fund for the budget plan developed by the commission consists of the interest earnings generated from the trust fund. Interest earnings generated from the trust fund shall equal the amount of interest on debt securities and dividends on equity securities. Gains and losses arising from the sale of securities shall be apportioned as follows:

(1) If the sale of securities results in a net gain during a fiscal year, the gain shall be apportioned in equal installments over the next ten fiscal years to offset net losses in those years. If any portion of an installment is not needed to recover

subsequent losses identified in (b) it shall be added to the principal of the fund.

(2) If the sale of securities results in a net loss during a fiscal year, the net loss shall be recovered from the gains in (a) apportioned to that fiscal year. If such gains are insufficient, any remaining net loss shall be recovered from interest and dividend income in equal installments over the following five fiscal years.

(b) For funding projects through fiscal year 1997, the following additional amounts are available from the trust fund for the budget plans developed by the commission.

(1) for the 1991-1993 biennium, up to 25 percent of the revenue deposited in the trust fund in fiscal years 1990 and 1991;

(2) for the 1993-1995 biennium, up to 20 percent of the revenue deposited in the trust fund in fiscal year 1992 and up to 15 percent of the revenue deposited in the fund in fiscal year 1993; and

(3) for the 1995-1997 biennium, up to ten percent of the revenue deposited in the fund in fiscal year 1994 and up to five percent of the revenue deposited in the fund in fiscal year 1995.

(c) Any appropriated funds not encumbered in the biennium in which they are appropriated cancel and must be credited to the principal of the trust fund.

Sec. 11. Minnesota Statutes 1990, section 352D.04, subd. 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 money market account, the bond market account, the ~~guaranteed return~~ 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) Twice in any calendar year, a participation 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, or money market accounts to the new guaranteed investment contract in the ~~guaranteed return~~ 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 ~~guaranteed return~~ 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) Twice in any calendar year 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 ~~guaranteed return~~ 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 not later than six months after the requested change.

Sec. 12. Minnesota Statutes 1990, Section 352D.085, subd. 7, is amended to read:

Subd. 7. Up to One-tenth of one percent of salary shall be deducted from the employee contributions and up to one-tenth of one percent of salary from the employer contributions authorized by section 352D.04, subdivision 2, to pay the administrative expenses of the unclassified program.

Sec. 13. Minnesota Statutes 1990, section 353D.05, subd. 2, is amended to read:

Subd. 2. **Investment options.** (a) An individual participant may elect to purchase shares in the income share account, the growth share account, the money market account, the bond market account, the ~~guaranteed return~~ 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 contributions to be used to purchase shares in each of the accounts.

(b) Twice in a calendar year, a participant may indicate in writing a choice of options for subsequent purchases of shares. After a choice is made, until the participant makes a different written indication, the executive director of the association shall purchase shares in the supplemental investment fund or funds specified by the participant. If no initial option is indicated by a participant, the executive director shall invest all contributions made by or on behalf of a participant in the income share account. A choice of investment options is effective no later than the first pay date occurring more than 30 days after receipt of the written choice of options.

(c) One month before the start of a new guaranteed investment contract, a 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, or money market accounts to the new guaranteed investment contract

in the ~~guaranteed return~~ fixed interest account. If a partial transfer is made, a minimum of $200 must be transferred and a minimum balance of $200 must remain in the previously selected investment options. 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. Share in the ~~guaranteed return~~ 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 a benefit payment under section 353D.07.

(d) Twice in a calendar year, 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. If a partial transfer of previously purchased shares is selected, a minimum of $200 must be transferred and a minimum balance of $200 must remain in the previously selected investment option. A change under this paragraph is effective as soon as cash flow to an account permits, but not later than six months from the requested change.

Sec. 14. Minnesota Statutes 1990, section 353D.05, subd. 3, is amended to read:

Subd. 3. [ADMINISTRATIVE EXPENSES.] The ~~public employees retirement associates may deduct an amount set annually by the~~

executive director of the association~~, but not to exceed two percent of the employing unit contributions to the plan, to defray the expenses of the association in administering the plan~~. shall annually set an amount to recover the costs of the association in administering the public employees defined contribution plan. If the amount recovered under section 11A.17 does not meet the annual costs of administering the defined contribution plan, the executive director may assess an additional amount up to two percent of the employer and employee contributions.

Sec. 15. Minnesota Statutes 1990, section 354B.04, is amended by adding a subdivision to read:

Subd. 4. **Administrative expenses.** Up to two percent of the amount of the salary deductions and employer contributions may be used by the state university board and the state board for community colleges for payment of necessary and reasonable administrative expenses.

Sec. 16. Minnesota Statutes 1990, section 354B.05, subd. 3, is amended to read:

Subd. 3. **Selection of financial institutions.** The supplemental investment fund administered by the state board of investment is one of the investment options for the plan. The state university board and the community college board shall select no more than two other financial institutions to provide annuity contracts or custodial accounts. Each board may at its

discretion change a selection of an institution. Investment programs offered by the institutions must meet the requirements of section 401(a) or 403(b) of the Internal Revenue Code of 1986, as amended. In making their selections, the boards shall consider these criteria:

(1) the experience and ability of the financial institution to provide retirement and death benefits suited to the needs of the covered employees;

(2) the relationship of the benefits to their cost; and

(3) the financial strength and stability of the institution.

The chancellor of the state university system and the chancellor of the state community college system shall redeem all shares in the accounts of the Minnesota supplemental investment fund held on behalf of personnel in the supplemental plan who elect an investment option other than the supplemental investment fund, except that shares in the ~~guaranteed return~~ fixed interest account must not be redeemed until the expiration dates for the guaranteed investment contracts. The chancellors shall transfer the cash realized to the financial institutions selected by the state university board and the community college board under section 354B.05.

Sec. 17. Minnesota Statutes 1991 Supplement, section 11A.24, subd. 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, 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 United States banks and savings institutions that are rated in the highest four quality categories by a nationally recognized rating agency or whose certificates of deposit are fully insured by federal agencies;

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

(4) mortgage participation or pass through certificates evidencing interests in pools of first mortgages or 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;

(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 a nationally recognized rating agency or to synthetic guaranteed investment contracts where the underlying assets comply with the requirements of 11A.24;

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

(b) Sections 16A.58 and 16B.06 do not apply to ~~certifications~~ 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. 18. Minnesota Statutes 1991 Supplement, section 354B.07, subd. 2, is amended to read:

Subd. 2. REDEMPTIONS. The chancellor of the state university system and the chancellor of the state community college system shall redeem all shares in the accounts of the Minnesota supplemental investment fund held on behalf of personnel in the supplemental plan who elect an investment option other than the supplemental investment fund, except that shares in the ~~guaranteed return~~ fixed interest account may not be redeemed until the expiration dates for the guaranteed investment contracts. The chancellors shall transfer the cash realized to the financial institutions selected by the state university board and the community college board under section 354B.05.

Sec. 19. [Effective Dates]

Section 1 through 18 are effective July 1, 1992.

Tab E

COMMITTEE REPORT

DATE: December 11, 1991

TO: Members, State Board of Investment

FROM: Equity Manager Search Committee

At its meeting on September 11, 1991, the Board established an Equity Manager Search Committee to make a recommendation on the selection of active equity managers.

The members of the Search Committee are:

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

SBI staff and the Board's consultant, Richards & Tierney, assisted the Committee in screening firms and evaluating the information received.

Candidates

Prospective managers were identified from the following sources:

- o Recommendations from staff based on on-going meetings with managers. Staff files include responses to the SBI's quarterly announcement in the State Register.
- o Recommendations from Board members, IAC members and other pension plan sponsors.
- o Recommendations from Richards & Tierney, the Board's consultant.

In addition, IAI and IDS (current managers for the SBI) were included in the search as the request of the IAC Equity Manager Committee (now the Stock and Bond Manager Committee). While the Search Committee discussed all current stock managers in its deliberations, only IDS and IAI were asked to make formal

presentations to the Search Committee due to concerns raised by the IAC over the last year.

Forty-one (41) firms were asked to respond to a questionnaire regarding their operations. Thirty-two (32) firms responded. A list of these firms and a copy of the questionnaire form are attached.

Selection Criteria

The Committee emphasized the following factors in its review of responses:

Organization

- The firm is familiar with the needs of large institutional clients.
- The firm's leaders and investment professionals are experienced and exhibit a high degree of knowledge and competence.
- The firm's current group of professionals is responsible for the firm's track record.
- The firm's asset growth has not become greater than its investment process can handle.
- The firm has strong leadership and accountability within its investment process and overall management.
- The firm demonstrates a willingness to work within the framework of the SBI investment program.

Investment Approach

- Investment style has been consistently applied.
- Decision making hierarchy is clearly specified.
- Investment research coverage is thorough.
- Investment approach is unique. The discipline has a long term advantage that provides a high probability of generating excess returns.
- Portfolio construction procedures are specified, efficient, and consistent with the stated investment style.
- The firm understands the risk that they are taking relative to a specific benchmark.

Capacity

- The firm has at least $150 million under management.

- The firm is capable of absorbing a new account of $100 million or more.

Finalist Interviews

Ten (10) firms were asked to make presentations to the Committee on November 6, 7 or 14, 1991.

Brandywine Asset Management	Dietche & Field
Fayez Sarofin	Fisher Investments
IDS Advisory	Independence Investments
IAI	Lynch Mayer
Mitchell Hutchins	Nicholas Applegate

RECOMMENDATIONS

After reviewing all information obtained through the written and oral presentations, the Committee makes the following recommendations concerning the SBI's active stock manager program:

1) New Managers

- The Committee recommends that the SBI authorize the Executive Director, with assistance from SBI legal counsel, to negotiate and execute contracts with:

  - Independence Investment Advisers
  - Lynch and Mayer

- The Committee recommends that each manager receive up to $200 million in assets and that the specific initial allocation be reviewed by the Stock and Bond Manager Committee.

2) Current Managers

- The Committee recommends that the SBI terminate its current contract with IAI.

- The Committee recommends that the SBI maintain its current contract with IDS.

- o The Committee recommends that the portfolio managed by Rosenberg Institutional be reduced to approximately $150 million.

3) Future Actions

- o The Committee recommends that staff continue to monitor several of the finalist firms for possible inclusion at a future date: Brandywine Asset Management, Fayez Sarofin, Fisher Investments, Mitchell Hutchins (Uncommon Value), IAI (Small Cap Regional).

- o The Committee recommends that the Board authorize the formation of a permanent Manager Search Committee which could be activated as needed to make manager selection recommendations to the Board.

- o The Committee recommends that IAC Stock and Bond Manager Committee review the Manager Continuation Policy.

EQUITY MANAGER SEARCH

FIRMS THAT RESPONDED TO QUESTIONNAIRE
OCTOBER 1991

Avatar

Balch, Hardy, Scheinman, & Winston

Brandywine Asset Mgmt.

Columbus Circle

Cutler & Company

Dietche & Field

Enhanced Investment Tech Inc.

Fayez Sarofin

Fidelity

First Quadrant

Fisher Investment Inc.

Goldman Sachs

IAI

IDS Advisory

Independence Investment Associates

Investment Research Company

Jacob Levy

Lynch & Mayer

Mitchell Hutchins

Morgan Stanley

NCM Capital

Nicholas-Applegate Capital Mgmt.

Pilgrim Baxter

Pinnacle Associates

Piper Capital

Provident Investment Council

Sanford Bernstein

Southeastern Asset Mgmt.

TSA

United Income

Wellington Capital Mgmt.

WR Lazard

September 19, 1991

Address

Dear

Your firm is being reviewed as a potential equity manager for the Minnesota State Board of Investment (MSBI). Several firms may be added to the MSBI's manager group in late 1991 or early 1992. In order to continue our evaluation of your firm we ask that you submit the following information:

- o Completed questionnaire.
- o Actual and benchmark historical returns. See detailed requirements in Attachment A.
- o Actual portfolio and benchmark portfolio asset listings in both hard copy and diskette form. See detailed requirements in Attachment B.

Please note that a separate questionnaire and accompanying set of return data and asset listings must be prepared for each equity discipline/style you wish to be considered by the MSBI.

We ask that you direct your response(s) to this request to the MSBI and the MSBI's consultant, Richards & Tierney, Inc. Specific instructions are included on the questionnaire and Attachments A and B. All material must be received no later than <u>12:00 noon on October 4, 1991</u>.

If you have any questions on this request, please contact me or Joan Guckeen at (612) 296-3328.

Sincerely,

Michael J. Menssen
Manager, External Equities

MJM:cao

ATTACHMENT A

ACTUAL AND BENCHMARK RETURNS

1) Please note that return data and asset listings should be provided for a minimum of two (2) years. More than five (5) years is highly desirable and we prefer as long a time period as possible. We will not accept any backtested data or any results generated by individuals prior to their association with your firm.

2) Please list the name of the benchmark against which your performance is most appropriately compared. Please state the cash position that was incorporated into the benchmark, if any, to calculate benchmark returns.

3) Please report all historical returns before fee payments are deducted and out to at least two decimal places. To the extent possible, you should follow the reporting standards set forth by AIMR in "Report of the FAF Committee for Performance Presentation Standards."

4) Composite returns are preferred over individual account returns. The composite should include all accounts that existed during each time period to eliminate survivor bias. Please calculate the composite on a portfolio market value weighted basis rather than an equal weighted basis. If you can not provide us with a market weighted composite, please describe how the composite was calculated.

5) If a composite is not available, please provide data from a representative account that is as similar as possible to the MSBI's typical account size ($100 million or more) and investment restrictions. Identify the client account provided.

6) Monthly returns are very much preferred. Monthly returns are essential to several aspects of our data analysis. Receipt of monthly returns will, therefore, greatly facilitate evaluation of your firm. If monthly data is not available, please substitute quarterly returns.

7) Please complete the attached form for all time periods. If you use a custom benchmark/normal portfolio, complete separate forms for those returns. It is not necessary to complete a form for benchmark returns if your benchmark is a published market index.

ATTACHMENT A CONTINUED ON OTHER SIDE

ATTACHMENT A (con't)

8) Send the requested data and any accompanying explanation to:

One (1) Copy

Mr. Michael J. Menssen
MN State Board of Investment
Room 105, M.E.A. Building
55 Sherburne Avenue
St. Paul, MN 55155
(612) 296-3328

One (1) Copy

Mr. Jeff Bailey
Richards & Tierney, Inc.
111 West Jackson Boulevard
Chicago, IL 60604
(312) 461-1100

All material must be received by 12:00 noon on October 4, 1991.

FIRM: ______________________________
STYLE: ______________________________

HISTORICAL DATA ENTRY FORM

YEAR ________

January ________
February ________
March ________

First Quarter ________

April ________
May ________
June ________

Second Quarter ________

July ________
August ________
September ________

Third Quarter ________

October ________
November ________
December ________

Fourth Quarter ________

YEAR ________

January ________
February ________
March ________

First Quarter ________

April ________
May ________
June ________

Second Quarter ________

July ________
August ________
September ________

Third Quarter ________

October ________
November ________
December ________

Fourth Quarter ________

YEAR ________

January ________
February ________
March ________

First Quarter ________

April ________
May ________
June ________

Second Quarter ________

July ________
August ________
September ________

Third Quarter ________

October ________
November ________
December ________

Fourth Quarter ________

YEAR ________

January ________
February ________
March ________

First Quarter ________

April ________
May ________
June ________

Second Quarter ________

July ________
August ________
September ________

Third Quarter ________

October ________
November ________
December ________

Fourth Quarter ________

ATTACHMENT B

PORTFOLIO AND BENCHMARK ASSET LISTINGS

1) Please note that return data and asset listings should be provided for a minimum of two (2) years. More than five (5) years is highly desirable and we prefer as long a time period as possible. We will not accept any backtested data or any results generated by individuals prior to their association with your firm.

2) Composite asset listings are preferred over an individual account. However, if a composite is not available, please provide data from a representative account that is as similar as possible to the MSBI's typical account size ($100 million or more) and investment restrictions. Identify the client account provided.

3) Monthly asset listings are preferred. Quarterly listings are acceptable.

4) We prefer a market value weighted return composite over an individual account. If a composite return can be calculated but a corresponding composite asset listing is not available, please submit the composite return data and substitute asset listings from a representative account. See #2 above.

5) If you utilized a custom benchmark (normal portfolio), we request historical benchmark portfolio asset listings. If a third party produces a custom benchmark for you, we ask that you direct that organization to make the asset listings available to us. The asset lists <u>must</u> be provided on diskette.

6) Asset listings on computer diskette for actual portfolios are highly desirable. If not available, submit hard copy.

7) Requirements for machine readable data in #4 and #5 are:

   - The files should be sequential ("flat") files (for example, PRN files generated by LOTUS 1-2-3) on computer diskette compatible with IBM PC hardware.

   - Each security's record should be placed on a separate line in the file.

   - Unique identifiers, either CUSIPS or IDC (not exchange) tickers, should be provided for each security.

   - The name of each security should be contained in the file or provided in an accompanying hard copy version of the file.

ATTACHMENT B CONTINUED ON OTHER SIDE

ATTACHMENT B (con't)

- o The amount held of each security should be provided in the file.
- o Security data fields should be placed in consistent locations for every record in the file.

Please follow the following format:

- o Four header lines describing the file (e.g., manager, date of the portfolio), with each line no more than 26 columns wide.
- o One line per security with each record containing:

Columns 1 - 8	CUSIP
Columns 9 - 12	IDC ticker, left-justified (leave blank if not available)
Columns 13 - 22	Amount of the security held, including a decimal point
Columns 23 - 27	Leave blank
Columns 28 -	Security name

8) If a composite is not available, please identify the client whose account you are using and the current market value, and date and amount for the initial funding and all additional contributions or withdrawals by the client. The representative account should remain the same over the entire history, unless you notify us otherwise. Due to time restrictions we prefer to receive the representative account on diskette. If this is impossible, please send us a hard copy of the asset listings.

9) Any data provided on diskette must also be provided in hard copy.

10) Send requested data and any accompanying explanation to:

One (1) Copy

Mr. Michael J. Menssen
MN State Board of Investment
Room 105, M.E.A. Building
55 Sherburne Avenue
St. Paul, MN 55155
(612) 296-3328

One (1) Copy

Mr. Jeff Bailey
Richards & Tierney, Inc.
111 West Jackson Boulevard
Chicago, IL 60604
(312) 461-1100

All material must be received by 12:00 noon on October 4, 1991.

NOTE: Double-sided Copy

MINNESOTA STATE BOARD OF INVESTMENT

EQUITY INVESTMENT MANAGER INFORMATION

I. BACKGROUND DATA

1. Name of Firm: ______________________________

2. Discipline/Style: ______________________________

3. Address: ______________________________
____
____

4. Telephone: ______________________________

5. Fax: ______________________________

6. Contact: ______________________________

7. Date Business Commenced: ______________________________

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

9. Ownership:

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

NOTE: Double-sided Copy

II. ORGANIZATION/STAFF

A. Professional Staff

1. Number of Investment Department Personnel: ______

2. Number of Portfolio Managers: ______

3. Number of Full-time Security Analysts: ______

4. Number of Economists: ______

5. Number of In-house Traders: ______

6. Number of portfolio managers and investment analysts added in:

   the past three years ______

   the past year ______

7. Number of portfolio managers and investment analysts who have left the firm in:

   past three years ______

   their initiative ______

   firm's initiative ______

   the past year ______

   their initiative ______

   firm's initiative ______

8. Elaboration on answers to questions #6 and #7.

NOTE: Double-sided Copy

9. Experience of investment personnel:

	NUMBER OF YEARS		
	Average	Low	High
Portfolio Managers		______	__________
Investment Analysts	______	____	______

10. Dollars under management per portfolio manager:

Average	Low	High
______	____	_____

11. Number of accounts per portfolio manager:

Average	Low	High
______	____	_____

12. Limit on number of accounts per portfolio manager: ____________

13. Approximate allocation of a portfolio manager's time (%):

Investment Research ____________

Portfolio Management ____________

Administration ____________

Marketing ____________

14. Please provide biographical data on key investment personnel, including education and work experience.

15. Describe the firm's financial incentives for portfolio managers and investment analysts.

16. Identify the member(s) of the firm who would be directly responsible for managing the SBI's account.

17. How many accounts and total dollars do the individuals listed in #16 above currently manage?

B. Assets/Client Relationships

1. For all assets under management as of August 31, 1991 provide the following information:

Accounts	Number	Assets ($ millions) Total	Stocks	Bonds	Other	Percent of Assets Fully Discretionary
Total						
Tax Exempt						

2. Account breakdown for the stated discipline/style:

	Number of tax-exempt accounts only				
	8/31/91	12/31/90	12/31/89	12/31/88	12/31/87
Under $10 million					
$10-$25 "					
$25-$50 "					
$50-$100 "					
Over $100 "					
TOTAL #					
TOTAL (in $)					

Largest Account (in $) 8/31/91 ____________

Smallest Account (in $) 8/31/91 ____________

3. Describe any limitations the firm currently imposes or plans to impose regarding:

(a) Number of Client Relationships

(b) Total Assets under Management

(c) Maximum Account Size

(d) Minimum Account Size

4. List the names and the dollar amount of the firm's five largest equity tax-exempt accounts for the stated discipline/style.

5. Provide the names and sizes of all tax-exempt accounts that the firm lost during 1987-1991 for the stated discipline/style.

6. Provide the names and sizes of all tax-exempt accounts that the firm gained during 1987-1991 for the stated discipline/style.

7. Please attach the firm's standard management fee schedule for the stated discipline/style.

8. Does the firm utilize performance-based fees for any of its current clients? If yes, please provide a description of the performance-based fee arrangement. If no, would you consider a performance-based fee arrangement with the SBI?

9. Describe the firm's experience with managing equity portfolios for public funds and other large institutional clients.

C. Financial Viability and Ethics

1. Describe the firm's financial position.

2. Provide a copy of the firm's most recent audited financial statement.

3. Describe any censure by the SEC or any litigation pending against the firm.

4. Is the firm aware of any potential conflicts of interest in managing the SBI's assets?

5. Provide a copy of the firm's Form ADV.

6. Does the firm maintain written policies and guidelines to assure compliance with governing securities laws and regulations? Briefly describe your monitoring process.

III. INVESTMENT APPROACH

A. Investment Philosophy

1. Summarize the firm's overall investment management philosophy for equity portfolios.

2. What portfolio characteristics does the firm seek with regard to residual and systematic risk and industry diversification?

3. For performance evaluation and investment strategy purposes, does your firm utilize any customized common stock performance benchmarks (normal portfolio) that differ in some way from the broad market indices?

4. If the answer to question #3 above is "yes", please provide a description of the current benchmark construction process.

5. If the answer to question #3 above is "no", would your firm be willing to construct a customized benchmark portfolio?

B. Investment Management Process

1. Describe the firm's management style with respect to asset allocation for equity portfolios.

2. Describe the allocation to cash during the past five years.

	High	Low	Average
%			

3. Describe the firm's process for formulating, implementing, and controlling equity investment strategy. In particular, discuss the subjects of economic analysis, market timing, sector/industry allocation, and stock selection.

NOTE: Double-sided Copy

Equity Research Process

4. What are the firm's principle research and information sources?

5. Does the firm have expertise in any particular group of equities?

6. Describe the size of the firm's research staff and their experience levels.

Trading

7. Give a description of the firm's trading operation regarding:

   a) staff size, experience, scope of responsibilities, and allocation of commissions

   b) trading techniques and venues

8. What is the average annual level of portfolio turnover experienced during the past five years?

9. To what extent is the firm willing to allocate the commission dollars generated in the management of the SBI's assets to the SBI for its research purposes?

C. Communication

1. How does the firm communicate with clients?

   a) Format and frequency

   b) Who in the organization would handle contact with the SBI?

   c) Will the SBI's portfolio manager be available for periodic presentations and joint manager meetings?

   d) Please provide an example of a client/manager presentation.

D. Miscellaneous

1. The SBI's Investment Guidelines (i.e., restrictions concerning allowable investments and target risk-return parameters) are enclosed. How would these guidelines affect your investment approach?

2. Assuming that the SBI's account will be approximately $100-150 million, does the firm anticipate any problems in absorbing the SBI's assets with respect to investment process, philosophy etc.?

3. Will the SBI's account be managed on a separate basis? If not, explain.

4. Does the firm have a preference as to the method of funding its account out of the SBI's current holdings?

5. Are there situations in which you recommend using stock index futures? If so, in what manner?

6. Describe the information processing capabilities (databases, software and hardware) supporting the firm's investment operation.

7. What does the firm perceive its weakness(es) to be, if any, in its organization and/or investment approach.

IV. RETURN HISTORY

Detailed performance history requirements are specified in Attachment A of the cover letter accompanying this questionnaire. Please provide a summary of that data in the following format:

Benchmark: (Specify which Custom Benchmark or Market Index was used)

Annualized Return
Period Ending June 30, 1991

	1 Year	3 Years	5 Years	10 Years	Cumulative (Specify Period)
Actual					
Benchmark					

12 Months Ending

	6/39/91	6/30/90	6/30/89	6/30/88	6/30/87
Actual					
Benchmark					

V. CONTRACT REQUIREMENTS

Minnesota Statutes or SBI contracting procedures require that:

- o Your firm must provide a certificate of compliance from the Minnesota Department of Human Rights which approves your affirmative action plan for the employment of minority persons, women and the disabled. (The certification is not required if your firm has had less than 20 full time employees at all times during the previous 12 months.)
- o Your firm will allow all books and records relevant to the management of the SBI's portfolio to be examined by the SBI and the Office of the Legislative Auditor.
- o Your firm will provide appropriate tax identification numbers prior to the start of the contract.
- o Your firm will not assign or subcontract any part of the agreement without prior written consent to the SBI.

Will your firm be able to comply with these requirements?

VI. SUBMISSION OF RESPONSE

Twenty (20) copies of your response must be received no later than October 4, 1991 by 12:00 noon at the following address:

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

Please note that one (1) of the above copies should be left unbound.

One (1) copy of your response must be received no later than October 4, 1991 by 12:00 noon at the following address:

Mr. Jeff Bailey
Richards & Tierney, Inc.
111 West Jackson Boulevard
Chicago, IL 60604
(312) 461-1100

Tab F

COMMITTEE REPORT

DATE: December 11, 1991

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

FROM: Asset Allocation Committee

The Asset Allocation Committee met on November 27 and December 6, 1991 to consider the following items:

- Investment policy statement for the Assigned Risk Plan.
- Staff position paper on international equity investing for the Basic Retirement Funds.

Both items require action by the Board.

ACTION ITEMS

1) Assigned Risk Plan Policy Statement

Investment management responsibility for the assets of the Minnesota Worker's Compensation Assigned Risk Plan (ARP) was transferred from the Department of Commerce to the SBI effective May 1, 1991. Voyageur Asset Management was selected as the sole manager for the ARP at the June 1991 Board meeting.

Staff presented an outline of the proposed investment policy statement for the ARP to the Asset Allocation Committee in March 1991. The Committee endorsed the concepts embodied in the outline at that time. Staff planned to prepare a more complete policy statement after the manager for the ARP was selected. Since the ARP manager has substantial responsibility for determining an appropriate asset mix for the portfolio, Voyageur's input was sought and incorporated in the final proposal.

A copy of the ARP investment policy statement is attached.

RECOMMENDATION

The Committee recommends that the SBI adopt the paper as its investment policy statement for the Assigned Risk Plan.

2) <u>International Equity Investment Program</u>

At its meeting in September 1991, the Board approved a 10% allocation to international stocks in the Basic Retirement Funds and directed staff to prepare an implementation plan.

Staff prepared a position paper which addressed the major issues associated with international equity investing and presented a specific structure for the SBI's program (copy attached). The Committee reviewed the staff proposal and discussed the pros and cons associated with the major issues:

- Currency hedging strategy

  Staff proposed that the passive component be unhedged and that active managers be allowed to hedge opportunistically. Both active and passive managers would be measured against an unhedged benchmark.

  The Committee agreed with the staff recommendations on this issue. Specifically, the Committee agrees that a constant hedge strategy would increase management costs and reduce the diversification benefits of an international program.

- Investment restrictions

  Some members feel strongly that the Board's restrictions regarding South Africa and liquor and tobacco stocks will have a negative impact on the international portfolio because the restrictions significantly reduce the number of securities that can be purchased. The Committee will make a recommendation on this issue at a future meeting.

- Asset Class Target

  Staff proposed that the SBI's asset class target be based on data from Morgan Stanley Capital International's Index of Europe, Australia's and the Far East (EAFE). EAFE is the most widely quoted international source for index data. Staff further proposed that the SBI's target be weighted 50% Europe and 50% Pacific Basin in order to assure adequate diversification across international markets.

  The Committee agrees that EAFE should be the SBI's index source but did not make a recommendation on the weighting of the SBI's asset class target. The weighting issue will be addressed at a future meeting.

- Management Structure

  The Committee and staff have differing views on a recommended management structure:

Strategy	Staff	Committee
Passive	50%	0%
Active country/passive stock	25	50
Active stock - regional mandate 1/2 Europe 1/2 Pacific Basin	25	0
Active stock - EAFE mandate	0	50

Staff believes a significant commitment to passive management is appropriate for several reasons:

- It guarantees that a portion of the international program will be fully diversified across all major markets. It also provides additional diversification among management approaches.

- It provides "ease of entry" into the international markets for the SBI. The manager selection process for a passive manager will be less complex and time-consuming than searches for active managers.

- It provides greater certainty of returns. While many active managers have added significant value over a 10-15 year horizon, median active managers have also trailed the broad market for extended periods of time (5 years). A significant commitment to passive management will reduce the variability of the program relative to the broad market.

- It reduces the management cost associated with the program.

The Committee feels that passive management is not appropriate:

- International markets are deemed to contain greater inefficiencies than the market. Therefore, members believe that active managers have opportunities to add value in the international markets that should be aggressively pursued. Passive management, by definition, precludes participation in these opportunities.

- Members believe that many good active managers with strong track records are available to the SBI. Some members have international programs that rely exclusively on active management and they reported that their returns have exceeded EAFE over long time periods.

- Members believe that active managers may provide better downside protection in adverse markets.

o Implementation Schedule

Due to the differences in recommended structures, staff and the Committee also differ on a specific implementation time frame. However, the Committee and staff agree that the SBI should proceed with manager searches as soon as practicable:

Passive	Staff		Committee	
	Search	Funding	Search	Funding
Passive	1/92-6/92	7/92-12/92	NA	NA
Active Country/ Passive Stock	7/92-9/92	10/92- 3/93	1/92- 6/92	7/92-12/92
Active Stock	10/92-3/93	4/93- 9/93	7/92-12/92	1/93- 6/93

RECOMMENDATIONS

In light of the above, the Committee makes the following recommendations:

o The SBI should adopt the staff proposal on currency hedging.

o The SBI should use EAFE as its source for international index data.

o The SBI should employ a management structure which commits 50% of the portfolio to active country/passive stock strategies and 50% to active managers with EAFE mandate. Further, the Committee recommends that both the staff proposal and the Committee position be presented to the IAC/SBI. The Committee and staff agree that the IAC/SBI should be fully appraised of the trade-offs associated with the inclusion or exclusion of passive management.

o The SBI should proceed with manager searches as soon as possible. The remaining issues of investment restrictions and asset class target weighting should not impede the selection of either passive or active country/passive stock managers.

The Committee intends to have further discussions on investment restrictions and the asset class target weighting. When these aspects of the program are approved, staff will finalize the attached position paper.

ASSIGNED RISK PLAN
INVESTMENT POLICY STATEMENT

BACKGROUND

General Description of the Plan

The Assigned Risk Plan (ARP) provides workers' compensation and employers' liability coverage to Minnesota employers unable to obtain insurance through the private market. The ARP provides essentially the same coverage as private workers' compensation insurers. The establishment and administration of the ARP is codified in sections 79.251 and 79.252 of the Minnesota State Statutes.

The obligations (liabilities) of the ARP result from its insurance underwriting activities. Liabilities arise when the plan's participants (policy holders) file claims and are awarded benefits. Minnesota provides seven different types of benefits: medical, temporary total disability, temporary partial disability, permanent total disability, permanent partial disability, death and rehabilitation. Benefits are paid to claiments in both periodic and lump sum payments.

Most of the liabilities are short term (less than ten years). The liability stream is difficult to predict from year to year because the insured risks are unpredictable. However, the liabilities are easier to estimate over a 3-5 year period using actuarial methodology. The ARP is a young plan and the ability to estimate liabilities should improve with time. The liabilities are also difficult to estimate because some of the current and future obligations increase with inflation.

The ARP is operated as a nonprofit entity. State statutes require that the plan maintain a fully funded status. To the extent that the assets of the plan are inadequate to meet its obligations, all licensed insurers underwriting workers' compensation insurance are assessed an amount sufficient to fully fund the Plan's obligations. Each private insurer's assessment is based on its pro rata share of total workers' compensation insurance written during the preceding calendar year.

The Minnesota Commissioner of Commerce sets the premium rates for the ARP annually. The premium rates must not be lower than those charged by private insurers. However, the private sector can price themselves out of certain lines of workers' compensation and the plan would then become the lowest cost provider. The ARP investment portfolio represents the source of payment for estimated current and expected future liabilities. Investment of the plan's assets is guided by Minnesota Statutes Chapter 11A. This

investment authority is less restrictive than that established for insurance companies.

Business Risk

Most private companies underwriting workers compensation insurance in Minnesota are multi-line insurers. This gives them the opportunity to spread their business risk across a number of lines of insurance. Presumably, poor short term underwriting results in one or more lines will be offset by favorable results in others. Companies with a majority of their insurance underwriting in a single line still have the benefit of geographic and demographic diversification. The ARP can do little to diversify insurance risk since it is a single-line insurer that operates only in Minnesota.

Nature of Liabilities

Insurance companies receive premiums to cover future claims. The premiums are invested in assets to cover the future liabilities. The timing and ultimate size of the claim depends on the the type of risk being insured. For example, auto physical damage claims are paid quickly and the size of the claim is limited to the value of the automobile. On the other hand, medical malpractice claims could take years to develop and their final settlement values are often determined in court. (1)

Workers' compensation is considered a longer-tail liability. "Tail" refers to the length of time to the ultimate payment of a claim once the loss is incurred. The longer-tail nature of workers compensation liabilities results from two factors: (1) many of the claims take years to develop, and (2) claims are often paid in the form of recurring medical payments and/or periodic disability income payments. (1)

Financial Health of the Insurance Firm

The financial health of an insurance firm is directly related to the value of its assets which in turn are used to determine the surplus. An insurance firm's ability to take on new business is restricted by its level of surplus. Regulatiors limit the total amount of a company's premium writing to no more than three times surplus. The industry average is currently closer to two times surplus. Surplus is the difference between current booked assets and current booked liabilities. All states require property and casualty companies to compute surplus on a statutory basis for regulatory purposes. Statutory accounting values bonds at their current amortized cost and common stocks at market prices. Therefore, assets are unaffected by changing interest rates and, in addition, liabilities are not discounted. (1)

Since bonds are not priced using market values and liabilities are not discounted, statutory accounting provides an incomplete picture of financial well-being with the emphasis on solvency. Two alternative measures are: (1) current value and (2) market value surplus. Both the current value and market value surplus measures value all assets at current market. Market value surplus also discounts liabilities at an appropriate discount rate. For the ARP, staff believes the market value is the more appropriate measure of surplus/deficit status.

Unique Features of the ARP when Compared to the Property and Casualty Insurance Industry

The above information shows that estimation and management of liability and premium cash flows are important to the health of an insurance company. The ARP has a number of unique features that make it more difficult to determine what the cash flows, both negative and positive, will be.

Residual Market

The ARP covers the residual market in Minnesota. These are the companies that have been rejected by private insurers and the cash flows in and out, particularly premium flow, for these companies is harder to predict than in the overall market for several reasons:

o Underwriting losses are greater in the workers' compensation residual market than the property and casualty industry. (2)

o There is less control over underwriting standards and premium flow. For instance, if a private firm does not want the business, it can increase premiums to a high enough level that firms will not buy insurance from the private market.

o The ARP must insure a company if it has been rejected by private insurers and does not owe the ARP premium payments from a previous ARP policy.

o The companies that private insurers do not want to cover are in the Assigned Risk Plan. Presumably, these companies are in the highest risk business lines.

o Residual market share means greater volatility because it is hard to predict what share of the market the ARP will have.

o For private insurers, as market share increases, losses are more likely as they insure more risky companies. For the ARP, as market share grows, the losses will probably be lower as less risky companies are accepted into the plan.

Status Within Minnesota

Not only are cash flows harder to predict because the ARP is part of the residual market, but cash flows are also harder to predict because of its unique status within Minnesota:

o Most private insurers cover many lines of business while the ARP covers only workers' compensation. Further, private insurers that cover only one line of business can diversify across many states while the ARP is confined to Minnesota.

o ARP has assessments from the Special Compensation Fund. This fund was established to provide benefits when an employer has no insurance. The benefits are paid by fining the employer and assessing other insurance companies in the state, including the ARP. Ultimately, the costs are passed on to other employers via higher insurance rates.

o ARP has the ability to assess private insurers for any deficit. This is important because if the ARP becomes underfunded, private insurers will be assessed to make up the deficit.

o The ARP is a young plan and this makes cash flows harder to predict.

INVESTMENT POLICY STATEMENT

An appropriate investment policy statement for ARP includes the following considerations.

Objectives

Return Requirements: The main objective of this fund is management of the asset/liability relationship. The rate of return should be considered only when compared to an appropriate benchmark that is representative of the liability stream. The problems in predicting cash flows for the fund were discussed above. The difficulty in predicting liabilities makes meeting the objective even more difficult. Return enhancement is not as important as meeting the liability requirements.

Risk Tolerance: The fund has a very low risk tolerance. The biggest risk associated with the plan is not being able to meet liability payments. The volatility of the equity market makes a large percentage equities inappropriate for the fund.

Portfolio Constraints

There are a number of constraints on this portfolio that affect the structure of the portfolio.

Liquidity: The portfolio must be very liquid. The Assigned Risk Plan portfolio must generate sufficient cash to pay both expected and unexpected obligations. Cash withdrawels from the portfolio occur frequently to meet obligations. While most claims and expenses can be anticipated, the nature of the casualty insurance business creates cash flow uncertainty and makes liquidity important.

Unique Circumstances: Some unique characteristics of the fund are represented below. These factors make predicting cash flows difficult. To compensate for this unpredictability, the portfolio should be conservatively invested (i.e. predominately fixed income).

o The liabilities must be adjusted using "loss development factors" which allow for inflation and increased claims.

- If there is unexpected inflation or deflation not included in calculating the loss development factors, the liability stream estimate will not be accurate. (1)

- The loss development factors should also include an allowance for incurred but not reported liabilities. (1)

- The loss development factor should properly "age" the loss. For example, a claimant's medical condition becomes known only with time, especially if the injuries were severe. (3)

o Escalating medical costs, broader definition of job related injuries, and spiraling litigation has made the worker's compensation system more difficult to manage. A system originally established to compensate workers for traumatic injuries, such as the loss of a limb, now faces administration of injuries that result in more subjective diagnoses. The subjectivity has made the system more confrontational and litigious. (4)

o Increasing market share shortens duration of the liabilities while decreasing share lengthens duration. (3) The ARP has been growing, causing the duration to shorten. (Duration is a measure of interest rate sensitivity. With a shorter duration, a portfolio is less sensitive to interest rate changes.)

o Legislated benefit changes may alter cash flows.

o Economic conditions affect cash flows. For example, during recessions, claims increase.

o If heavily invested in equities, the portfolio may begin to rely on premium cash flows to meet current obligations. This is risky because these premiums may decrease, depending on market conditions.

o Other factors unique to the ARP, such as covering only the residual market in Minnesota, make predicting cash flows even more difficult.

Although the above points show that the liabilities are difficult to predict, staff must assume that the liabilities calculated by the ARP's actuaries are estimated correctly. The actuarial valuation must serve as the basis for asset allocation decisions.

ASSET ALLOCATION

The asset allocation should be tailored to the primary objective of the fund: to provide cash for the fund liabilities on the required date. As discussed above, it is difficult to accurately project these liabilities. As a result, staff recommends that the Board select a manager with special expertise in insurance related asset/liability matching. The manager should be charged with the responsibility to recommend an asset allocation. The manager should be familiar with liability streams produced by worker's compensation so its recommendation will take into account all the uncertainties discussed above.

Staff believes that because of the uncertainty of premium and liability cash flows, the portfolio should be invested very conservatively with a high fixed income content, 75 to 100 percent. The maximum amount of equities in the fund should be 25 percent. The fixed income portion should be managed to fund the shorter liabilities (less than ten years) and equities should be used to fund the long-term liabilities. This high fixed income allocation minimizes the chance of a future fund deficit while the equity exposure will provide higher expected returns and hedge some of the inflation risk associated with the liabilities.

FUND MANAGEMENT

There should be only one manager to manage the fund as a business and the portfolio should be separate from the SBI's current portfolios. The portfolio manager should understand portfolio management as it relates to worker's compensation

and should be able to recommend appropriate management styles. However, staff believes the following recommendations give appropriate guidelines for managing both the fixed income and equity portfolios.

Fixed Income

The duration of the portfolio should approximate the duration of the short-term liabilities. Matching the duration increases the possibility of meeting the stated objective of making liability payments.

Matching the duration of the liabilities does not ensure the liability payments will be met. This method assumes some of the liabilities will be met using asset cash flows and asset sales. This introduces market risk into the portfolio. Additionally, this method assumes a flat yield curve which introduces interest rate risk and is only appropriate for small changes in interest rates. Finally, as stated above, ARP liabilities are hard to predict and their duration is always changing making it hard to match duration.

Although the above risks are present, even greater risks would be incurred if the manager were allowed to deviate significantly from the duration of the liabilities. Any movement away from the liability duration increases the volatility of the fund and increases the likelihood that the liabilities will not be funded.

Matching duration limits how a manager can add value to the fund. As stated, total return is not the main objective of the fund. Matching duration helps to meet the main objective -- meeting liability payments. Incremental value can be added to the portfolio through sector, security and yield curve selectionin the fixed income segment.

Equity

The equity portfolio should provide broad market coverage. This reduces the possibility that the sole manager hired will be invested in an underperforming sector and therefore reduces the risk of increasing premiums. For instance, if a manager concentrates the portfolio in a certain area, the sector may underperform the market for an extended period of time and increase premiums over what they would have been if the investment had been in the entire market.

Exhibit One shows how the returns vary from sector to sector over various time periods. Hiring active managers who specialize in sectors is appropriate if more than one manager is being hired. Since only one manager is being used, a specialized approach is not appropriate for the ARP. If the stock segment is actively managed, a broad based

approach is more appropriate than an approach which concentrates in one area of the market. Staff believes that indexing or enhanced indexing also may be appropriate strategies for the equity portfolio.

BENCHMARKS

Fixed Income

The fixed income benchmark should, as much as possible, reflect the liability stream. Ideally, the benchmark should consist of securities that mimic the liabilities. However, this benchmark may be difficult to produce. Therefore, a benchmark consisting of published indices combined to reflect the duration of the liability stream and the long-term sector allocations of the fixed income manager would be appropriate. For example, if the duration of the liabilities is three years and the manager plans to only invest in Treasury and Corporate securities, an appropriate benchmark could have the following characteristics.

Merrill Lynch Index	Percentage of Benchmark	Duration, 9/30/91 (years)
1-10 Yr Treasury	50	3.06
1-3 yr Corporate	25	1.51
5-10 yr Corporate	25	4.18
Total	100	2.95

The above benchmark is only an example. A specific benchmark must be developed in conjunction with the manager for the ARP. Further, the benchmark will need to be adjusted whenever estimated liabilities for the ARP change. Staff anticipates that the benchmark will be reviewed at least annually.

Equity

As discussed above, the equity benchmark should reflect the desire for broad market coverage, e.g. the Wilshire 5000. However, if an active manager is selected, a customized benchmark that reflects the manager's investment style should be developed.

Total Fund

The total fund benchmark would be weighted in the same proportion as the recommended asset allocation for the ARP.

1. Peter D. Noris, C.F.A., Morgan Stanley, Asset/Liability Management Strategies for Property & Casualty Companies, May 1985

2. Best's Insurance Management Reports, 1989 Workers' Compensation, July 23, 1990

3. David F. Babbel, David R. Klock, Paul V. Polachek, Goldman Sachs, Insurance Perspectives, Assessing the Interest Rate Risk of Property and Casualty Companies, April 1988

4. Best's Insurance Management Reports, Workers' Compensation -- 1990, August 5, 1991

EXHIBIT ONE

Stock Market Performance

Periods Ending June 30, 1991

Wilshire 5000: Qtr. = -0.3%

Large Value 2.7%	Large Growth -0.9%
Small Value 7.0%	Small Growth -0.7%

Wilshire 5000: Year = 7.0%

Large Value 12.4%	Large Growth 10.2%
Small Value 13.5%	Small Growth 7.6%

Wilshire 5000: 3 Yr. = 13.0%

Large Value 12.6%	Large Growth 18.3%
Small Value 8.8%	Small Growth 8.8%

Wilshire 5000: 5 Yr. = 10.2%

Large Value 12.6%	Large Growth 12.5%
Small Value 8.0%	Small Growth 5.2%

Wilshire 5000: 10 Yr. = 14.1%

Large Value 17.8%	Large Growth 14.1%
Small Value 20.6%	Small Growth 9.8%

INTERNATIONAL EQUITY INVESTING

FOR THE BASIC RETIREMENT FUNDS

Position Paper

November 1991

<u>STAFF WORKING DRAFT</u>

<u>SUBJECT TO REVISION</u>

EXECUTIVE SUMMARY

This paper reviews the rationale for international investing and highlights a number of issues which should be addressed as the Board develops its investment program for international equities. The major conclusions and recommendations are:

- The case for international investing lies in three areas: increased investment opportunity, greater diversification and potential for higher return. Nearly two-thirds of the world's market now lie outside the U.S. By diversifying across world markets the Board can both enhance return and reduce risk/volatility of the total portfolio.

- Japan, U.K., Germany and France comprise nearly three quarters of the value of the international markets. Fourteen (14) other countries in Europe and the Pacific Basin make up the remainder of the more well established stock markets. Emerging markets in Central and South America, Eastern Europe and Asia are growing rapidly and pose special investment considerations and limitations.

- The Board's decision to allocate 10% of the Basic Funds to international stocks is well within current practice among pension investors. A strong case can be made for increased commitments in the future as the Board's experience with international investing grows.

- The Board's South Africa policy will reduce the range investment opportunities and have either a positive or negative effect on performance, depending on the time period analyzed. As a result, staff recommends that the Board use a "South Africa Free" benchmark to measure performance.

- Some additional costs are an unavoidable part of transacting in the international markets. All U.S. investors incur withholding taxes on dividend income from foreign securities. In addition, transaction costs and management fees are higher for international portfolios. As with the Board's domestic portfolios, however, all these costs will be deducted before returns are calculated. Income from securities lending on the Board's international portfolio will offset a portion of global custody charges and may even provide a net gain for the portfolio.

- International stock returns can be attributed to three factors: country allocation, stock selection and currency effect. Historically, about 80% of returns have been due to country or market allocation. In theory, greater inefficiencies in the international markets should offer

opportunity to enhance return through stock selection as well.

- Investors incur foreign exchange exposure or currency risk when they buy foreign securities. When the dollar strengthens/appreciates, U.S. investors will suffer currency losses on their portfolios. When the dollar weakens/depreciates, U.S. investors see currency gains. Currency hedging can insulate international portfolios from the effect of currency fluctuations. Hedging can reduce risk/volatility of an international equity portfolio substantially. At the same time it will reduce the diversification benefit to some degree.

- Staff believes that there are strong arguments both for and against systematic currency hedging. At the present time, staff recommends that the Board allow the individual active managers to use currency management as part of their portfolio management process and not adopt a constant hedging strategy for the entire allocation. The option to hire a single currency overlay manager to address this issue at the total portfolio level deserves further study in the future.

- There are three sources for broad international index data: Morgan Stanley Capital International Index of Europe, Asia and the Far East (EAFE), Financial Times Europe-Pacific Basin (FT) and Salomon Brothers Frank Russell Europe-Asia (SFR). None of the three sources is ideal. Overall, staff recommends EAFE as the Board's index source. SFR's greater investability and FT's broader market coverage are not sufficient to overtake EAFE's advantage as the most widely recognized and accepted index source among U.S. investors.

- Staff recommends that the Board adopt a benchmark that is weighted 50% Europe and 50% Pacific Basin as its asset class target for international stocks. This benchmark will be diversified across international markets and will avoid concerns about the high weight given to Japan in a purely capitalization weighted benchmark. The proposed benchmark can be constructed and monitored effectively using published data from Morgan Stanley Capital International.

- International investment managers fall into several broad categories:

  - Top-down (focus on country allocation)
  - Bottom-up (focus on stock selection)
  - Active/Passive (active country, passive stock)
  - Passive (indexation)
  - Regional Mandates (focus on geographic area)

Currently, most assets are actively managed by either top-down or bottom up managers. Active/passive and passive strategies are newer, growing strategies. Regional mandates, either active or passive, take advantage of specialized strengths and skills of certain managers and are gaining interest among plan sponsors.

- Staff recommends a combination of approaches for the Basic Funds' international equity program:

  - 50% passive (1 manager)
  - 25% active/passive (1 manager)
  - 25% bottom-up regional (2 managers)

  This structure takes advantage of some of the newer, more promising international strategies. In addition, it reduces management costs and keeps monitoring and evaluation efforts at a manageable level.

- Staff recommends that the Board put this structure in place over the next 18 months and separate implementation into three stages:

  - Stage 1: passive component Jan 1992 - Dec 1992
  - Stage 2: active/passive component Jul 1992 - Mar 1993
  - Stage 3: bottom-up regional component Oct 1992 - Sep 1993

  By phasing-in both the manager search process and the funding schedule, the Board will dollar-cost-average its move into the international markets.

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INTRODUCTION

At its meeting on September 11, 1991, the State Board of Investment (Board) approved the addition of international equities to the Basic Retirement Funds and directed staff to develop an appropriate implementation plan for the Board's consideration. This position paper reviews the rationale for international investing and highlights a number of issues which should be addressed as the Board develops its investment program for international equities. Where appropriate, staff's recommendations on specific issues are presented.

The paper is organized around the following questions:

- o What is the case for international investing?
- o How much should be allocated to international stocks?
- o How do South Africa restrictions affect international portfolios?
- o How do the costs of international portfolios and domestic portfolios compare?
- o What is the relative importance of country allocation, stock selection and currency management in actual returns?
- o Should currency risk be controlled?
- o Are adequate benchmark indices available?
- o What management options are available?

WHY INTERNATIONAL?

The case for international investing is well established. Its attractiveness is three-fold:

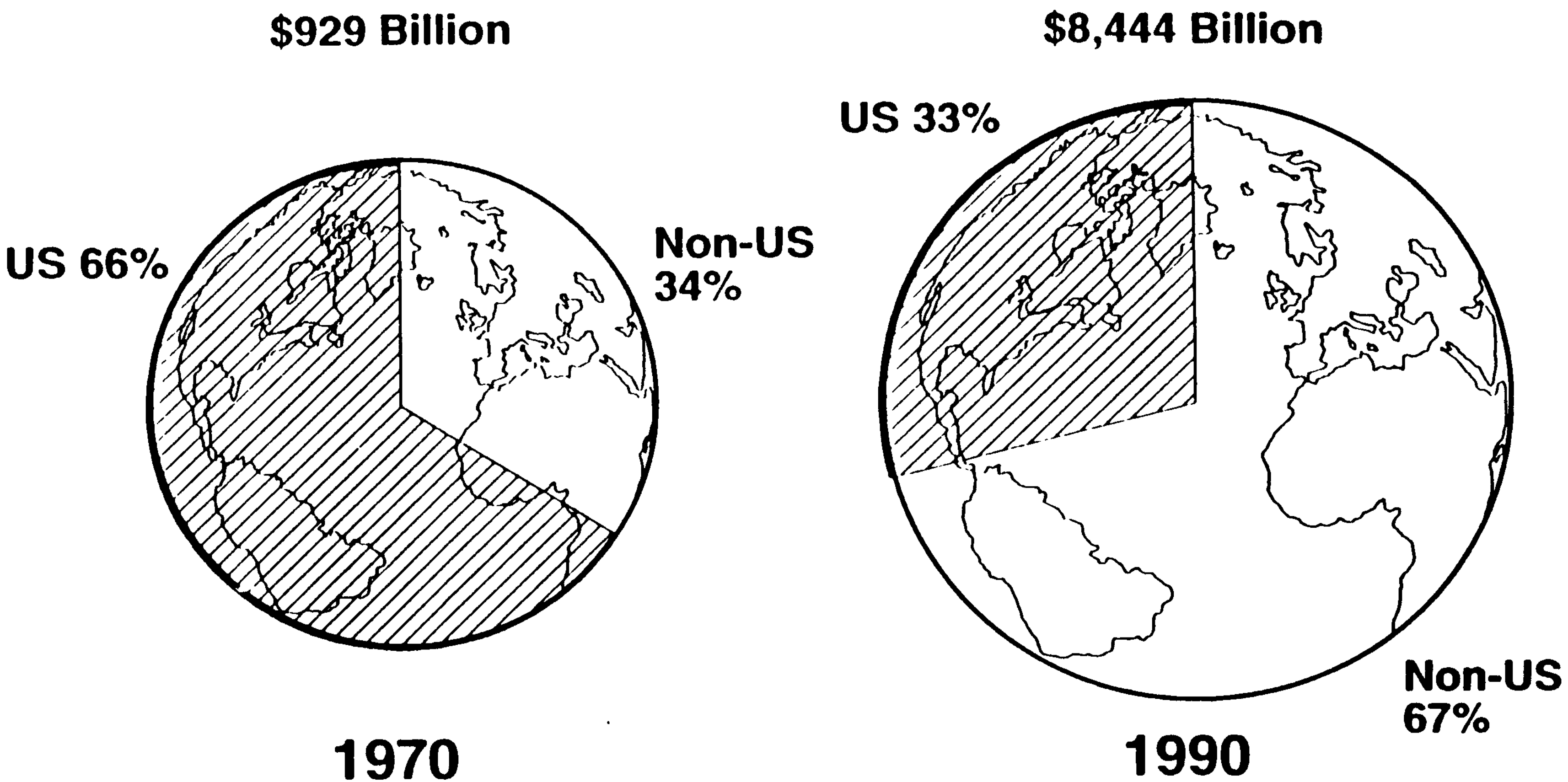
- o increased investment opportunity
- o diversification
- o potential for higher return

Today, more than half the value of the world's capital markets lies outside the U.S. As shown in Figure 1, the U.S. stock market made up nearly two thirds of the value, or capitalization, of the world stock markets in 1970. By 1990, this proportion was reversed; approximately two thirds of stock market capitalization is now in non-U.S. markets. This change means that many of the world's largest corporations are based in Europe or the Pacific Basin. In addition, certain industries (e.g. consumer electronics) have little presence among U.S.-based companies. Expanding the investment universe beyond the U.S., therefore, substantially increases investment opportunity.

Where are these increased opportunities? The most widely quoted international index is the Morgan Stanley Capital International index of Europe, Australia and the Far East (EAFE). As shown in Figure 2, four (4) countries (Japan, U.K., Germany, and France) comprise more than three quarters of the market value of the established international stock markets. Fourteen (14) other countries in Europe and the Pacific Basin make up the remainder. While new stock markets in Central and South America, Eastern Europe and Asia are developing rapidly, these less well established markets are usually referred to as "emerging markets" and are not included in EAFE. Staff believes that emerging markets have unique investment opportunities and limitations and therefore should be considered separately from the more established international markets. There markets should not be ignored, however. Over the next decade their combined share of the international markets could grow to over 10%.(1)

FIGURE 1

World Market Capitalization



Russell

FIGURE 2

MORGAN STANLEY CAPITAL INTERNATIONAL INDEX
OF EUROPE, AUSTRALIA AND THE FAR EAST
(EAFE)
AS OF 12/31/90

By Country Weights

Country	Weight
Japan	50.4%
United Kingdom	17.5
Germany	6.7
France	5.5
Switzerland	3.1
Netherlands	2.8
Australia	2.2
Italy	2.5
Spain	1.8
Sweden	1.6
Hong Kong	1.4
Singapore	1.1
New Zealand	0.2
Others*	2.2
	100.0%

* Austria, Denmark, Norway, Belgium, Finland

By Region

Region	Weight
European Countries	44.7%
Pacific Basin Countries	55.3
	100.0%

Source: Morgan Stanley Capital International

Despite growing economic integration, global events still impact markets differently. For example, the stock market "crash" in October 1987 affected stock markets all over the world but forced greater declines in the U.S. than most other markets. A more recent example comes from the events leading up to the Gulf War in the summer of 1990 when concerns about an interruption in oil supplies impacted the Japanese stock market more severely than other markets. This was due, in part, to Japan's greater dependence on imported oil.

These examples suggest that investments in non-U.S. securities still offer diversification benefits despite the growing trend toward globalization. Figure 3 presents annualized return and risk data for U.S. and international markets as well as the corresponding correlation coefficient. As shown, the correlation between U.S. and international markets actually declined over the period. The data indicates that diversification potential from international investing remains strong.

Over time, certain regions of the world are likely to become more highly integrated. European countries are breaking down trade barriers and may move toward a common central bank and single currency. Growing trade and investment among countries in the Pacific Basin may bring more economic unity to that region as well. However, full integration of economic policies and financial markets does not appear imminent and world markets are not likely to move in tandem in the near future. Diversification across markets takes advantage of this phenomenon and offers a

FIGURE 3

U.S. VS NON U.S. EQUITIES
ANNUALIZED RETURN, RISK AND CORRELATION

10 Years Ending	U.S. Return	U.S. Risk(1)	Non-U.S. Return	Non-U.S. Risk(1)	Correlation (2)
1981	6.5	17.5	10.6	19.1	.54
1982	6.7	18.6	7.0	19.6	.55
1983	10.6	18.2	11.1	18.4	.59
1984	14.8	15.6	14.8	17.5	.44
1985	14.2	14.0	16.4	15.3	.32
1986	13.7	14.4	22.3	17.3	.31
1987	15.2	17.0	22.9	18.9	.42
1988	16.2	16.5	22.4	19.4	.40
1989	17.4	16.6	22.9	19.6	.36
1990	13.8	17.1	17.2	21.9	.41

(1) Standard Deviation
(2) R^2, Coefficient of Determination

Source: Frank Russell Company

consistent way to control risk and dampen volatility of the total portfolio.

Historical returns have made international investing very attractive:

	U.S. Stocks	International Stocks
Last 20 Years	11.2%	15.4%
1970's	5.9	10.1
1980's	17.6	22.8

Source: Ibbottson Associates

Generally, the higher historical returns from international markets are attributed to the higher growth rates of countries outside the U.S. Recent gross national product (GNP) growth for major economies is shown below:

	Annual GNP Growth 1988 - 1990
Japan	5.5%
Germany	4.1
France	3.3
Italy	3.3
U.S.	2.6
U.K.	2.5

Source: PanAgora Asset management

Many observers believe that European and Pacific Basin economies will continue to outpace the U.S. in the 1990's. International stock investments provide a means to participate in these higher growth rates and offer the potential for higher returns than the U.S. market.

Despite the obvious attraction of higher returns, diversification remains the strongest argument for international investing. Non-U.S. securities will continue to provide counter cyclical investment returns to the U.S. market. Over time, adding international stocks to the Basic Funds will both enhance returns and reduce the risk/volatility of the total portfolio.

HOW MUCH SHOULD BE ALLOCATED?

The Board has approved a 10% allocation to international stocks in the Basic Retirement Funds. The total fund asset allocation targets for the Basic Funds are:

Equities		60%
Domestic Stocks	50	
International Stocks	10	
Alternative Investments		15
Private Equity		
Real Estate		
Fixed Income		25
Domestic Bonds	24	
Cash Equivalents	1	
		100%

How does the 10% international stock target compare to other public and private pension fund investors? A 5-10% allocation is typical among large pension plans at the present time but many plans are considering increasing their allocation in the 10-20% range.(2) A list of some of the large public funds who are investing internationally is included on Appendix A. The allocation to international securities among these funds ranges from 3% to 20%.

Figure 4 shows the effect of adding non-U.S. stocks to an equity portfolio for 15 year periods ending 1983 through 1990. Each line represents the risk/return relationship for a stock portfolio with 0, 10, 20 and 30% international exposure. In each time period, increasing international stocks reduced volatility and increased return. With 10% of the total Basic Funds allocated to international, the analogous exposure for the Basic Funds' stock segment is about 17% (10 ÷ 60 = 16.7%). Computer driven optimization models suggest that international allocations substantially above the 30% level will provide continued risk/return benefits.(3)

The Board's decision to allocate 10% of the Basic Funds to international equities clearly is within the range of current practice among pension plan sponsors. While a higher allocation could be justified based on risk/return analysis, staff believes that the 10% target represents a prudent commitment to a new asset class within the Basic Funds. As the Board gains greater experience with international investing, it may be appropriate to increase the allocation target in the future.

WHAT IMPACT DO SOUTH AFRICA RESTRICTIONS HAVE?

The Board's resolution on South Africa applies the same restrictions to foreign and domestic holdings in all of the Board's actively managed stock portfolios.(4) Under this policy, the Board's active international stock managers will be directed to refrain from purchasing stock of companies with direct investment in South Africa unless the manager determines that

FIGURE 4

Long Term: Increased Return and Reduced Risk

Risk-Return Performance Comparisons

Combinations of Indexes:
US Equities
Non-US Equities

Currency:
US$

Time Period:
15 Years Ending
4th Quarter
1983-1990

Annualized Rate of Return

18.7
17.6
16.5
15.4
14.3
13.2
12.1
11.0
9.9
8.8
7.7
6.6

1989
1990
1988
1986
1985
1987
1984
70/30
80/20
90/10
US Equities
1983

70/30 represents a 70% weight in the US Equities and a 30% weight in the Non US Equities

14.7 15.1 15.5 15.9 16.3 16.7 17.1 17.5 17.9 18.3 18.7 19.1
Annualized Standard Deviation

failure to complete a purchase would be a breach of the manager's fiduciary responsibility.

Staff relies on information compiled by the Investor Responsibility Research Center (IRRC) in Washington D.C. to identify U.S. companies with direct investment in South Africa.(5) IRRC maintains an identical service for international companies and staff has access to this information through the Board's subscription to IRRC's South Africa Review Service. A list of publicly traded international companies with direct investment in South Africa is in Appendix B.

A South Africa restriction has two impacts on either domestic or international portfolios:

- o It reduces the range of investment opportunities.
- o It can have either a positive or negative affect on performance, depending on the time period examined.

Morgan Stanley has studied the impact of removing companies with investment in South Africa from the EAFE index. As shown in Figure 5, a "South Africa Free" (SAF) index differs significantly from EAFE:

- o The proportion of U.K. and German companies is substantially lower in a SAF index. The number of companies is reduced by roughly half in both cases. Since many of these corporations are very large companies, more than half the capitalization of Germany and the U.K. is excluded.
- o The proportion of Japanese companies rises in a SAF index. Japan has 50-60% weight in EAFE. In a SAF index, the Japan weight increases to 60-70%.

Despite these differences, the correlation between EAFE and a SAF index remained high (99.2%). Overall, the SAF index had fewer

FIGURE 5

THE IMPACT OF SOUTH AFRICA HOLDINGS ON THE EAFE INDEX

	EAFE	South Africa Free EAFE
Number of companies	1,023	817
% capitalization of index	100%	70.8%
Volatility	19.3%	19.8%
Correlation with EAFE Index	-----	99.2%

	# Companies in EAFE	# Companies Excluded
Japan	265	33
U.K.	136	63
Germany	58	30
France	83	13
Switzerland	52	34
Australia	66	6
Italy	68	9
Netherlands	24	7
Hong Kong	32	0
Sweden	38	3
Spain	31	1
Singapore	53	0
Belgium	22	3
Norway	18	0
Denmark	27	3
Finland	21	0
New Zealand	14	0
Austria	15	0
Total	1,023	205

Source: Morgan Stanley Capital International, 1989.

and smaller companies and showed somewhat increased volatility compared to an unrestricted EAFE index.

Performance data for SAF EAFE has been available for only a short time. A comparison of available data is shown below:

Time Period	EAFE	SAF* EAFE	SAF Diff.
1/88 - 12/88	28.43%	29.81%	-1.38%
1/89 - 12/89	10.84	6.95	3.89
1/90 - 12/90	-23.20	-27.80	4.60
1/91 - 9/91	10.58	11.12	-0.54
1/88 - 9/91 Annualized	5.19%	2.92%	2.27%

* EAFE weights by country, South Africa Free (SAF) within each country

Source: Boston International
Richards & Tierney

Staff concludes that the Board's South Africa restrictions will alter the composition of its international portfolios relative to a broad index. While the resulting performance differences could be either positive or negative, the deviations are likely to be material on a quarter to quarter basis. Therefore, staff recommends that the Board employ a "South Africa Free" index to measure the performance of its active international stock portfolios.

WHAT ARE THE COSTS?

The costs of investing internationally are higher than the costs for domestic portfolios in four key areas:

- o withholding taxes

- trading/transaction costs
- management fees
- custody charges

Foreign investors must pay withholding taxes on dividend income imposed by other governments. While the exact amount depends on the different tax treaties between the U.S. and each country, the average non-reclaimable tax is 15% of dividend income received. Aggregate dividend yield on international portfolios is less than 2% so the net tax amounts to 25-30 basis points.(6)(7) Domestic investors do not pay this tax in their home markets.

Transaction costs, i.e. commissions and stamp taxes, are also higher, although these costs are coming down in most markets. Withholding taxes and higher transaction costs are an unavoidable part of doing business in the international markets. As with domestic portfolios, however, manager returns are calculated after these costs have been taken into account.

Investment management fees for actively managed portfolios are about 50-60 basis points higher than for domestic portfolios. The higher fees are assumed to reflect the higher costs of international research and global communication. The management fees for passive/index investing are about 15-20 basis points higher for international portfolios. As with the Board's domestic portfolios, however, management fees will be deducted before returns are calculated.

Custody costs are higher for international portfolios as well. Global custody is a complex process which involves a network of local subcustodians. The personnel costs associated

with an effective network along with increased record keeping demands have kept global custody costs high relative to U.S.-only portfolios. It should be noted that income generated by securities lending on international portfolios can offset a large portion of these costs and may even provide a net gain for the portfolio.

A summary of all these costs is shown below:

Costs That Are Deducted Before Returns are Calculated	(Basis Points) U.S.	(Basis Points) International
o Withholding taxes	----	25-30
o Transaction costs	less than 20	60 or more
o Management fees		
Active	30-50	50-70
Passive	2-8	15-30
Costs That May Be Offset By Income From Securities Lending		
o Custody charges	5-6	20-25

Sources: First Chicago Investment Advisers
Grantham, Mayo, Van Otterloo & Company

Higher costs are, for the most part, an unavoidable part of transacting in the international markets. As with the Board's domestic portfolios, most of these costs will be deducted before returns are calculated on the Board's portfolio. In addition, income from securities lending may provide a net gain for the portfolio.

WHAT ARE THE SOURCES OF RETURN?

The actual returns of international stock portfolios can be attributed to a combination of three factors:

- o Country allocation
- o Stock selection
- o Currency effect

Overall, country allocation or market selection decisions dominate actual returns. This is demonstrated by the wide range between the best and worst performing countries in the EAFE index over the last 10 years:

Year	Best Performing Market	EAFE	Worst Performing Market
1981	38%	-2%	-29%
82	24	-2	-44
83	81	24	-7
84	46	7	-36
85	176	56	-23
86	121	69	-2
87	56	25	-24
88	57	28	-13
89	104	11	-9
90	10	-23	-37

Source: Boston International Advisors, Inc.

Empirical studies confirm that, on average, 80% of overall international portfolio return comes from country or market selection allocation.(8)(9)

Stock selection also impacts portfolio returns. International markets are considered less efficient than the U.S. market. The lack of uniform accounting and disclosure standards in international markets are usually cited as the major contributors to inefficiency. In theory, international active managers should be able to exploit these inefficiencies and generate value added returns more easily than domestic managers.

The difference between return measured in U.S. dollars and return measured in local currency is the currency effect. As shown below, currency impact can help or hurt performance over the short term.

EAFE Index Return

	U.S. Dollar	Local Currency
1990	-23.4	-29.8
1989	10.5	21.5
1988	28.3	33.7
1987	24.6	-2.3
1986	69.4	42.5
1985	56.2	28.5
1984	7.4	20.9
1983	23.7	31.6
1982	-1.9	9.0
1981	-2.3	10.8

Source: Cambridge Associates, Inc. based on data from Morgan Stanley Capital International Perspective

SHOULD CURRENCY RISK BE CONTROLLED?

Foreign securities are denominated in their own currencies. As a result, investors incur foreign exchange exposure at the same time they add international securities to their portfolios. The exchange rate in effect at the time of purchase affects the investor's initial cost in dollar terms. During the holding period, the currency exchange rate will move up or down from the rate in effect at the time of purchase. When these changes are translated back into dollar terms, the portfolio will register gains or losses solely due to the fluctuation in exchange rates. When the dollar strengthens/appreciates relative to other currencies, U.S. investors will suffer currency losses on their international portfolios. When the dollar weakens/depreciates U.S. investors see currency gains.

Time horizon is extremely important in analyzing the significance of foreign exchange movements on returns. As shown in Figure 6, the U.S. dollar had two major down cycles and one major up cycle between 1976 and 1988. When examined over both an up and down cycle, cumulative dollar returns are very close to cumulative local returns (see Figure 7). Before both the up and down cycles have been completed however, dollar returns can differ markedly from local returns. These differences can be difficult for investors to tolerate since currency cycles can be protracted.

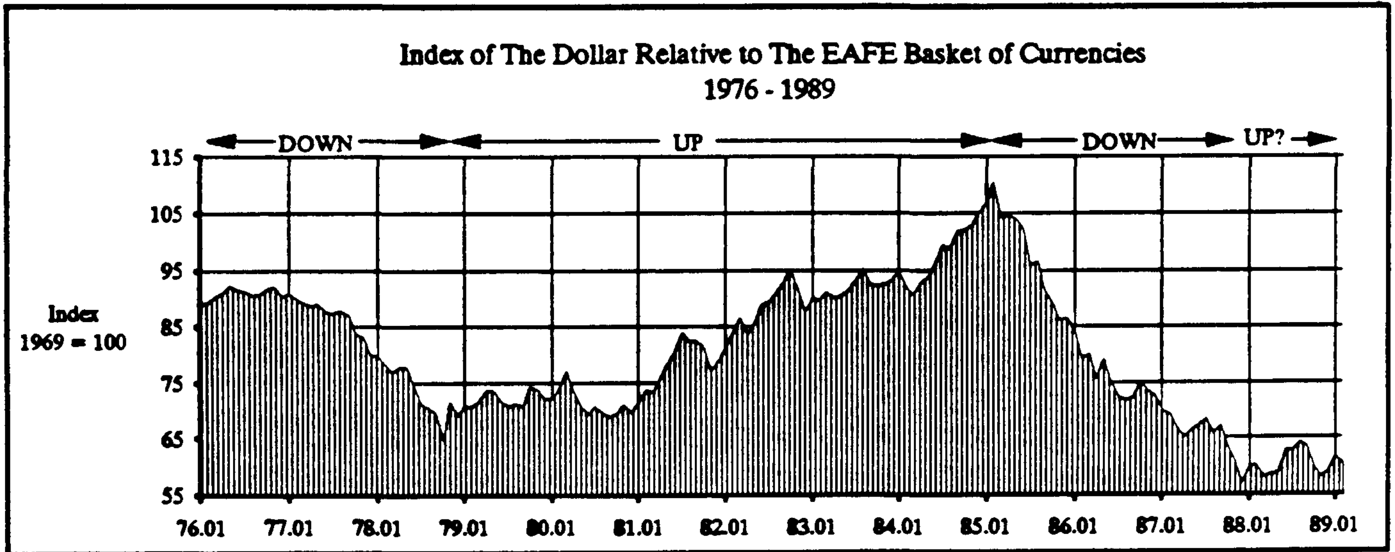
Currency hedging can insulate international portfolios from the effect of currency fluctuations. Typically, the hedge is accomplished by using the forward currency markets to lock-in a fixed exchange rate for a specified period of time. By removing currency exposure, the risk/volatility of an international equity portfolio can be reduced by 15-30%. Since it is possible to hedge currency with fairly low transaction costs (estimates are usually cited in the range of 25-30 basis points per year), hedging is considered a very cost effective risk reduction technique by many investors.

The reduction in risk/volatility afforded by currency hedging is not entirely free, however:

- o When the fluctuations associated with currency exposure are removed, international securities behave more like domestic securities and some diversification benefit is lost.

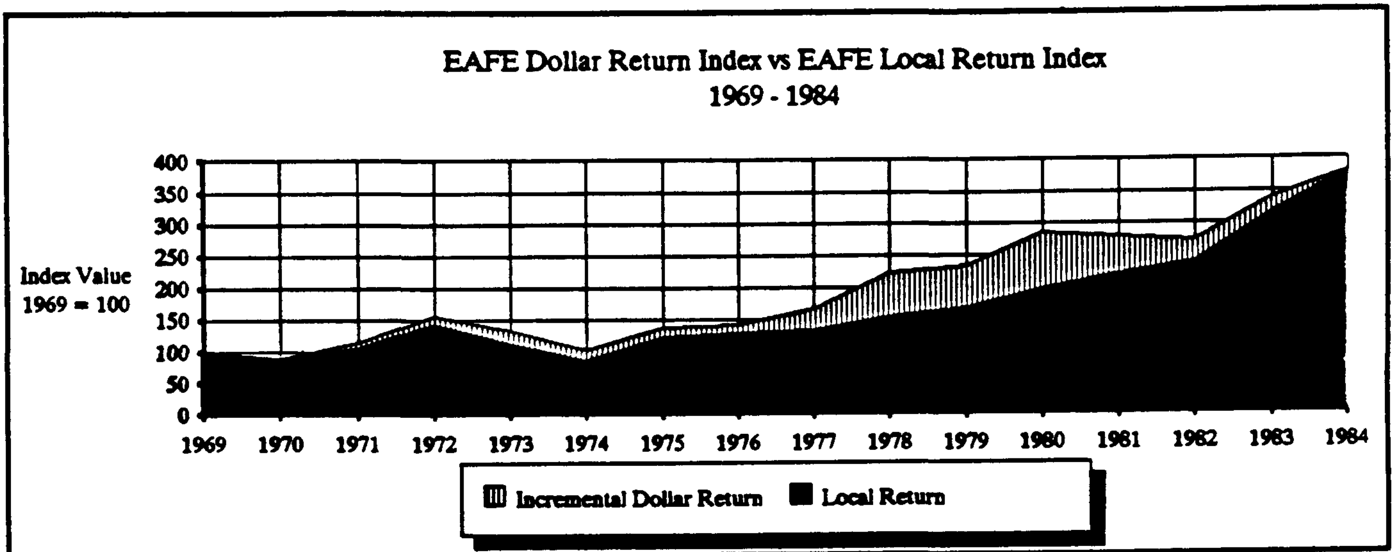
- o Depending on the frequency and aggressiveness of the hedging strategy, transactions costs can erode total portfolio return. If the hedging strategy is carried out by a manager specifically hired for this purpose, incremental management costs will be incurred as well.

FIGURE 6



Source: Callan Associates

FIGURE 7



Source: Callan Associates

Several prominent theorists and practitioners advocate viewing currency risk as an active decision that should be explicitly controlled.(10) In effect, currency can be treated as a separate asset class and pension plan sponsors have a variety of options in dealing with it:

- o Systematic Approach

  This approach involves hedging all currency exposure, or a constant proportion of the exposure, at all times. The plan sponsor can implement the hedge itself or hire a currency overlay manager to maintain the hedge. This strategy has the greatest potential for risk reduction since the currency exposure is managed on a consistent basis. While this strategy has been the subject of a great deal study recently, a very small number of plan sponsors have taken this approach to date.(11)

- o Opportunistic Approach

  This strategy allows selective hedging based upon a currency forecast and is most often used when the goal of currency management is enhanced return. Tactical hedging can be implemented by a single currency overlay manager or left to the judgement of individual portfolio managers. Since individual managers vary greatly in the emphasis they place on currency management, the latter approach may result in uneven attention to currency exposure.

Currency hedges can be implemented using a single currency, all currencies or a basket of currencies. Nearly all exposure can be covered using a few major currencies: U.S. Dollar, Pound Sterling, Japanese Yen, Deutschmark. As a result, most hedging is accomplished by transacting in those few currencies.

Staff believes that there are strong arguments on both sides of the currency hedging question. The risk reduction potential of a systematic approach is significant. On the other hand, the long time horizon and relatively high risk tolerance of the Basic Retirement Funds make the portfolio an ideal candidate for

opportunistic hedging. At this time, staff recommends that the Board design its investment structure around an opportunistic approach to currency hedging. At the outset, the individual active managers should be allowed to use currency management as part of their portfolio management process. The option to hire a single currency overlay manager to address this issue at the total portfolio level deserves further study.

ARE ADEQUATE INDICES AVAILABLE?

There are three sources for broad international indices available to plan sponsors:

- o Morgan Stanley Capital International's Europe, Australia and the Far East (EAFE).
- o Financial Times Europe-Pacific Basin (FT)
- o Salomon Brothers Frank Russell Europe-Asia (SFR)

EAFE pre-dates the other two and was created before indexing was contemplated for international portfolios. It became the first source for research and comparison of international markets and managers. FT sought to aid in comparison and research, but also aimed to provide an index that was more diversified and more easily applied to indexation strategies. SFR tried to create a broad index that traded easily in order to focus on the problems associated with creating and maintaining index funds.(12)

None of the three provides an ideal index; the choice of one over the other must relate to the plan sponsor's judgement about relative importance of the following factors:

- o construction rules
- o coverage and diversity
- o investability and cost
- o quantity and availability of data

All three indices are capitalization weighted, that is, issues in the index are weighted according to the value of their outstanding stock. While Modern Portfolio Theory holds that the most efficient and representative portfolio is capitalization weighted, this methodology poses several problems for international indices:

- o It gives greater importance to countries with highly developed public equity markets.
- o It overstates the value of some corporations because of "cross ownership" and results in some degree of double counting. (Cross ownership refers to the fact that many international corporations own significant portions of the stock of other companies.)
- o It overstates the value of shares actually available due to government restrictions on foreign ownership or to the lack of liquidity on very closely held companies.

EAFE, FT and SFR differ in the way they address the latter two issues. A summary of their characteristics is shown in Figure 8:

- o EAFE attempts to include at least 60% of each industry in each country in its index. There is no adjustment for cross ownership, closely held companies or non-purchasable shares.
- o FT includes a significantly higher number of issues in each country and is therefore broader than EAFE. While it does not adjust for cross ownership, FT excludes stock which cannot be purchased by U.S. investors and makes adjustments for closely held companies.
- o SFR has fewer issues than either EAFE or FT because it focuses on larger capitalization companies. SFR adjusts for restricted stocks and closely held companies and is the only one of the three indices that attempts to compensate for cross holdings.

In terms of coverage and diversity, FT appears to be superior to the others. It includes a greater number of issues and its country by country sub-indices are better proxies for individual

FIGURE 8

COMPARISON OF INDEX SOURCES

	EAFE	SFR	FT
Adjustments for			
- cross ownership	no	yes	no
- closely held co's	no	yes	yes
- non-purchasable shares	no	yes	yes
Countries	18	20	20
Companies	981	541	1,683
Total Cap	$2.9 trillion	$2.2 trillion	$3.8 trillion
Mean Cap	3.0 billion	4.0 billion	2.3 billion
Median Cap	1.0 billion	1.8 billion	0.7 billion
Large Cap > $5 billion	63%	70%	59%
Medium Cap 0.5 - 5 billion	55	33	39
Small Cap < 0.5 billion	3	2	2
Correlation			
EAFE	---	.994	.997
SFR	.994	---	.989
FT	.997	.989	---
Standard Dev.	20.6%	21.2%	20.8%

Source: Bankers Trust, September 1988

	EAFE	SFR	FT
Staff Ranking (1 = highest)			
- coverage	2	3	1
- investability/cost	2	1	3
- history/amount of data	1	2-3	2-3

EAFE - Morgan Stanley Capital International Index of Europe, Australia and the Far East

SFR - Salomon, Frank Russell Index

FT - Financial Times - World Actuaries Index

FIGURE 8 Con't

COMPARISON OF INTERNATIONAL INDICES

COUNTRY ALLOCATION BY NUMBERS OF SECURITIES

	SFR	MSCI	FT
Japan	163	239	457
UK	70	132	327
Germany	27	58	99
France	57	84	126
Italy	30	67	102
Netherlands	13	22	38
Australia	39	65	88
Switzerland	21	50	55
Sweden	16	36	35
Hong Kong	18	31	46
Spain	20	32	42
Belgium	14	20	63
New Zealand	8	15	21
Singapore/Malaysia	14	55	62
Denmark.	9	26	39
Norway	8	17	25
Ireland	4	-	17
Austria	5	11	16
Finland	2	21	25
Luxembourg	3	-	-

As of 6/30/88

COUNTRY ALLOCATION BY CAPITALIZATION

	SFR	MSCI	FT
Japan	66.0%	62.7%	64.9%
UK	14.5	13.0	14.6
Germany	3.8	4.3	4.3
France	3.1	3.6	3.2
Italy	1.7	2.1	2.1
Netherlands	2.3	2.1	1.8
Australia	2.1	2.4	2.3
Switzerland	1.4	2.4	1.5
Sweden	0.5	1.3	0.4
Hong Kong	1.0	1.3	1.2
Spain	1.5	1.6	1.5
Belgium	0.7	0.9	1.0
New Zealand	0.2	0.3	0.2
Singapore/Malaysia	0.3	0.9	0.3
Denmark	0.2	0.4	0.3
Norway	--	0.2	0.1
Ireland	0.2	-	0.2
Austria	*	0.1	0.1
Finland	*	-	0.1
Luxembourg	*	-	-

As of 6/30/88

* Less than 0.05%

SFR Salomon Frank Russell
MSCI Morgan Stanley EAFE
FT Financial Times Europe-Pacific Basin

Source: Bankers Trust
Data As Of 6/30/88

markets. EAFE ranks second in this area while SFR is the narrowest of the benchmarks. While all three indices have a large capitalization bias, FT captures a greater number of smaller issues and is thus more representative of the entire international market.

SFR ranks highest on investability. Its small number of issues and its concentration in larger, more liquid names makes it the lowest cost index in terms of trading and tracking. FT likely will be the most costly since more and smaller issues translate into higher commissions and higher custody costs. FT's larger number of names present some additional challenges when passive managers attempt to replicate the index through sampling. EAFE appears somewhere between SFR and FT on the investability scale.

EAFE has a clear lead in terms of accessibility to data. Historical records on EAFE cover two decades while FT and SFR were created within the last few years. As a result, EAFE has a wealth of fundamental data that the other two indices cannot match.

Overall, staff believes that EAFE is strongest index source for the Board's international program at this time. The benefits offered by FT's broader market coverage and SFR's greater investability are not sufficient to overtake EAFE's advantage as the most widely recognized and accepted index source among U.S. investors.

HOW SHOULD THE BOARD'S INTERNATIONAL BENCHMARK BE WEIGHTED?

As cited in the previous section, capitalization weighting of an international index gives greater importance to countries with large public markets. In addition, capitalization weighted indices are somewhat unstable over time. For example, the Japanese market grew from 15% of EAFE in 1970 to 70% by 1989 and dropped to about 50% in 1990. Plan sponsors have used several different weighting schemes to develop a reasonable country allocation for an international benchmark.(13) For the most part, all of these methods have been devised to reduce the perceived overweighting of Japan created by a purely capitalization weighted index:

- Set the benchmark at half Europe and half Pacific Basin. The countries within each region then can be equal weighted or capitalization weighted.
- Weight each country equally with some adjustment for liquidity considerations.
- Use a benchmark that weights each country by its gross domestic product (GDP).

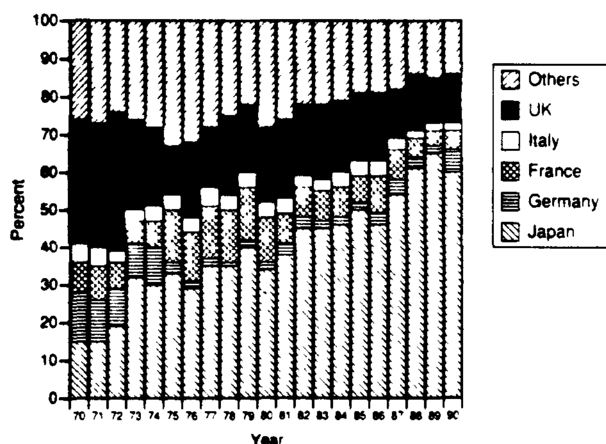
GDP-weighted benchmarks have become fairly popular among plan sponsors and Morgan Stanley now publishes a GDP-weighted version of EAFE. GDP weights are quite stable over time and are more equally spread over the major international markets. Figure 9 shows the history of capitalization versus GDP weighted EAFE from 1970-1990 and Figure 10 compares actual EAFE and GDP-EAFE weights as of June 30, 1990. Despite its appeal, the GDP-EAFE has some problems of its own:

- Morgan Stanley re-weights the entire index only once per year based on data that is nearly a year old. Month-to-month changes are again subject to changes in market capitalization.

FIGURE 9

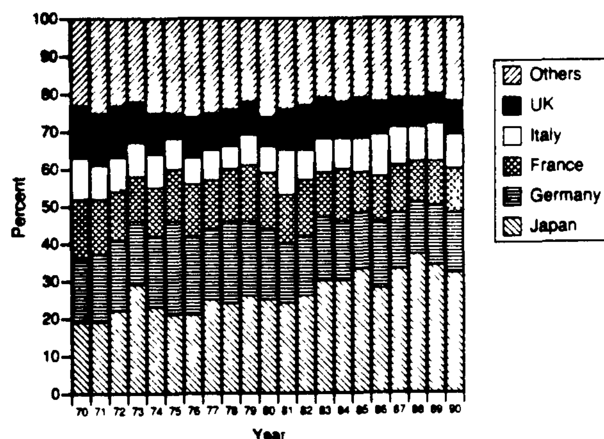
HISTORY OF CAPITALIZATION VS GDP WEIGHTED EAFE
1970-1990

Capitalization weighted



Source Boston International Advisors, Inc

Gross Domestic Product (GDP) Weighted



Source Boston International Advisors, Inc

FIGURE 10

COMPARISON OF GDP AND EAFE WEIGHTS
June 30, 1990

MARKET	GDP WEIGHTS	EAFE INDEX	MARKET	GDP WEIGHTS	EAFE INDEX
Austria	1.6%	0.5%	Switzerland	2.1	3.3
Belgium	1.9	1.1	United Kingdom	9.2	15.2
Denmark	1.3	0.7	**Europe**	**65.1%**	**43.5%**
Finland	1.4	0.3	Australia	3.1%	2.3%
France	11.6	5.7	Hong Kong	0.7	1.4
Germany	14.9	7.0	Japan	30.3	51.5
Italy	10.4	3.0	New Zealand	0.5	0.2
Netherlands	2.8	2.5	Singapore	0.3	1.1
Norway	1.1	0.5	**Pacific**	**34.9%**	**56.5%**
Spain	4.6	1.8			
Sweden	2.2	1.9	**Total**	**100.0%**	**100.0%**

***Source:* Morgan Stanley Capital International Perspective, July 1990**

- The resulting weights for some countries seem inappropriate. For example, Italy takes on a weight equal to or greater than the U.K. despite the fact the U.K. is the world's third largest market in the world and Italy's public market is very small. Since Germany's public market is small compared to its total economy, its proportion of a GDP-weighted benchmark can be questioned as well.

Staff agrees that the high weight given Japan in capitalization weighted benchmarks is cause for concern. Staff believes it defeats the stated goal of diversification to allow a single market to dominate an international portfolio. In addition, as noted in a previous section, the Board's South Africa policy raises Japan's presence in a capitalization weighted benchmark even higher. Accordingly, staff recommends that the Board adopt an alternative weighting scheme for its international benchmark which reflects greater diversification across international markets and recognizes the Board's South Africa restrictions.

Staff concludes that a benchmark weighted 50% EAFE-Europe and 50% EAFE-Pacific Basin, with countries weighted by capitalization within each region, is a straight forward response to these issues. This methodology has several benefits:

- It ensures the benchmark will be diversified across international markets. Since no single country will be over half of the benchmark, Japan's status in a capitalization weighted benchmark is addressed effectively and permanently.

- It provides greater stability to country weights within the benchmark without the distortions of a GDP-weighted approach. Further, it avoids too great an emphasis on illiquid markets that may result from giving each country an equal weight within the region.

- It recognizes two distinct economic regions within international markets. This has applications to a

regional approach in the Board's investment management Structure.

- It can be constructed and monitored effectively using published data from Morgan Stanley Capital International.

WHAT ARE THE INVESTMENT MANAGEMENT OPTIONS?

Plan sponsors have a wide range of options in building their international portfolios. While investment approaches are expanding and evolving over time, the following categories are often used to describe the international manager universe today:

- Top-Down

  The top-down approach focuses on economic or other fundamental factors in an attempt to determine which local markets will perform better than others. Country allocation decisions are therefore of primary importance. Stock selection and currency management, while still part of the active management process, usually receive less attention.

  This approach takes advantage of the large impact that country allocation has on returns. Its disadvantage is that a change in country allocation can affect a large percentage of the portfolio and will drive up transaction costs.

- Bottom-Up

  As the terms implies, bottom-up strategies concentrate on stock selection and attempt to capitalize on the inefficiences in foreign markets. In this approach country and currency decisions are either secondary or are treated as a residual of the stock-picking philosophy. Styles emphasizing value, growth, small or large companies are more frequently seen in bottom-up approaches than in top-down methodologies. Quantitative disciplines are also gaining favor within this category.

- Active/Passive

  The active/passive approach is an offshoot of the top-down strategy that has emerged over the last five years. Here, the country allocation decision is actively managed but stock selection is implemented through a collection of country by country index funds. This approach evolved in response to the observation that many top-down managers added value through country selection but gave up much of the return through poor stock selection or high

transaction costs. This strategy usually requires a minimum of $50-100 million in assets due to the large number of stocks that must be held to replicate indices for multiple countries.

- o Passive

  Passive management/indexation gained favor in the 1980's as an economical way to place sizeable amounts of assets in the international markets. The poor relative performance of many managers during the last decade fueled the growth of indexation as well.

- o Regional Mandates

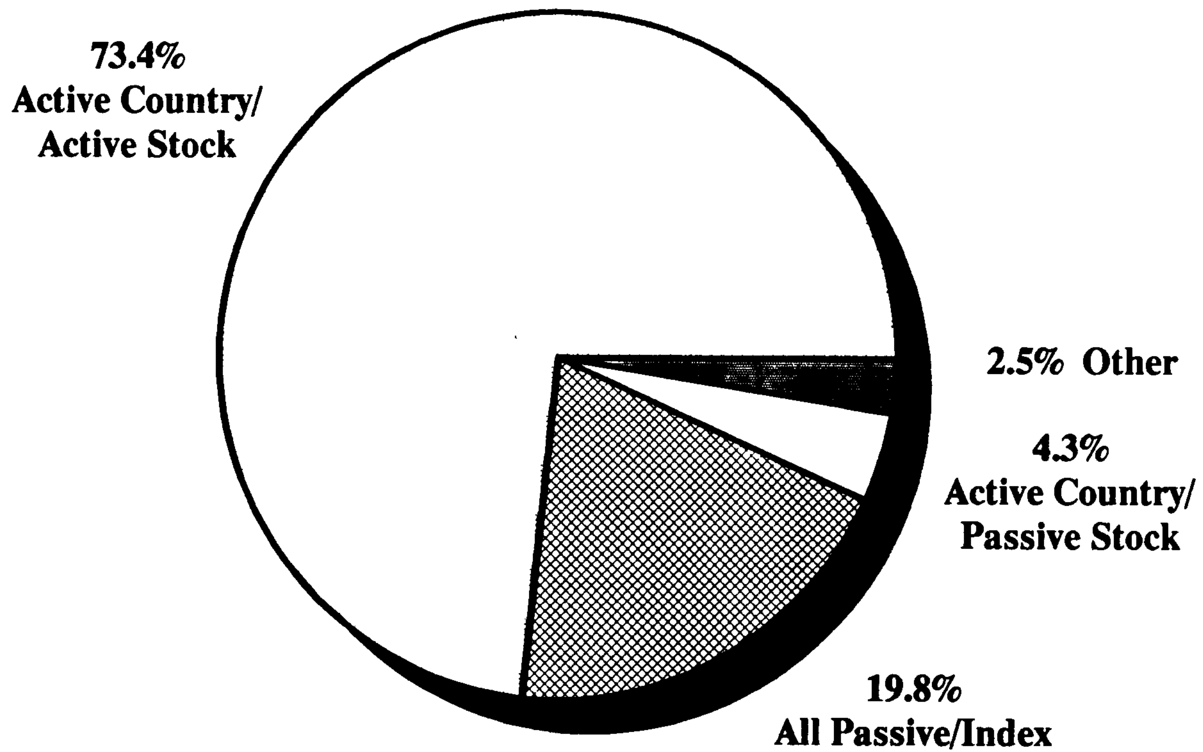
  Regional mandates (e.g. Europe, Pacific Basin, Europe ex-U.K., Japan-only) can be applied to any of the above strategies. This approach takes advantage of specialized strengths and skills of certain managers and has growing interest among plan sponsors.

How are international portfolios being managed today? According to InterSec Research Corporation, nearly three quarters of U.S. tax exempt international equities are managed through traditional active strategies, either top-down or bottom-up. About twenty percent is indexed and the remainder is in either active/passive or other quantitative strategies (see Figure 11). The relatively low level of passive and active/passive strategies reflects the newness of these approaches in international management.

How have international managers performed? The performance of the median manager in InterSec's universe over the last 10 years is shown in Figure 12. Over the last 1 and 3 year periods, the median manager outperformed EAFE by substantial margins but over the trailing 5 and 10 year periods the median manager underperformed the index. The spectacular growth and performance of the Japanese markets during the mid 1980's had a large impact

Figure 11.

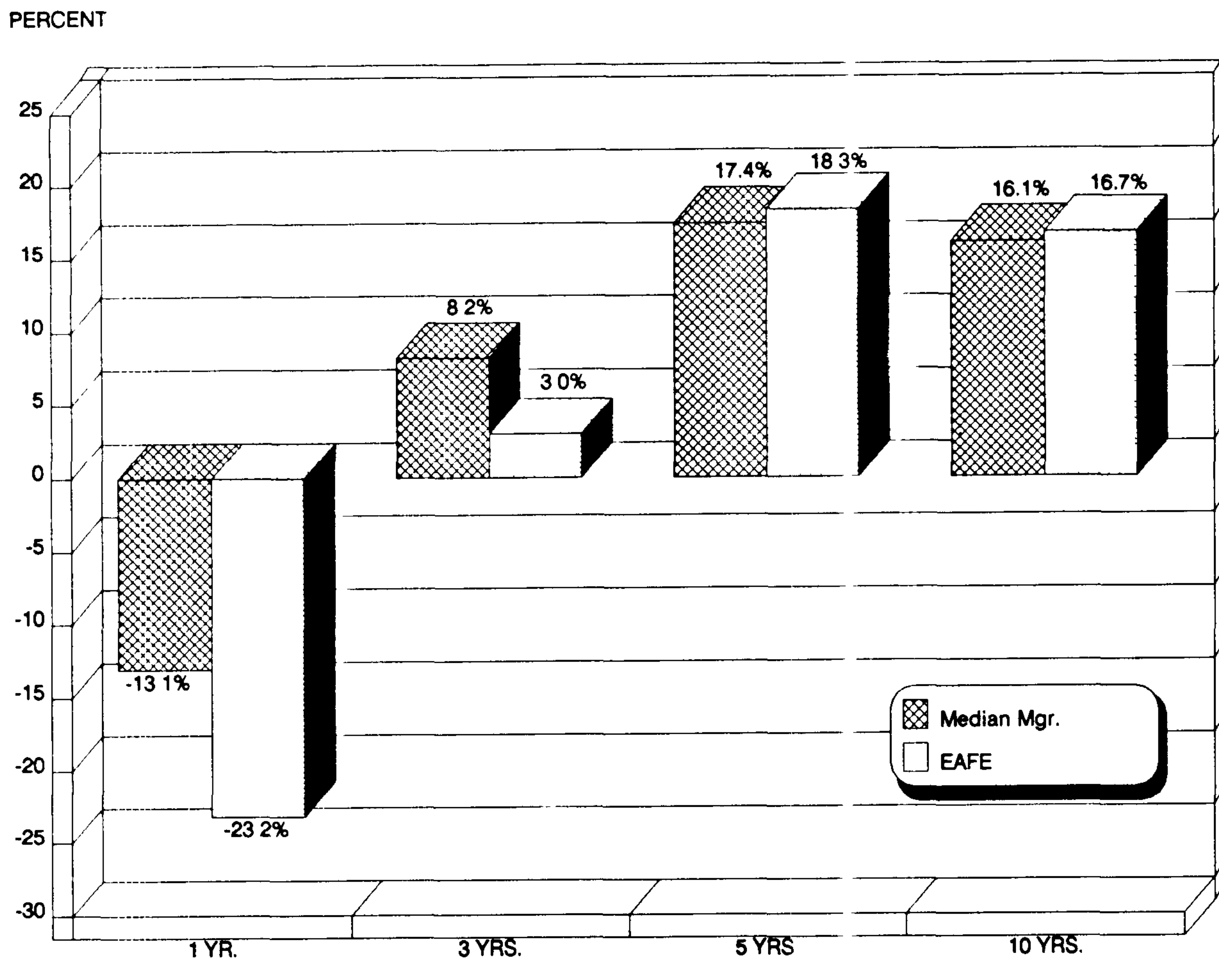
International Investment Approaches Used by U.S. Tax Exempt Funds September 1990



Source: InterSec Research Corp.

Figure 12.

Median Manager Performance
Periods Ending Dec. 31, 1990
Annualized Returns



Source: InterSec Research Corp.

on these results. Many managers underweighted Japan for several years because they felt the Japanese market was seriously over-valued. This decision hurt returns relative to EAFE for a protracted period. Yearly returns from Frank Russell's data base confirm the same pattern and illustrate that "beating the index" can be difficult for international managers over extended periods (see Figure 13).

HOW SHOULD THE BOARD STRUCTURE ITS INTERNATIONAL PROGRAM?

Staff recommends the following investment management structure for the international equity segment of the Basic Funds:

Strategy	Allocation %	Allocation $	Number of Managers
Passive	50.0%	$400 million	1
Active/Passive	25.5%	200 million	1
Bottom-up Regional			
Europe	12.5%	100 million	1
Pacific	12.5%	100 million	1
	100.0%	$800 million*	4

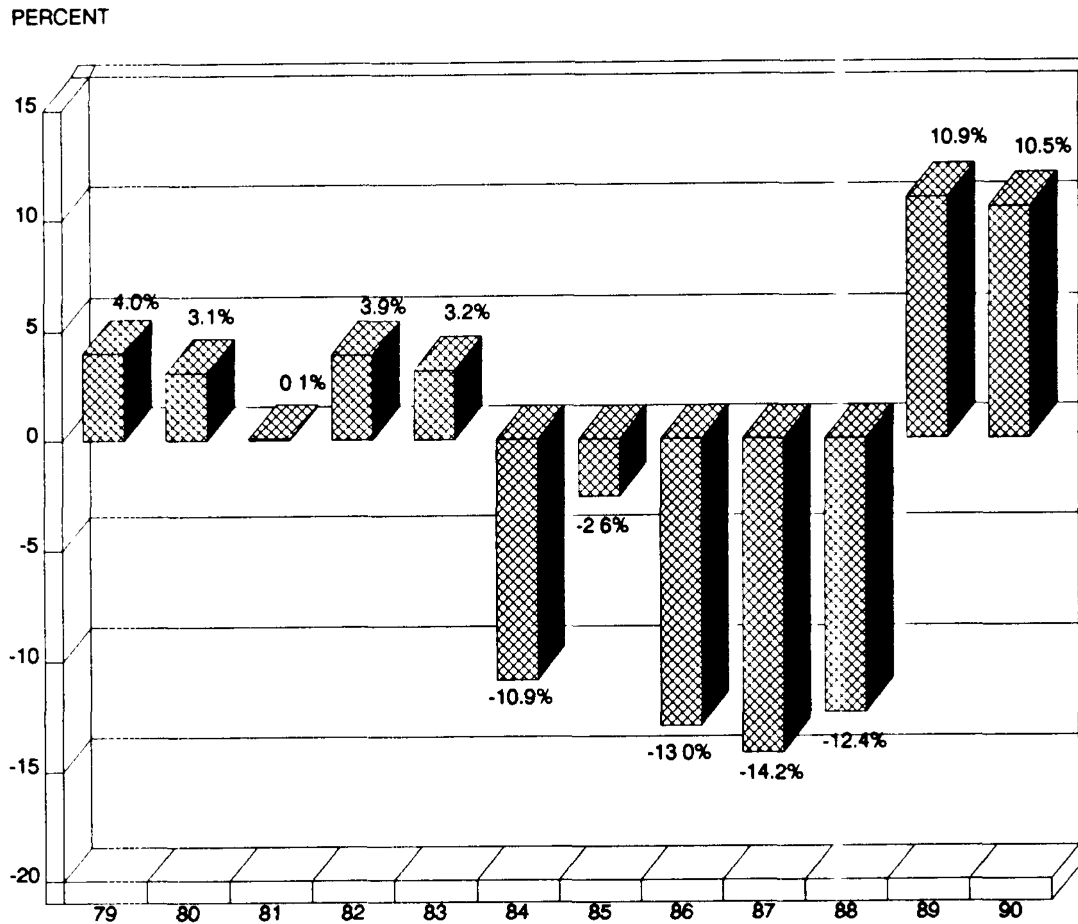
* Assumes Basic Funds have a total value of $8 billion.

This structure has several advantages:

- o It is diversified across several approaches.
- o It employs some of the newer and more promising international investment strategies.
- o It reduces costs through a substantial commitment to passive management.
- o It keeps the resources required to monitor and evaluate the program at a manageable level.

Figure 13.

Excess Returns 1979 - 1990
Median Manager vs. EAFE



Source: Frank Russell Company

It would be both impractical and imprudent for the Board to attempt to put this structure in place immediately. The time required to select managers will be substantial. Equally important, considerable care must be taken to minimize the transaction costs involved with moving over three quarters of a billion dollars from the U.S. market to multiple international markets. Accordingly, if the proposed structure is approved by the Board, staff recommends that implementation should cover the next year and a half and be conducted in three stages:

Stage 1 - Passive Component	Projected Time Frame
o Manager search (1)	Jan 1992 - Jun 1992
o Initial funding ($200 million)	Jul 1992
o Additional funding ($200 million)	Aug 1992 - Dec 1992

Stage 2 - Active/Passive Component	Projected Time Frame
o Manager search (1)	Jul 1992 - Sep 1992
o Initial funding ($100 million)	Oct 1992
o Additional funding ($100 million)	Nov 1992 - Mar 1993

Stage 3 - Bottom-Up Regional Component	Project Time Frame
o Manager searches	Oct 1992 - Mar 1993
- Europe (1)	
- Pacific Basin (1)	
o Initial funding ($50 million each)	Apr 1993
o Additional funding ($50 million each)	May 1993 - Sep 1993

Staff believes this is an ambitious but achievable schedule for manager searches. In addition, by phasing-in both the search process and the funding schedule, the Board will dollar-cost-average its move into international markets.

FIGURE 14

BASIC RETIREMENT FUNDS
INTERNATIONAL EQUITY PROGRAM
SUMMARY OF STAFF RECOMMENDATIONS

Asset Class Target:

- o Source - Morgan Stanley Capital International Index of Europe, Australia and the Far East (EAFE)
- o Weighting - 50% Europe
  50% Pacific Basin
- o Currency - U.S. Dollar, Unhedged

Hedging Strategy:

- o Passive - no hedging
- o Active - opportunistic/tactical hedging

Management Structure:

Strategy	%	# Mgrs.	Benchmark*
Passive	50.0%	1	Asset Class Target
Active/Passive	25.0%	1	Asset Class Target
Bottom-Up Regional			
- Europe	12.5%	1	Europe Only
- Pacific Basin	12.5%	1	Pacific Basin Only

* Should reflect any investment restrictions applicable to the strategy

FOOTNOTES

1. Callan Associates, "Investing in International Equities: Issues to Consider," October 1989.

2. Robert E. Angelica, AT&T, "International Investing Practices of Large Corporate Pension Funds," Investing Worldwide, Association for Investment Management and Research (AIMR) 1990.

3. Frank Russell Company states that mean-variance asset allocation models recommend up to 75% non-U.S. equities. Wilshire Associates states that efficient frontier studies demonstrate that up to a 60% allocation to international stocks can reduce risk and enhance returns.

4. Amended and Restated Resolution of the Minnesota State Board of Investment Concerning South Africa, March 1, 1989.

5. Direct investment is defined by IRRC as 10% or more equity in an active South Africa company or employees in South Africa.

6. One (1) basis point equals 1/100 of 1%.

7. Anthony W. Robinson, First Chicago Investment Advisers, "Comparison of Fundamental Issues in International and Domestic Equity Investing," International Investing for U.S. Pension Funds, Institute for Fiduciary Education (IFE), May 1989.

8. Rosaland M. Hewsenian, Wilshire Associates, "Summary of International Investing - What are the Issues?," International Investing for U.S. Pension Funds, IFE, May 1989.

9. Christopher A. Nawakowski, InterSec Research Corp., "A Review of Trends in Global Investing," Initiating and Managing a Global Investment Program, AIMR, November 1990.

10. See Andre F. Pernold and Evan C. Shulman, "The Free Lunch in Currency Hedging: Implications for Investment Policy and Performance Standards," Financial Analysts Journal, May-June 1988 and Fisher Black, "Universal Hedging: Optimizing Currency Risks and Reward in International Equity Portfolios," Financial Analysts Journal, July-August 1989.

11. Less than 1% of the international equity portfolios in the InterSec Research Corp universe of U.S. tax exempt investors used either partially or fully hedged benchmarks as of September 1990. This indicates a similarly low percentage of portfolios use systematic hedging.

12. Investment Management Group, Bankers Trust Company, "Comparison of International Indices," September 1988. This publication is the source for most of the data and analysis presented in this section.

13. David Umstead, Boston International Advisors, Inc., "The Portfolio Management Process," Initiating and Managing a Global Investment Program, AIMR 1990.

APPENDIX A

Statewide Public Pension Funds Invested Internationally

California Public Employees Retirement System
California Teachers Retirement System
Public Employees Retirement Association of Colorado
Connecticut Trust Funds
Delaware State Pension Funds
Public Employee Retirement System of Idaho
State Universities Retirement System of Illinois
Teachers Retirement System of the State of Illinois
Illinois State Board of Investment
Florida Retirement System Trust Fund
Iowa Public Employees Retirement System
Commonwealth of Massachusetts Pension Reserves Investment Trust
Public Employees Retirement System of Mississippi
Montana Board of Investments
Public Employees Retirement System of Nevada
New Jersey Division of Investment
New York State Common Retirement Fund
North Dakota State Investment Board
School Employees Retirement System of Ohio
Oregon Investment Council
Pennsylvania State Employees Retirement System
South Dakota Investment Council
Tennessee Consolidated Retirement System
Teacher Retirement System of Texas
Utah State Retirement Board
Washington State Investment Board
Wisconsin Investment Board

Source: Informal survey conducted by SBI staff in October 1991.

Number of states **with** international investments	24
Number of states **without** international investments	9
Total number of states in survey	33

APPENDIX B

PUBLICLY HELD INTERNATIONAL COMPANIES WITH DIRECT INVESTMENT IN SOUTH AFRICA

NOVEMBER 1990

AUSTRALIA

The Broken Hill Pty. Co. Ltd.

Everald Compton International Pty. Ltd.

G.C.F. Investments Pty. Ltd.
Goodman Fielder Wattie Ltd.
G.H. Michell Holdings Pty. Ltd.

The News Corp. Ltd.

Qantas Airways Ltd.

Siddons Ramset Ltd.

TNT Ltd.

AUSTRIA

Ludwig Engel KG

Hoerbiger Ventilwerke AG

Osterreichische Industrieholding AG (OIAG)

Plasser & Theurer Export von Bahnbaumaschinen GmbH

Konrad Rosenbauer KG

BELGIUM

CMB N.V.

Hamon-Sobelco S.A.
Solvay et Cie. Societe Anonyme

UCB S.A.

CANADA

Menora Resources Inc.

Unican Security Systems Ltd.

DENMARK

The East Asiatic Co. Ltd. A/S

Novo Nordisk A/S

Potagua A/S

Sophus Berendsen A/S

FEDERAL REPUBLIC OF GERMANY

Adidas Sportschuhfabriken Adi Dassler Stiftung & Co. KG
AGIV Aktiengesellschaft Furr Industrie und Verkehswesen
Allianz AG
Allweiler AG
Altana Industrie-Aktien und Anlagen AG

J.H. Bachmann GmbH & Co.
BASF AG
Baumwollspinnerei Gronau AG
Bayer AG
Bayerische Hpotheken- und Wechselbank AG (Hypobank)
Bayerische Landesbank Girozentrale
Bayerische Motoren Werke AG
Bayerische Vereinsbank AG
Bekum Maschinenfabrikenen GmbH
Bergische Achsenfabrik Fr. Kotz & Sohne
Bochumer Eisenhutte Heintsmann GmbH & Co. KG
Boehringer Ingelheim Zentrale GmbH
Boehringer Mannheim GmbH
Dr. Th. Bohme KG, Chemische Fabrik GmbH & Co.
Robert Bosch GmbH
Burkert GmbH & Co. KG

Colonia Versicherung AG
Commerzbank AG
Continental AG

Daimler-Benz AG
Degussa AG
Detia Degesch GmbH
Deutsche Afrika Linen
Deutsche Babcock AG
Deutsche Bank AG
Deutsche Bundesbahn
Deutsche Steinindustrie AG
Didier-Werke AG
DLW AG
Dragoco Geberding & Co. GmbH
Dresdner Bank AG
DS-Chemie GmbH & Co. KG

Gebr.Eickhoff Maschinenfabrik und Eisengiesserei mbH
EVT Energie- und Verfahrenstechnik GmbH

A.W. Faber-Castell Unternehmensverwaltung GmbH & Co.
FAG Kugelfischer Georg Schafer KGaA
Falke-Gruppe
C. & E. Fein Gmbh & Co.
Freudenberg & Co.
Fuchs, Petrolub AG Oel + Chemie

GEA Luftkuhlergesellschaft Happel GmbH & Co.
Gedore Werkzeugfabrik Otto Dowidat
Gewerkschaft Eisenhutte Westfalia GmbH
Gildemeister AG
Th. Goldschmidt AG

Haftpflichtvergband der Deutschen Industrie Versicherungsverein AG
E. Heitkamp Baugesellschaft mbH & Co. KG
Helm AG
Hermann Hemscheidt Maschinenfabrik GmbH & Co.
Henkel KGaA
Richard Hirschmann Radiotechnisches Werk
Hoechst AG
Hoesch AG
Philipp Holzmann AG
Huttenes- Albertus Chemische Werke GmbH

Industrieaufbaugesellschaft Schaeffler KG
Industrie- Werke Karlsruhe Augsburg AG

Jackstadt GmbH

Max Kettner Verpackungsmaschinenfabrik GmbH & Co. KG
Kienbaum Verwaltungsgesellschaft mbH
Klockner-Becorit GmbH
Klockner-Moeller Gruppe
Klockner-Werke AG
KM-Kabelmetal AG
Knorr-Bremse KG
Korber AG
Kunz Holding GmbH & Co. KG

Lapple GmbH, Verwaltungs- und Beteiligungsgesellschaft
Ledermann GmbH & Co.
(Deutsche) Lufthansa AG

Madaus AG
MAN AG
Mannesmann AG
F.X. Meiller Fahrzeug- und Maschinenfabrik GmbH & Co. KG
E. Merck Beteiligungen oHG
Metallgesellschaft AG
Miele & Cie. GmbH & Co.
Motorenfabrik Hatz GmbH & Co. KG
Munchener Ruckversicherungs-gesellschaft

Neckar Drahtwerke GmbH
Nixdorf Computer AG
Norddeutsche Affinerie AG

Optyl Holding GmbH & Co.

Pennekamp & Huesker KG
G.M. Pfaff AG
Preussag AG

Rheiner Maschinenfabrik Windhoff AG
Rohde & Liesenfeld GmbH & Co.
Rohm GmbH
August Ruggeberg KG

Johannes Schafer Vorm Stettiner Schraubenwerke GmbH & Co. KG
Schering AG
L. Schuler GmbH
Gebr. Sedlmayr GmbH & Co.
Semikron International
Siemens AG
Staff GmbH & Co.
Sud-Chemie AG

Tente Rollen GmbH & Co.
Thyssen AG Vorm August Thyssen-Hutte
Treuarbeit AG Wirtschaftsprufungsgesellschaft
Steuerberatungsgesellschaft
Gebruder Trox GmbH

Uhlmann & Co. KG
UTP Schweiss-Material GmbH & Co.

Veba AG
Volkswagen AG

Wacker-Chemie GmbH
WAP Reinigungssysteme GmbH & Co.
Max Weishaupt GmbH
Wella AG
Westfalia Separator AG
Ernst Winter & Sohn GmbH & Co.
Adolf Wurth GmbH & Co. KG

Carl-Zeiss-Stiftung
Zeppelin-Stiftung
Zimmermann & Jansen GmbH

FRANCE

Air France Cie. (Nationale)
L'Air Liquide S.A.
Assurances Generales de France

Banque Francaise du Commerce Exterieur

Chargeurs S.A.
Compagnie Financiere de Suez
Compagnie de Fives-Lille S.A.
Compagnie Generale d'Electricite (CGE)

Dollfus-Mieg & Cie. S.A.
Louis Dreyfus et Cie. S.A.
Faiveley Enterprises S.A.

Lafarge-Coppee S.A.
L'Oreal S.A.

Pechiney
Prouvost S.A.
Rhone-Poulenc S.A.
Societe Nationale des Chemins de fer Francais (SNCF)
Societe Parisienne d'Entreprises et de Participations S.A. (SPEP)

Total Compagnie Francaise des Petroles
Tractel S.A.

GREECE

National Bank of Greece

ISRAEL

Bank Leumi Le-Israel

El Al Israel Airlines Ltd.

ITALY

Assicurazioni Generali S.p.A.

Coe & Clerici S.p.A.

Ente Nazionale Idrocarburi (E.N.I.)

Fiat S.p.A.

Istituto Per La Ricostruzione Industriale (I.R.I.)

Montedison S.p.A.

JAPAN

Amada Co. Ltd.

Brother Industries Ltd./Brother Kogyo

Chori Co. Ltd.

C. Itoh & Co. Ltd./Itochu Shoji

Japan Air Lines Co. Ltd./Nippon Koku

Kanematsu-Gosho Ltd.
Kinsho-Mataichi Corp.
Komatsu Ltd./Komatsu Seisakusho

Marubeni Corp.
Mayekawa Industries Co. Ltd.
Meiwa Trading Co. Ltd./Meiwa Sangyo
Mitsubishi Corp./Mitsubishi Shoji
Mitsui & Co. Ltd./Mitsui Bussan
Moritani & Co. Ltd.

NGK Spark Plug Co. Ltd./Nippon Tokushu Togyo
Nichimen Corp.
Nippon Seiko K.K.
Nippon Suisan Kaisha Ltd.
Nissho Iwai Corp.

Sanyo Electric Co. Ltd./Sanyo Denki
Sumitomo Corp./Sumitomi Shoji

Toyo Menka Kaisha Ltd./Tohmen
Toyota Tsusho Corp.

LUXEMBOURG

Ellipse S.A.

THE NETHERLANDS

DSM N.V.

Hunter Douglas N.V.

Internatio-Muller N.V.

KLM Royal Dutch Airlines/Koninklijke Luchtvaart Maatschappij N.V.
Koninklijke Distilleerderijen Erven Lucas Bols N.V.
Koninklijke Nedlloyd Groep N.V.

Philips International B.V.

Royal Dutch Petroleum Co.
Royal Packaging Industries Van Leer B.V.
(Koninklijke Emballage Industries Van Leer B.V.)

NETHERLANDS ANTILLES

Velcro Industries N.V.

NORWAY

Unitor Ships Service A/S

PORTUGAL

Air Portugal (TAP)

Banco Nacional Ultramarino

SPAIN

Pescanova S.A.

SWEDEN

Asea AB
Atlas Copco AB

Incentive AB

Sandvik AB
SKF AB

SWITZERLAND
Adia S.A.
Applied Research Laboratories S.A.

BBC Brown Boveri Ltd.
Birkhart Transport AG
Gebruder Buhler AG

Ciba-Geigy AG
CS Holding

Danzas AG

Endress + Hauser Consult AG

Hermes Precisa International S.A.
Hesta AG
Holderbank Financiere Glaris Ltd.

Kuhne & Nagel International AG

MAAG-Zahnrader und Maschinen AG

Nestle S.A.

Oerlikon-Buhrle Holding Ltd.

Roche Holding Ltd.

Sandoz Ltd.
Schindler Holding Ltd.
Schweizerische Aluminimum Ltd./Alusuisse
Schweizerische Bankgesellschaft/Union Bank of Switzerland
Schweizerische Eternit Holding AG
Schweizerischer Bankverein/Swiss Bank Corp.
Schweizerische Ruckversicherungsgesellschaft (Swiss Reinsurance Co.)
Spedag Speditions AG
STAG AG
Gebruder Sulzer AG
Swissair/Schweizerische Luftverkehr AG

Tarego AG
Transco Holding AG

UNITED KINGDOM

Allied Capital Investment P.L.C.
APV P.L.C.
Avdel P.L.C.

Babcock International Group P.L.C.
B.A.T. Industries P.L.C.
The Beckenham Group P.L.C.
BET P.L.C.
Blackwood Hodge P.L.C.
Blue Circle Industries P.L.C.
The BOC Group P.L.C.
The Boots Co. P.L.C.
Bowthorpe Holdings P.L.C.
BPB Industries P.L.C.
British Airways P.L.C.
The British Aviation Insurance Co. Ltd.
British & Commonwealth Holdings P.L.C.
British Petroleum Co. P.L.C.
Brown Shipley Holdings P.L.C.
BTR P.L.C.
The Burmah Oil P.L.C.

Cadbury Schweppes P.L.C.
Century Oils Group P.L.C.
Charter Consolidated P.L.C.
Chloride Group P.L.C.
Horace Clarkson P.L.C.
Clayhithe P.L.C.
Coates Brothers P.L.C.
Coats Viyella P.L.C.
Commercial Union Assurance Co. P.L.C.
Cookson Group P.L.C.
Courtaulds P.L.C.
Courtaulds Textiles P.L.C.
Croda International P.L.C.

Davies & Metcalfe P.L.C.
Davy Corp. P.L.C.
Delta P.L.C.
Desoutter Bros. (Holdings) P.L.C.
Dobson Park Industries P.L.C.
Drummond Group P.L.C.

B. Elliott P.L.C.
E.R.F. (Holdings) P.L.C.
Evode Group P.L.C.

J.H. Fenner (Holdings) P.L.C.
Fine Art Developments P.L.C.
Fisons P.L.C.
Foseco P.L.C.

GEI International P.L.C.
General Accident Fire & Life Assurance Corp. P.L.C.
General Electric Co. P.L.C.
Gestetner Holdings P.L.C.
GKN P.L.C.
Glaxo Holdings P.L.C.
Clopec Holdings Ltd.
Goode Durrant P.L.C.
Grand Metropolitan P.L.C.
Great Universal Stores P.L.C.
Walter Greenbank P.L.C.
Guardian Royal Exchange P.L.C.
Guinness P.L.C.

Haden MacLellan Holdings P.L.C.
Hall Engineering (Holdings) P.L.C.
Hanson P.L.C.
Harrisons & Crosfield P.L.C.
Hawker Siddeley Group P.L.C.
Hickson International P.L.C.
Hi-Tec P.L.C.
Howden Group P.L.C.
Hunting P.L.C.

Imperial Chemicals Industries P.L.C.

Johnson Matthey P.L.C.

Kelp Ltd.

The Laird Group P.L.C.
Laporte P.L.C.
Leica P.L.C.
Thomas Locker (Holdings) P.L.C.
London Finance & Investment Group P.L.C.
London International Group P.L.C.
Lonrho P.L.C.
Lopex P.L.C.
Low and Bonar P.L.C.
Lucas Industries P.L.C.

Marley P.L.C.
Maxwell Communication Corp. P.L.C.
McKechnie P.L.C.
The Morgan Crucible Co. P.L.C.

James Neill Holdings P.L.C.
Norcros P.L.C.
Norton Opax P.L.C.

The Ocean Group Ltd.

Paringa Mining & Exploration Co. P.L.C.
Pearson P.L.C.
The Peninsular and Oriental Steam Navigation Co.
Pilkington P.L.C.
Pirelli U.K. P.L.C.
The Plessey Co. P.L.C.
Powell Duffryn P.L.C.
Prudential Corp. P.L.C.
PWS Holdings P.L.C.

Racal Electronics P.L.C.
Reckitt & Colman P.L.C.
Record Holdings P.L.C.
Reed International P.L.C.
Renold P.L.C.
Rolls Royce P.L.C.
Royal Insurance Holdings P.L.C.
The RTZ Corp. P.L.C.

Scapa Group P.L.C.
Senior Engineering Group P.L.C.
Siebe P.L.C.
The 600 Group P.L.C.
SmithKline Beecham P.L.C.
Smith & Nephew P.L.C.
STC P.L.C.
Sun Alliance & London Insurance P.L.C.
Suter P.L.C.

Tate & Lyle P.L.C.
Telfos Holdings P.L.C.
Thames Water P.L.C.
Thermal International Holdings P.L.C.
Thorn EMI P.L.C.
TI Group P.L.C.
T&N P.L.C.
Tomkins P.L.C.
Tootal Group P.L.C.
Trafalgar House P.L.C.

Unilever P.L.C.
United Industries P.L.C.

Vickers P.L.C.

Wassall P.L.C.
The Weir Group P.L.C.
Wellcome P.L.C.
Wellman P.L.C.
Wiggins Teape Appleton P.L.C.
Willis Faber P.L.C.
George Wimpey P.L.C.
Wolseley P.L.C.
WPP Group P.L.C.

Yule Catto & Co. P.L.C.

Source: "International Business in South Africa 1990," Investor Responsibility Research Center, Inc., Washington, D.C.

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Tab G

COMMITTEE REPORT

DATE: December 11, 1991

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

FROM: Stock and Bond Manager Committee

The Stock and Bond Manager Committee met on November 26, 1991 to consider the following items:

- o Review of manager performance.
- o Proposed review of manager allocation guidelines.
- o Results of 1991-94 GIC bid.

None of the items requires action by the SBI at this time.

INFORMATION ITEMS

1) Review of Manager Performance

Stock Managers

For the quarter ending September 30, 1991, the Basic Funds' domestic equity program outperformed its aggregate benchmark and the Wilshire 5000 (Equity Program 6.7% vs. Aggregate Benchmark 5.9% vs. Wilshire 5000 6.4%). For the latest five year period, the current equity managers in the Basic Funds have outperformed their aggregate benchmark but underperformed the Wilshire 5000.

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

Staff reported that an in-depth review of Rosenberg Institutional will be conducted during the next quarter. The review will include a presentation by Rosenberg to the Committee due to concerns about their performance relative to the benchmark.

Bond Managers

Manager performance during the quarter was favorable. All of the active managers and one of the semi-passive managers exceeded their benchmarks. Overall, the Basic Funds bond

program exceeded the aggregate benchmark and the broad market for the quarter by 30 basis points. (Bond Program 6.0%, Aggregate Benchmark 5.7%, Salomon BIG 5.7%). In general, the active managers had a longer duration than the market over a period when interest rates fell, which was the primary contributing factor to above market returns during the quarter. The current manager group also exceeded their aggregate benchmark and the market for the past year and the last five years.

Staff reported that an in-depth review of Fidelity Management Trust will be conducted next quarter as part of the regular 3-year review cycle.

2) Proposed Review of Manager Allocations

The Committee discussed the need to develop guidelines which address the allocation among the managers in both the stock and bond programs. The Committee asked staff to draft a proposal for the Committee's next meeting.

3) Results of 1991-94 GIC Bid

The SBI bid its sixth 3-year guaranteed investment contract (GIC) for the Supplemental Investment Fund on October 29, 1991. Overall, staff was pleased with the bid results.

Two companies, Continental Assurance and Provident National, will provide a blended rate of 6.6343%, net of expenses, which was 57 basis points over 3 year Treasuries on the bid date. The GIC will include a lump sum $29.1 million and estimated cash flow of $4.2 million over the next year.

Continental Assurance is a $10.0 billion company. It is rated AA+ by Standard and Poor's, AAA by Duff & Phelps, and Aa1 by Moody's.

Provident National is a $7 billion company. It is rated AA+ by Standard and Poor's, AA+ by Duff & Phelps, and Aa2 by Moody's.

The Committee asked staff to prepare a review of all the SBI's current GIC's for the next meeting.

EQUITY MANAGERS

Third Quarter 1991

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

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

Staff Recommendations:
Staff recommends the following actions concerning manager status:

- Conduct an in-depth review of Rosenberg Asset Management.

Current Managers	Total Market Value 9/30/91 (Thousands)	Quarter Ending 9/30/91 Actual	Bmrk	Year Ending 9/30/91 Actual	Bmrk	Annualized Five Years Ending 9/30/91 Actual	Bmrk	Percent of Stock Segment 9/30/91 Basic Funds
Alliance	$ 506,440	10.0%	5.9%	35.4%	35.9%	18.3%	11.7%	9.9%
Forstmann	250,159	11.1	5.1	34.0	31.0	12.6	11.2	4.9
Franklin	154,997	5.7	6.1	35.2	37.8			3.0
GeoCapital	168,525	17.9	10.3	85.7	49.6			3.3
IDS	204,550	5.6	5.3	30.4	28.3	12.3	12.4	4.0
IAI	103,870	4.2	5.4	22.4	28.4	11.5	13.3	2.0
Lieber & Co.	161,145	6.1	7.1	42.3	42.6	9.0	9.2	3.1
Rosenberg	323,327	5.6	6.1	28.8	33.7			6.3
Waddell & Reed	199,485	6.6	5.4	24.2	33.8	11.4	11.5	3.9
Wilshire Assoc.*	3,065,910	5.7	5.8	32.6	33.2	13.0	13.3	59.6
Aggregate **		6.7	5.9	33.2	34.0	13.1	12.8	100.0
Wilshire 5000		6.4%		34.2%		13.4%		

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

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

ALLIANCE CAPITAL MANAGEMENT

PORTFOLIO MANAGER: Jack Koltes **ASSETS UNDER MANAGEMENT: $506,439,795**

INVESTMENT PHILOSOPHY

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

QUALITATIVE EVALUATION
(Reported By Exception)

Exceptional strengths are:

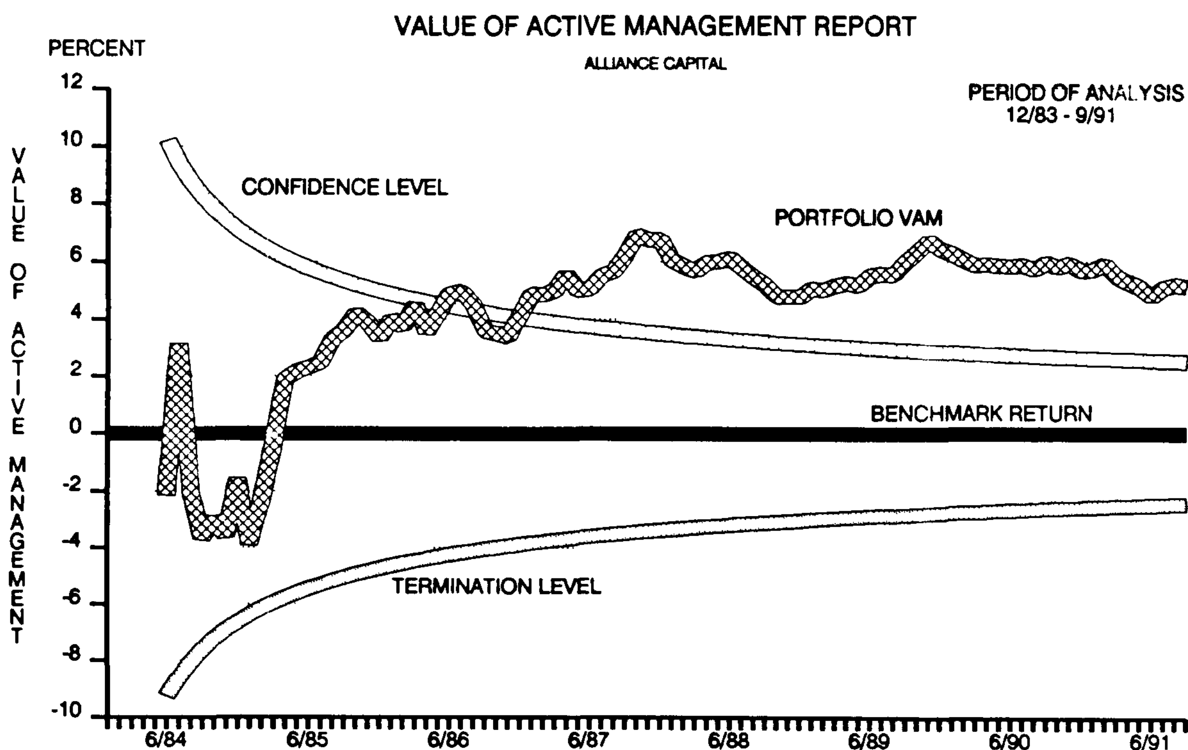
- Highly successful and experienced professionals.
- Organizational continuity and strong leadership.
- Well-acquainted with needs of large clients.
- Investment style consistently and successfully applied over a variety of market environments.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	10.0%	35.4%	18.3%	18.1%
Benchmark	5.9	35.9	11.7	12.4

STAFF RECOMMENDATIONS

No action required.



FORSTMANN LEFF ASSOCIATES

PORTFOLIO MANAGER: Joel Leff **ASSETS UNDER MANAGEMENT: $250,159,160**

INVESTMENT PHILOSOPHY

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

QUALITATIVE EVALUATION
(Reported By Exception)

Current concerns are:

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

Exceptional strengths are:

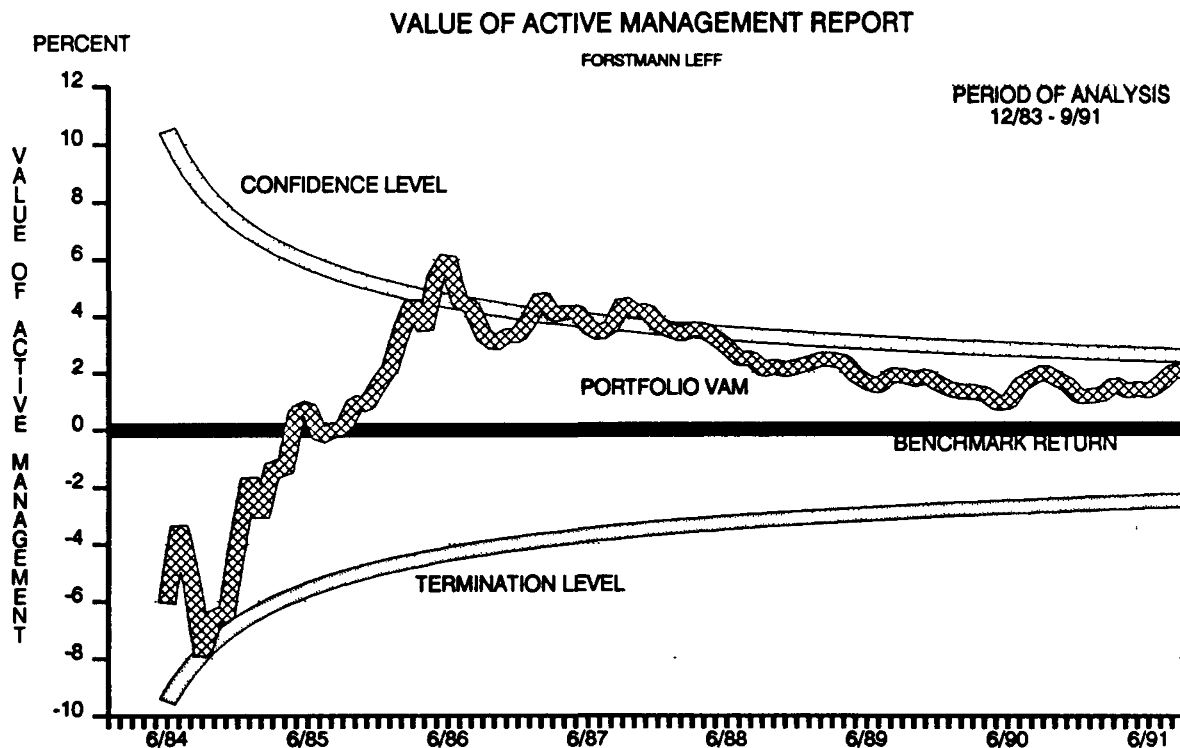
- Highly successful and experienced professionals.
- Investment style consistently and successfully applied over a variety of market environments.
- Well-acquainted with needs of large clients.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	11.1%	34.0%	12.6%	14.2%
Benchmark	5.1	31.0	11.2	11.9

STAFF RECOMMENDATIONS

No action required.



FRANKLIN PORTFOLIO ASSOCIATES

PORTFOLIO MANAGER: John Nagorniak | **ASSETS UNDER MANAGEMENT: $154,997,251**

INVESTMENT PHILOSOPHY

Franklin's investment decisions are quantitatively driven and controlled. The firm's stock selection model uses 30 valuation measures covering the following factors: fundamental momentum, relative value, future cash flow, and economic cycle analysis. The firm believes that a multi-dimensional approach to stock selection provides greater consistency than reliance on a limited number of valuation criteria. Franklin's portfolio management process focuses on buying and selling the right stock rather than attempting to time the market or pick the right sector or industry groups. The firm remains fully invested at all times.

QUALITATIVE EVALUATION
(Reported by Exception)

Exceptional strengths are:

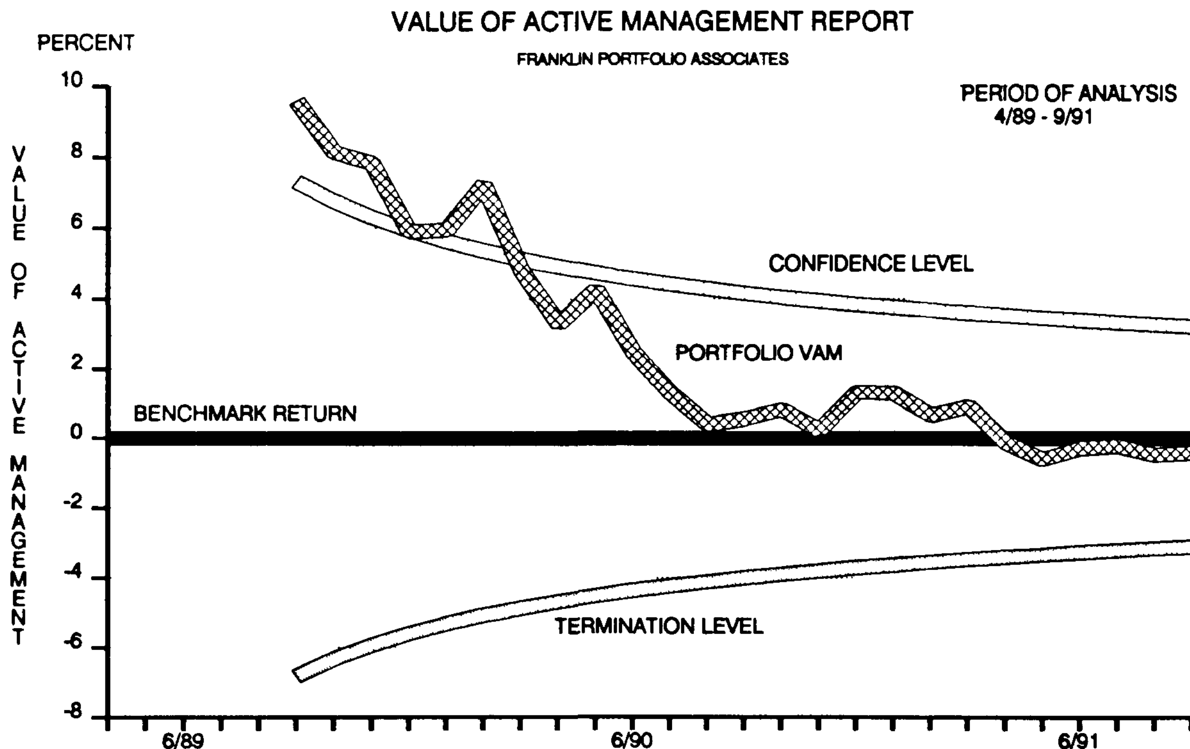
- Familiar with the needs of large institutional clients.
- Firm's investment approach has been consistently applied over a number of market cycles.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 4/1/89
Actual Return	5.7%	35.2%	N.A.	10.9%
Benchmark	6.1	37.8	N.A.	11.3

STAFF RECOMMENDATIONS

No action required.



GEOCAPITAL CORP.

PORTFOLIO MANAGER: Barry Fingerhut **ASSETS UNDER MANAGEMENT: $168,525,349**

INVESTMENT PHILOSOPHY

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

QUALITATIVE EVALUATION (Reported by Exception)

Exceptional strengths are:

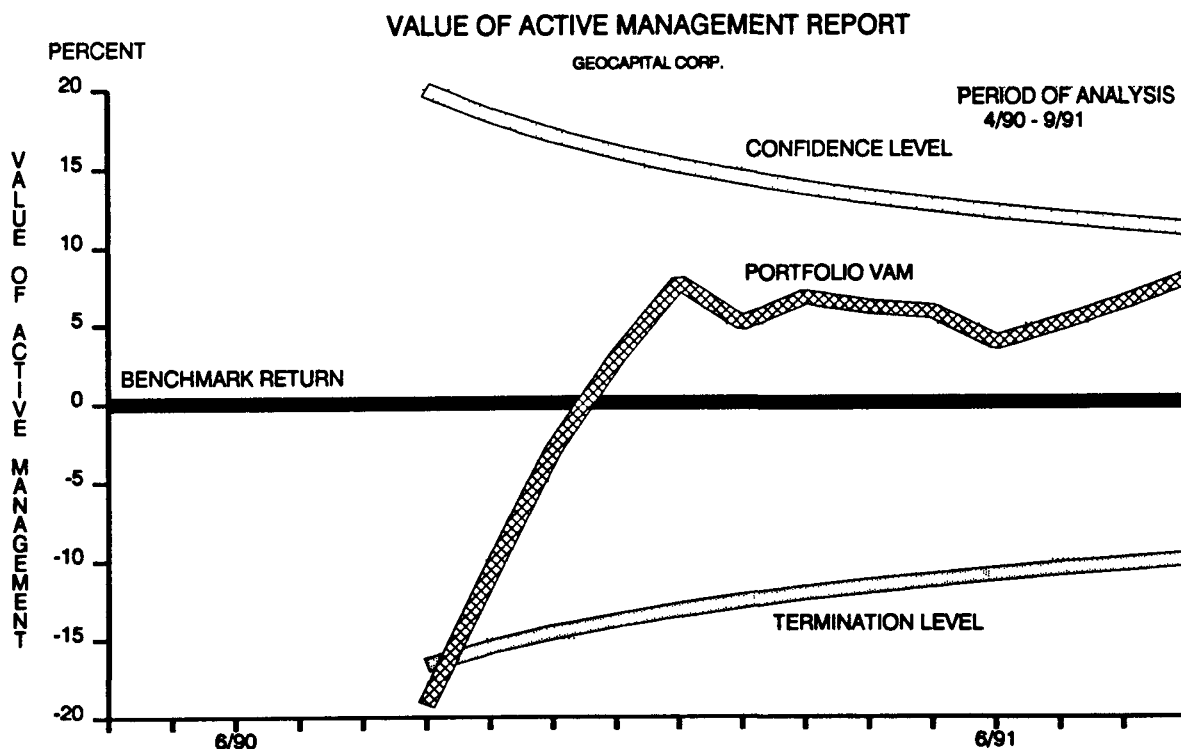
- Investment style consistently and successfully applied over a variety of market environments.
- Attractive, unique investment approach.
- Highly successful and experienced professionals.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 4/1/90
Actual Return	17.9%	85.7%	N.A.	23.7%
Benchmark	10.3	49.6	N.A.	14.7

STAFF RECOMMENDATIONS

No action required.



IDS ADVISORY

PORTFOLIO MANAGER: Mitzi Malevich **ASSETS UNDER MANAGEMENT: $204,550,030**

INVESTMENT PHILOSOPHY

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

QUALITATIVE EVALUATION (Reported By Exception)

Current concerns are:

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

Exceptional strengths are:

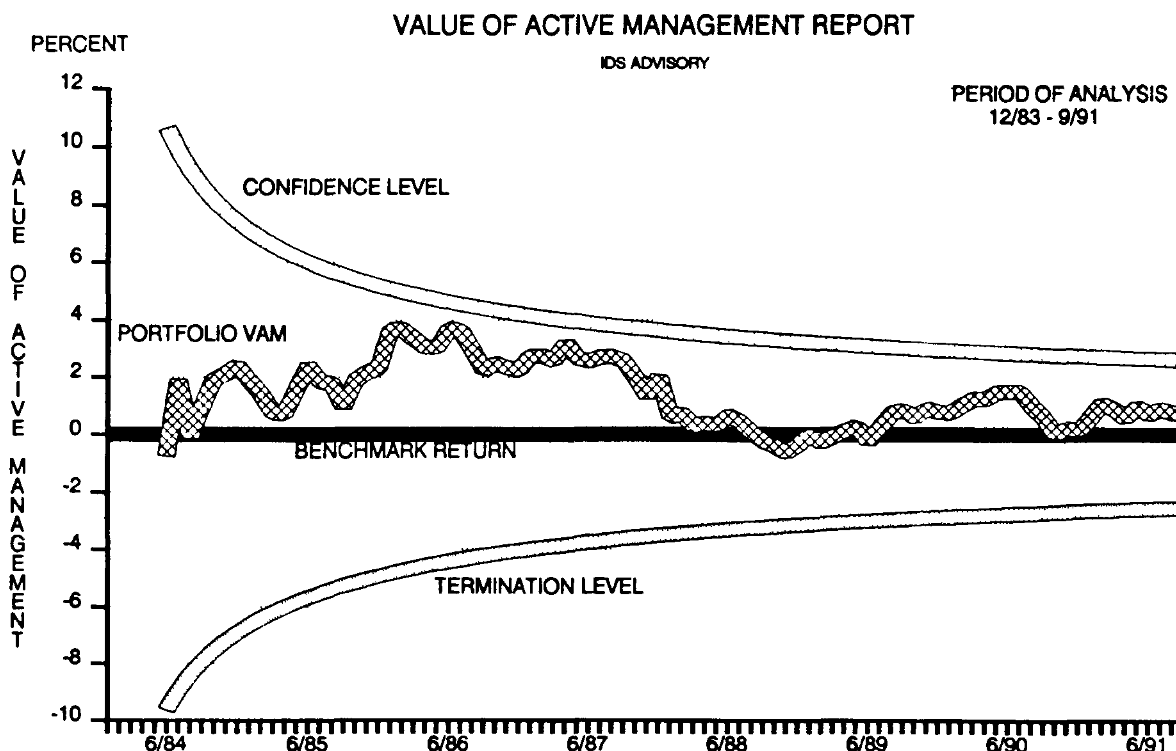
- Investment style consistently and successfully applied over a variety of market environments.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	5.6%	30.4%	12.3%	14.6%
Benchmark	5.3	28.3	12.4	13.8

STAFF RECOMMENDATIONS

Currently being reviewed by the Equity Selection Committee.



INVESTMENT ADVISERS

PORTFOLIO MANAGER: Charles Webster **ASSETS UNDER MANAGEMENT: $103,870,083**

INVESTMENT PHILOSOPHY

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

QUALITATIVE EVALUATION
(Reported By Exception)

Current concerns are:

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

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

Exceptional strengths are:

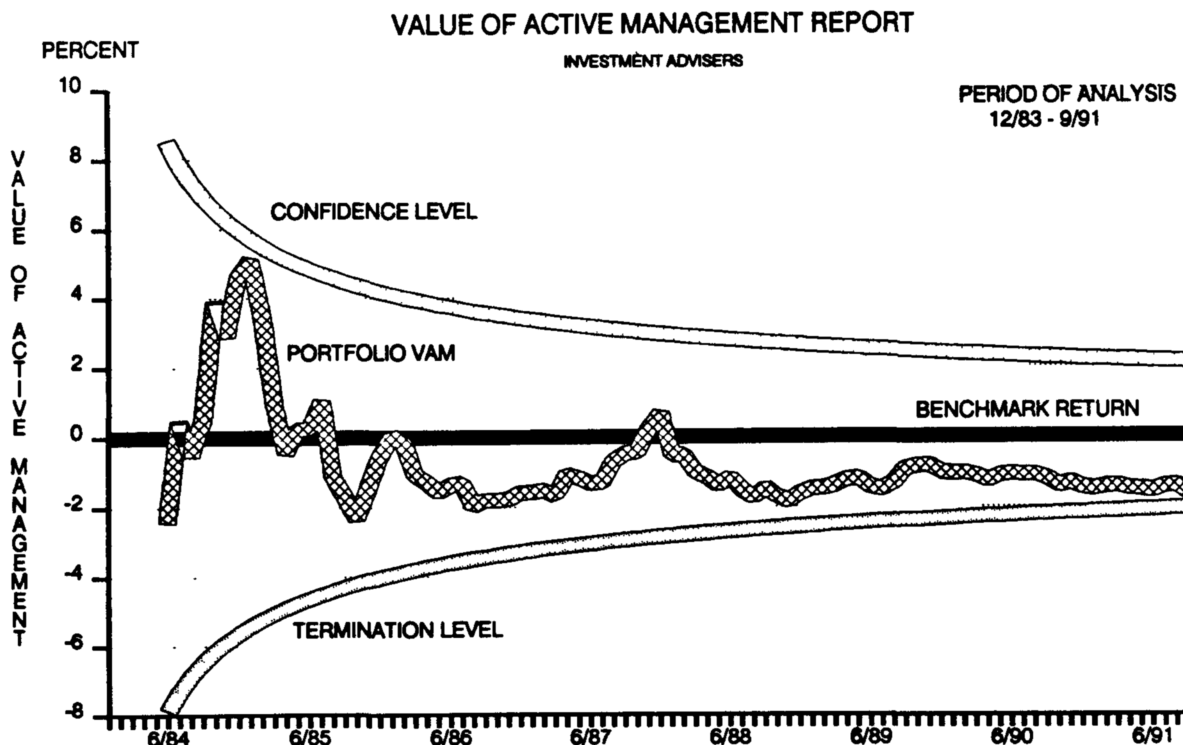
- Investment style consistently applied over a variety of market environments.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	4.2%	22.4%	11.5%	12.5%
Benchmark	5.4	28.4	13.3	14.3

STAFF RECOMMENDATIONS

Currently being reviewed by the Equity Selection Committee.



LIEBER & COMPANY

PORTFOLIO MANAGER: Stephen Lieber, Nola Falcone **ASSETS UNDER MANAGEMENT: $161,144,707**

INVESTMENT PHILOSOPHY

Lieber and Co. seeks to identify investment concepts that are either currently profitable, or likely to become so in the near future, yet whose prospects are not reflected in the stock prices of the companies associated with the concepts. The firm focuses on macroeconomic trends and specific product developments within particular industries or companies. Stock selection concentrates on well-managed, small-to-medium sized companies with high growth and high return on equity. Particularly attractive to Lieber are takeover candidates or successful turn around situations. The firm generally is fully invested, with any cash positions the result of a lack of attractive investment concepts.

QUALITATIVE EVALUATION
(Reported by Exception)

Current concerns are:

- Firm is unfamiliar with needs of large clients.

This item, while not serious, warrants additional monitoring.

Exceptional strengths are:

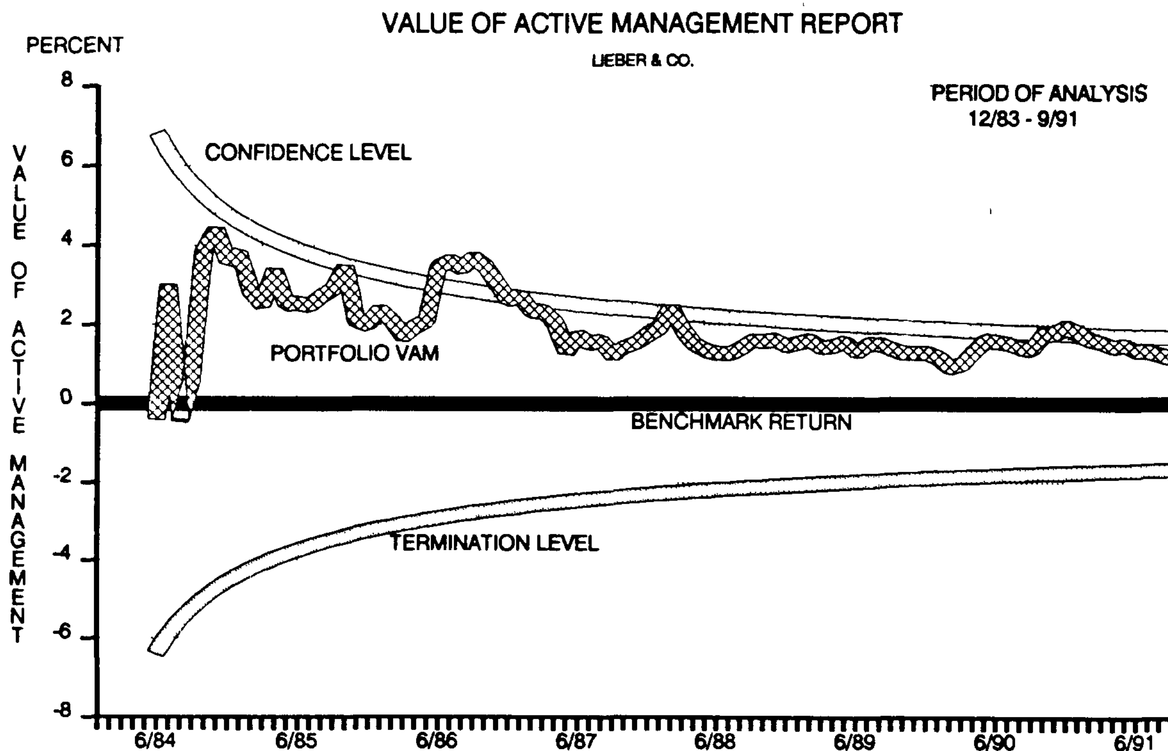
- Organizational continuity and strong leadership.
- Attractive, unique investment approach.
- Investment style consistently and successfully applied over a variety of market environments.
- Extensive securities research process.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	6.1%	42.3%	9.0%	11.7%
Benchmark	7.1	42.6	9.2	10.4

STAFF RECOMMENDATIONS

No action required.



ROSENBERG INSTITUTIONAL EQUITY MANAGEMENT

PORTFOLIO MANAGER: Ken Reid **ASSETS UNDER MANAGEMENT: $323,326,816**

INVESTMENT PHILOSOPHY

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

QUALITATIVE EVALUATION (Reported by Exception)

Exceptional strengths are:

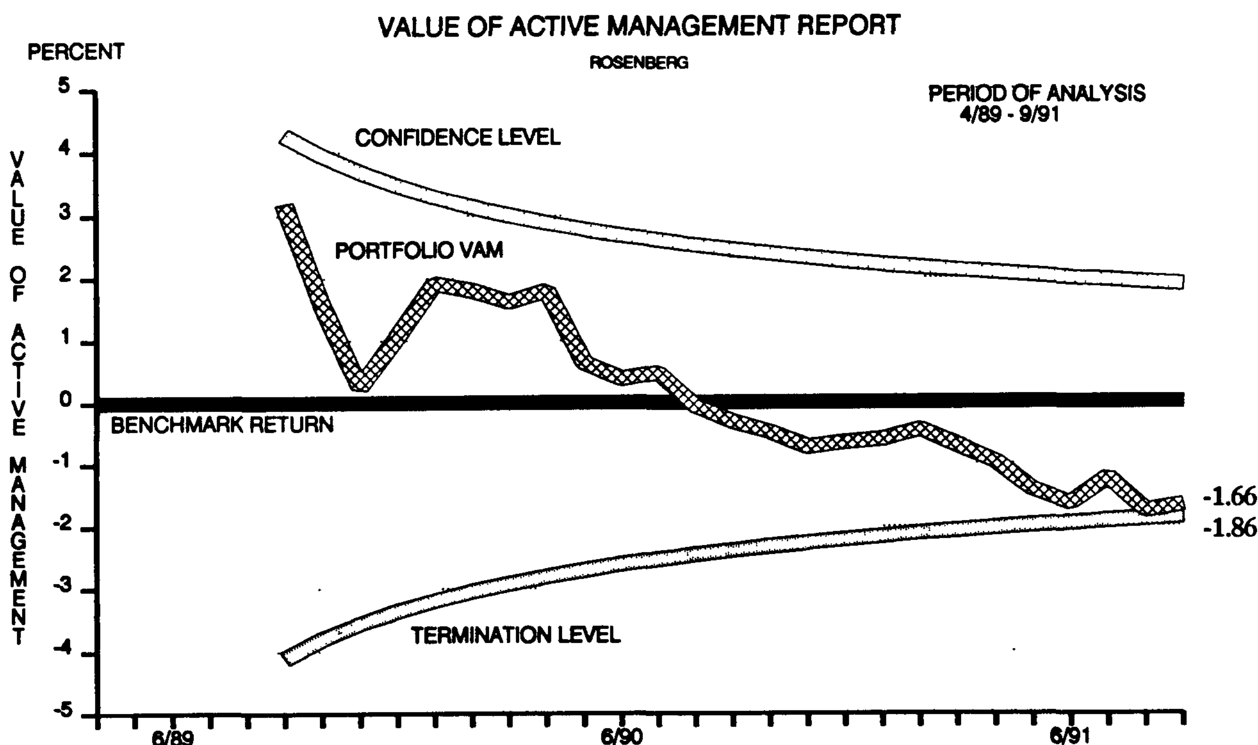
- Attractive, unique investment approach.
- Highly successful and strong leadership.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 4/1/89
Actual Return	5.6%	28.8%	N.A.	10.9%
Benchmark	6.1	33.7	N.A.	12.7

STAFF RECOMMENDATIONS

The in-depth review of Rosenberg was postponed due to the equity manager search. A review will be prepared for the next quarterly meeting.



WADDELL & REED

PORTFOLIO MANAGER: Henry Herrman **ASSETS UNDER MANAGEMENT: $199,484,525**

INVESTMENT PHILOSOPHY

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

QUALITATIVE EVALUATION
(Reported By Exception)

Exceptional strengths are:

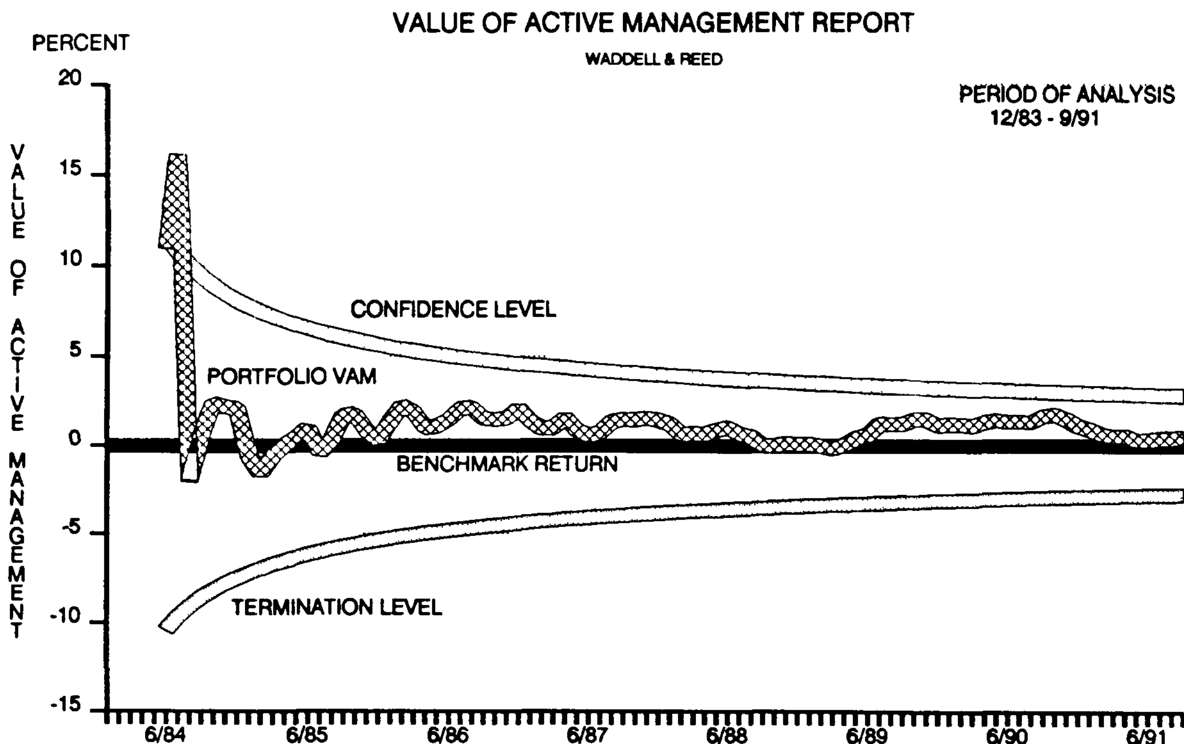
- Highly successful and experienced professionals.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	6.6%	24.2%	11.4%	11.4%
Benchmark	5.4	33.8	11.5	10.9

STAFF RECOMMENDATIONS

In-depth review was conducted for the December 1989 Board meeting.



POST FUND STOCK SEGMENT

PORTFOLIO MANAGER: SBI Staff **ASSETS UNDER MANAGEMENT: $554,571,189**

INVESTMENT PHILOSOPHY

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

QUALITATIVE EVALUATION
(Reported By Exception)

Current concerns are:

- The fund is using a relatively new benchmark.

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

Exceptional strengths are:

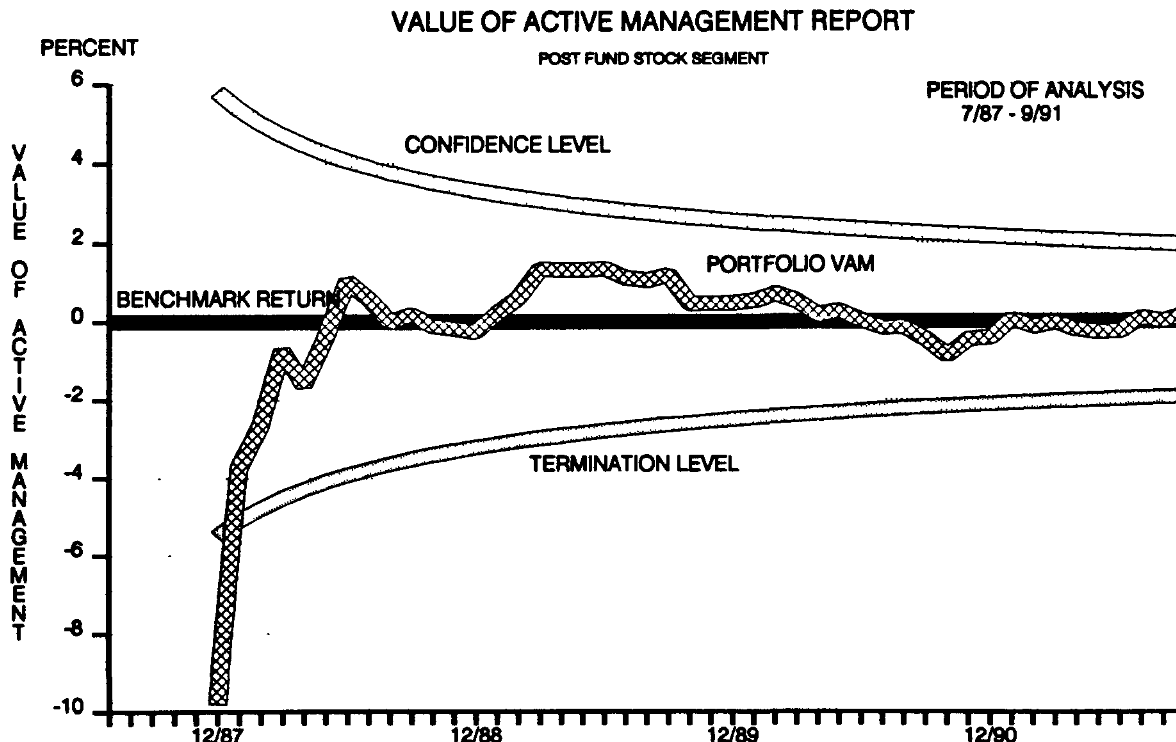
- The investment methodologies used in the portfolio have been applied successfully over various market environments.

STAFF RECOMMENDATIONS

No action required.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 7/1/87
Actual Return	6.9%	41.4%	10.9%	7.8%
Benchmark	6.4	39.5	N.A.	7.8



BOND MANAGERS

Third Quarter 1991

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

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

Staff Recommendations:
Staff recommends the following actions concerning manager status:

- Conduct an in-depth review of Fidelity.

Current Managers	Total Market Value 9/30/91 (Thousands)	Quarter Ending 9/30/91 Actual	Quarter Ending 9/30/91 Bmrk	Year Ending 9/30/91 Actual	Year Ending 9/30/91 Bmrk	Annualized Five Years Ending 9/30/91 Actual	Annualized Five Years Ending 9/30/91 Bmrk	Percent of Bond Segment 9/30/91 Basic Funds
IAI	$ 135,041	7.0%	6.0%	18.7%	16.2%	9.5%	9.5%	6.7%
Lehman Ark	118,121	5.4	5.1	14.8	14.5	9.0	9.1	5.8
Miller Anderson	216,480	7.3	5.7	19.4	16.0	10.9	9.6	10.7
Western Asset	426,689	6.3	5.8	18.1	16.5	10.6	9.8	21.1
Fidelity*	577,719	5.7	5.7	16.9	16.0			28.6
Lincoln*	549,035	5.6	5.7	15.9	16.0			27.1
Aggregate **		6.0	5.7	17.1	16.0	10.2	9.5	100.0
Salomon Broad Investment Grade Index		5.7%		16.0%		9.6%		

* Semi-passive manager
** Historical performance reflects composite of current managers only.

INVESTMENT ADVISERS

PORTFOLIO MANAGER: Larry Hill **ASSETS UNDER MANAGEMENT: $135,041,209**

INVESTMENT PHILOSOPHY

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

QUALITATIVE EVALUATION
(Reported By Exception)

The current evaluation notes the following:

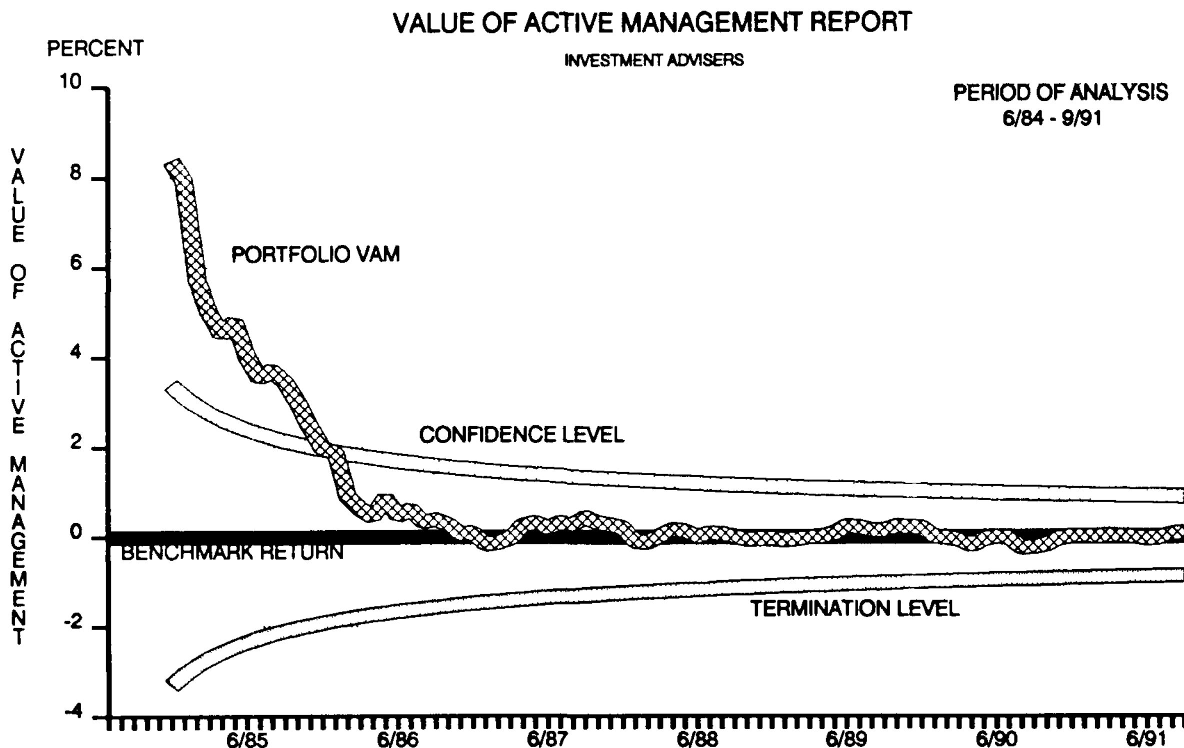
- The manager's duration decisions have not added significant value.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 7/1/84
Actual Return	7.0%	18.7%	9.5%	13.7%
Benchmark	6.0	16.2	9.5	13.6

STAFF RECOMMENDATIONS

No action required.



LEHMAN ARK MANAGEMENT

PORTFOLIO MANAGER: Kevin Hurley **ASSETS UNDER MANAGEMENT: $118,120,729**

INVESTMENT PHILOSOPHY

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

QUALITATIVE EVALUATION
(Reported By Exception)

The current evaluation notes the following:

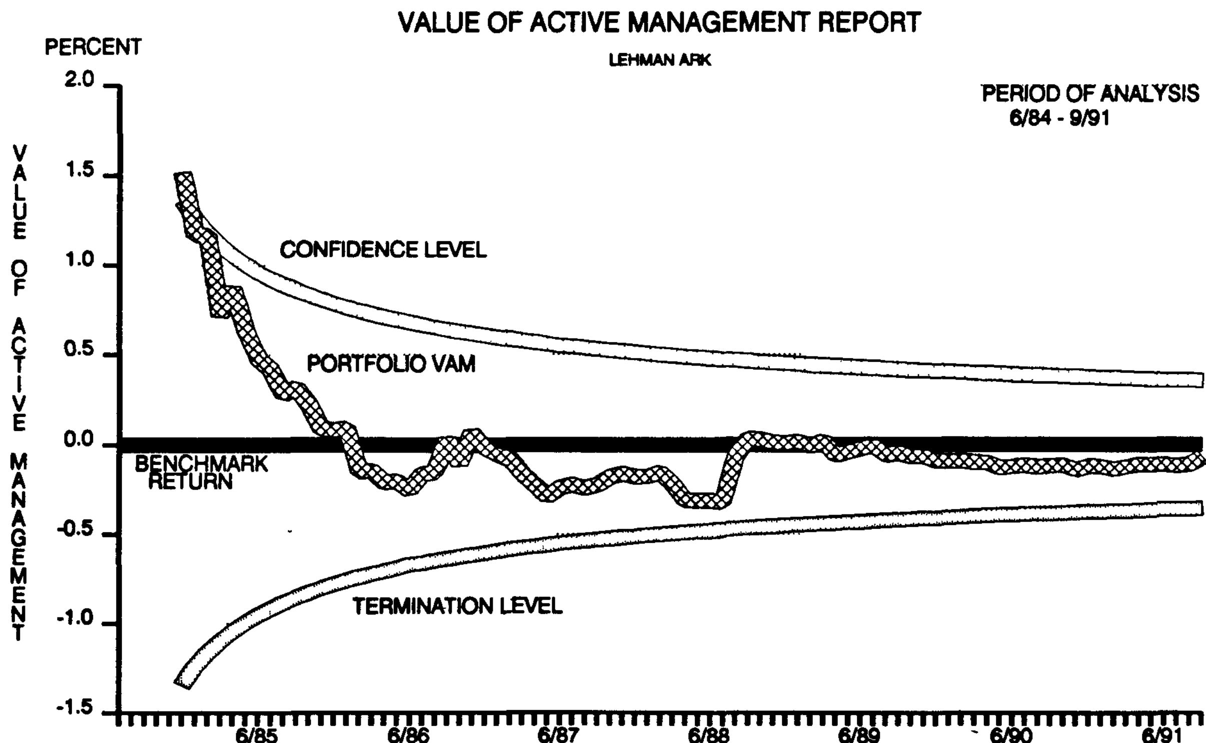
- The firm has used an index-like approach in its management of the portfolio and has made relatively few active bets.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 7/1/84
Actual Return	5.4%	14.8%	9.0%	12.6%
Benchmark	5.1	14.5	9.1	12.6

STAFF RECOMMENDATIONS

Latest five year period is below benchmark. In-depth review was conducted for December 1990 Board meeting.



MILLER ANDERSON

PORTFOLIO MANAGER: Tom Bennet **ASSETS UNDER MANAGEMENT: $216,479,761**

INVESTMENT PHILOSOPHY

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

QUALITATIVE EVALUATION (Reported By Exception)

The firm's strengths continue to be:

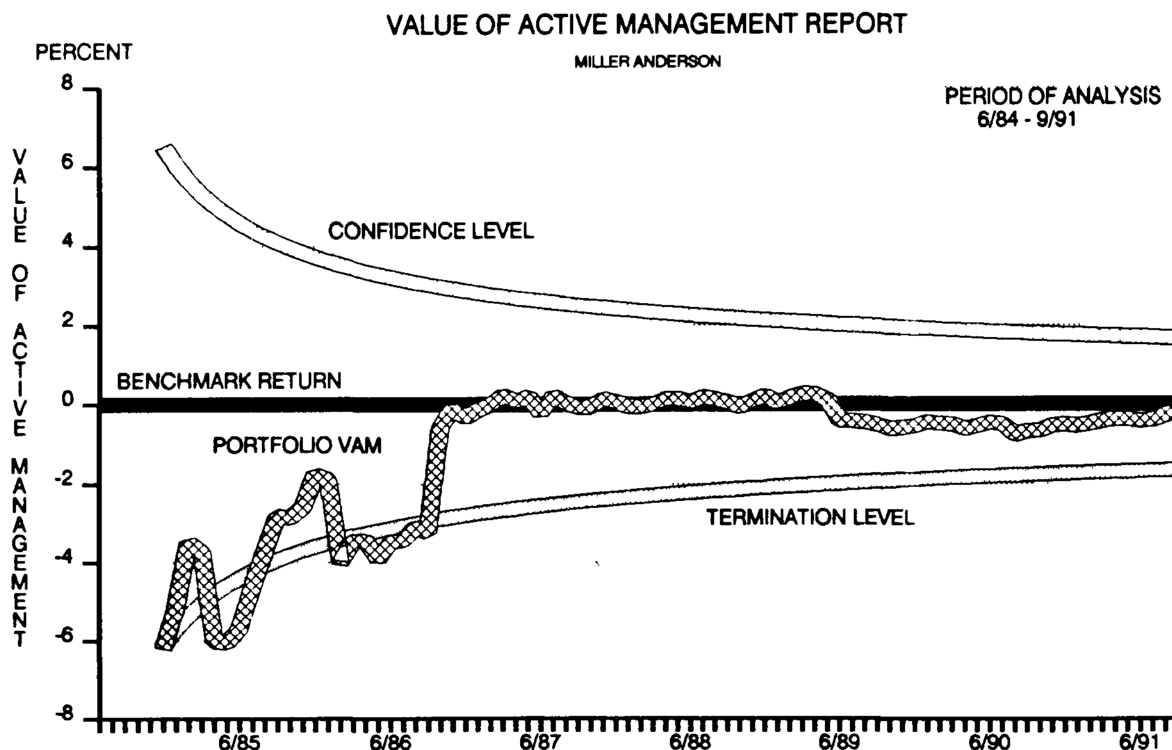
- Highly successful and experienced professionals.
- Extensive securities research process.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 7/1/84
Actual Return	7.3%	19.4%	10.9%	13.4%
Benchmark	5.7	16.0	9.6	13.6

STAFF RECOMMENDATIONS

No action required.



WESTERN ASSET MANAGEMENT

PORTFOLIO MANAGER: Kent Engel **ASSETS UNDER MANAGEMENT: $426,689,333**

INVESTMENT PHILOSOPHY

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

QUALITATIVE EVALUATION
(Reported By Exception)

The firm's exceptional strengths continue to be:

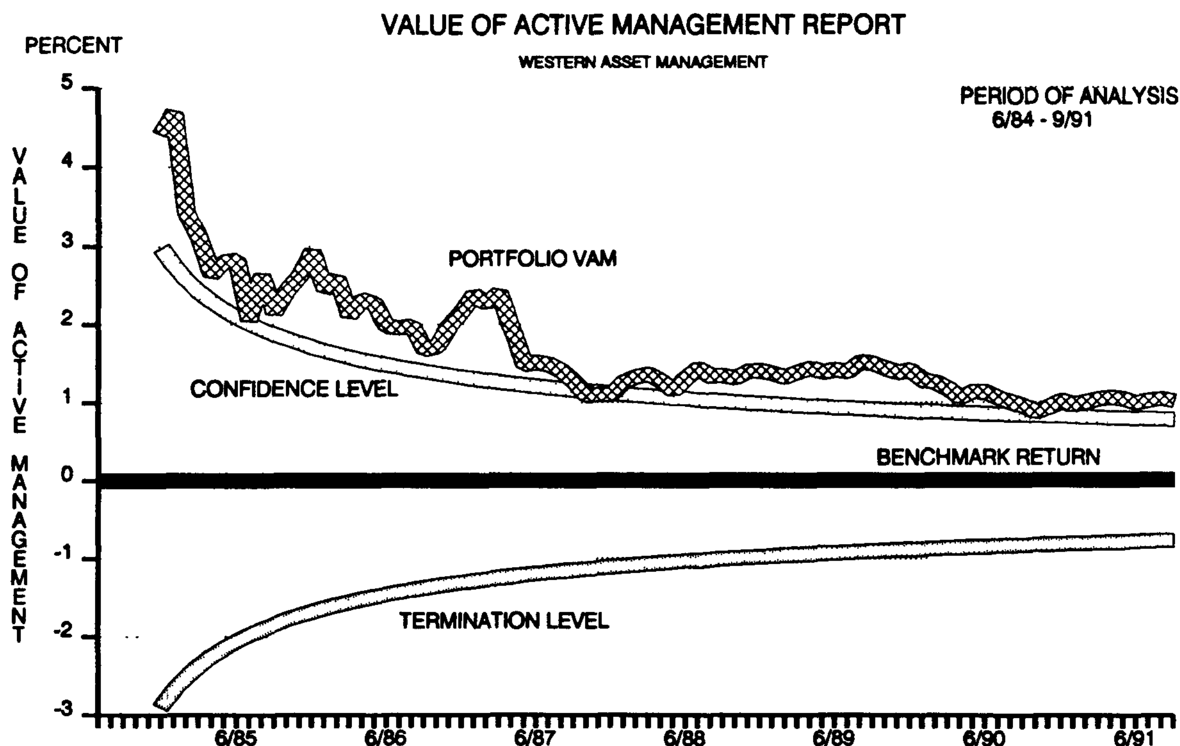
- Highly successful and experienced professionals.
- Extensive research and understanding in the application of normal portfolios to bond management.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 7/1/84
Actual Return	6.3%	18.1%	10.6%	14.6%
Benchmark	5.8	16.5	9.8	13.5

STAFF RECOMMENDATIONS

No action required.



Tab H

COMMITTEE REPORT

DATE: December 11, 1991

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

FROM: Alternative Investment Committee

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

- o Review of current strategy.
- o Results of annual review sessions with existing managers.
- o Status of Irwin Jacobs IMR Fund.
- o Update on KKR.

None of the items require action by the Board at this time.

INFORMATION ITEMS:

1) Review of Current Strategy

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

The real estate investment strategy calls for the establishment and maintenance of a broadly diversified real estate portfolio comprised of investments that provide overall diversification by property type and location. The main component of this portfolio consists of investments in diversified open-end and closed-end commingled funds. The remaining portion of the portfolio can include investments in less diversified, more focused (specialty) commingled funds. Currently, the SBI has committed $430 million to fifteen commingled real estate funds.

The venture capital investment strategy is to establish and maintain a broadly diversified venture capital portfolio

comprised of investments that provide diversification by industry type, stage of corporate development and location. To date, the SBI has committed to twenty commingled venture capital funds for a total commitment of $537 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 $143 million to nine commingled oil and gas funds.

2) Results of Annual Review Sessions with Existing Managers

During July and August the Alternative Investment Committee and staff conducted annual review sessions with three of the SBI's venture capital managers, DSV, Inman/Bowman and Matrix.

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

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

In sum, the Alternative Investment Committee and staff have been satisfied with the performance and operation of these managers to date. Additional investments with these managers will be considered, if appropriate.

3) Status of Irwin Jacobs IMR Fund

At its June 1991 meeting, the SBI authorized an investment of up to $30 million in the Irwin Jacobs IMR Fund, contingent upon the Fund achieving at least $500 million in total investor commitments.

Staff has learned that Mr. Jacobs is exploring the possibility of holding two closings of investors commitments. The first closing, projected for December 1991 or January 1992, would allow the Fund to begin operation and take advantage of attractive deal flow. Investor commitments for the first closing are projected to be approximately $300 million.

The second closing, for investors unable to accommodate the timing of the first closing, would take place within 120 days of the first closing. Indications are that investor commitments for the second closing could bring the Fund within its originally stated size target of between $500 million to $1 billion.

4) <u>Update on KKR</u>

Staff updated the Committee on the status of the SBI's commitment to KKR. As of 9/30/91, the investments in the 1984, 1985 and 1987 funds have been 29.7%, 27.0% and 24.4% respectively, net of fees.

Staff reported that the lawsuit filed against KKR which named the SBI as a nominal defendant had been dismissed on statute of limitations grounds by the New York Federal District Court.

The Committee made no recommendations with respect to the SBI's status as a limited partner in KKR's funds.

ATTACHMENT A

SUMMARY OF ALTERNATIVE INVESTMENTS AS OF 9/30/91

	MARKET VALUE	UNFUNDED COMMITMENT	TOTALS
REAL ESTATE	$410,281,142	$83,198,018	$493,479,160
% OF BASIC FUNDS	5.05%	1.02%	6.08%
VENTURE CAPITAL	$390,109,296	$243,611,962	$633,721,257
% OF BASIC FUNDS	4.80%	3.00%	7.80%
RESOURCE	$98,944,218	$28,767,246	$127,711,464
% OF BASIC FUNDS	1.22%	0.35%	1.57%
TOTALS	$899,334,656	$355,577,226	$1,254,911,881.90
% OF BASIC FUNDS	11.08%	4.38%	15.45%

Market value of Basic Retirement Fund at 9/30/91 = $8,119,921,417.49

See next page for additional detail.

ATTACHMENT A CON'T

ALTERNATIVE EQUITY INVESTMENTS

	INCEPT DATE	COMMITMENT	FUNDED COMMIT.	MKT VALUE OF FUNDED COMMIT.	CASH DISTRIBUTIONS	UNFUNDED COMMIT.	IRR	MEASUREMENT PERIOD
REAL ESTATE:								
AETNA	4/82	$40,000,000	$40,000,000	$60,593,325	$0	$0	5.2%	9.4
EQUITABLE	10/81	$40,000,000	$40,000,000	$75,023,004	$0	$0	7.3%	9.9
HEITMAN I	8/84	$20,000,000	$20,000,000	$20,299,146	$11,513,809	$0	9.3%	7.1
HEITMAN II	11/85	$30,000,000	$30,000,000	$33,100,595	$9,771,289	$0	7.7%	5.9
HEITMAN III	1/87	$20,000,000	$20,000,000	$18,936,407	$4,303,718	$0	4.2%	4.7
HEITMAN V	7/91	$20,000,000	$0	$0	$0	$20,000,000	0.0%	0.2
LASALLE	9/91	$15,000,000	$1,801,982	$1,801,982	$0	$13,198,018	0.0%	0.0
PAINE WEBBER *	2/90	$500,000	$500,000	$394,875	$16,787	$0	-11.1%	1.7
RREEF	5/84	$75,000,000	$75,000,000	$74,911,575	$17,747,136	$0	4.5%	7.4
AEW III	9/85	$20,000,000	$20,000,000	$24,521,236	$0	$0	3.5%	6.1
AEW IV	9/86	$15,000,000	$15,000,000	$5,402,361	$0	$0	-19.2%	5.0
AEW V	12/87	$15,000,000	$15,000,000	$16,544,198	$65,593	$0	3.0%	3.8
TCW III	8/85	$40,000,000	$40,000,000	$43,880,439	$10,888,803	$0	6.1%	6.2
TCW IV	11/86	$30,000,000	$30,000,000	$34,872,000	$2,132,300	$0	5.5%	4.9
ZELL	7/91	$50,000,000	$0	$0	$0	$50,000,000	0.0%	0.2
TOTAL R.E. PORTFOLIO		$430,500,000	$347,301,982	$410,281,142	$56,439,435	$83,198,018		
VENTURE CAPITAL:								
ALLIED	9/85	$5,000,000	$5,000,000	$4,435,670	$1,769,643	$0	5.9%	6.0
DSV	4/85	$10,000,000	$10,000,000	$11,486,160	$0	$0	2.5%	6.5
FIRST CENTURY	12/84	$10,000,000	$8,500,000	$7,505,266	$3,298,209	$1,500,000	8.3%	6.8
BRINSON	5/88	$5,000,000	$4,797,481	$4,121,700	$1,154,101	$202,519	5.4%	3.4
BRINSON II	7/90	$20,000,000	$6,000,000	$6,155,182	$1,464,818	$14,000,000	45.6%	1.2
GOLDER THOMA	10/87	$14,000,000	$8,400,000	$10,338,796	$0	$5,600,000	10.4%	3.9
IAI VENTURES I *	3/91	$500,000	$450,000	$438,359	$0	$50,000	-4.4%	0.6
IAI VENTURES II	7/90	$10,000,000	$2,517,637	$2,726,931	$304	$7,482,363	11.0%	1.2
INMAN/BOWMAN	6/85	$7,500,000	$6,750,000	$4,926,967	$0	$750,000	-8.5%	6.3
KKR I	3/84	$25,000,000	$25,000,000	$31,539,159	$53,390,459	$0	29.7%	7.5
KKR II	12/85	$18,365,339	$18,365,339	$40,811,063	$14,773,992	$0	27.0%	5.8
KKR III	10/87	$146,634,660	$131,656,560	$212,605,710	$19,014,147	$14,978,100	24.4%	4.0
KKR IV	5/91	$150,000,000	$0	$0	$0	$150,000,000	0.0%	0.4
MATRIX	8/85	$10,000,000	$10,000,000	$9,032,992	$7,236,061	$0	12.1%	6.1
MATRIX II	5/90	$10,000,000	$2,125,000	$2,050,950	$1,052	$7,875,000	-3.7%	1.4
NORWEST	1/84	$10,000,000	$10,000,000	$6,429,113	$3,808,066	$0	0.5%	7.7
SUMMIT I	12/84	$10,000,000	$10,000,000	$6,356,645	$9,602,641	$0	11.2%	6.8
SUMMIT II	5/88	$30,000,000	$19,500,000	$17,518,186	$3,987,941	$10,500,000	6.0%	3.4
SUPERIOR	6/86	$6,645,000	$5,149,875	$6,068,721	$0	$1,495,125	5.2%	5.3
T.ROWE PRICE	11/87	$8,441,360	$8,441,360	$4,740,581	$5,395,001	$0	58.3%	3.9
ZELL/CHILMARK	7/90	$30,000,000	$821,145	$821,145	$0	$29,178,855	0.0%	1.2
TOTAL V.C. PORTFOLIO		$537,086,359	$293,474,397	$390,109,296	$124,896,434	$243,611,962		
RESOURCES:								
AMGO I	9/81	$15,000,000	$15,000,000	$5,627,207	$3,362,448	$0	-6.4%	10.0
AMGO II	2/83	$7,000,000	$7,000,000	$7,319,858	$2,225,795	$0	4.8%	8.7
AMGO IV	7/88	$12,300,000	$12,299,800	$15,066,368	$1,508,571	$200	14.0%	3.2
AMGO V	5/90	$16,800,000	$11,532,954	$12,436,619	$208,600	$5,267,046	7.8%	1.4
APACHE I	5/84	$1,981,735	$1,981,735	$0	$2,910,780	$0	16.0%	7.4
APACHE III	12/86	$30,000,000	$30,000,000	$13,655,100	$26,427,266	$0	10.4%	4.8
MORGAN O&G	8/88	$15,000,000	$11,400,000	$12,739,067	$0	$3,600,000	5.2%	3.1
B.P. ROYALTY	2/89	$25,000,000	$25,000,000	$32,000,000	$8,618,492	$0	23.4%	2.6
SIMMONS OFS	7/91	$20,000,000	$100,000	$100,000	$0	$19,900,000	0.0%	0.2
TOTAL RES. PORTFOLIO:		$143,081,735	$114,314,489	$98,944,218	$45,261,952	$28,767,246		
TOTAL ALT. INV. PORTFOLIO:		$1,110,668,094	$755,090,868	$899,334,656	$226,597,820	$355,577,226		

ATTACHMENT B

ANNUAL REVIEW SUMMARY
MATRIX II and III
November 20, 1991

MANAGER REPRESENTATIVES: Mike Humphreys, Andrew Marcuvitz, Joseph Rizzi

SBI ASSETS UNDER MANAGEMENT:

Matrix	II	$10,000,000
	III	$ 2,125,000
Total		$12,125,000

BACKGROUND AND DESCRIPTION: Matrix Partners II and III were formed in August 1985 and March 1990, respectively. Each fund has a term of ten years. The Funds' investment emphasis is on high-technology firms in the early and expansion stages of corporate development. However, for diversification, the Fund's portfolio includes a sizable component of non-technology firms. The portfolio may include several small leveraged buyout investments as well. The partners have offices in Boston, and Menlo Park.

QUALITATIVE EVALUATION:

Matrix II is fully invested with over twenty companies remaining in the portfolio. The fund continues to have a strong emphasis on high-technology firms. Matrix III has made nine investments since its inception in March 1990. Following are highlights regarding recent activities:

- Matrix II has 25 companies in the portfolio with a cost of $36.4 million and a fair value of $51.6 million.
- Over the past year, Matrix II has distributed $4.5 million to the SBI of the original $10 million commitment. Since inception, Matrix II has returned 75% of its originally committed capital back to its limited partners.
- The general partner believes that there is the potential for additional significant distributions from six Matrix II investments in 1992.
- The General Partners are anticipating that the return to the Matrix II and III Limited Partners will be approximately 20%.
- Matrix Partners has added another partner in their Boston office Andrew Marcuvitz. Mr. Marcuvitz has a strong background in the computer software technology arena, which is a major focus of Matrix III.
- Matrix III has investments in nine companies. To date, 20% of the SBI's original commitment has been drawdown.

MATRIX QUANTITATIVE EVALUATION

	Matrix II	Matrix III
COMMITMENT:	$10,000,000	$10,000,000
FUNDED COMMITMENT:	$10,000,000	$ 2,125,000
MARKET VALUE OF FUNDED COMMITMENT:	$ 9,032,992	$ 2,050,090
CASH DISTRIBUTIONS:	$ 7,236,061	$ 1,052
INCEPTION DATE(S):	August 1985	May 1990
WEIGHTED AVERAGE INTERNAL RATE OF RETURN (IRR): (annualized, since inception)	12.1%	(3.7)%

MATRIX II DIVERSIFICATION PROFILE (% OF COST)

LOCATION		INVESTMENT STAGE		INDUSTRY	
West	71%	Start-up	28%	Computer/Electronics	28%
East	25%	Early	30%	Medical	22%
South	4%	Mid	5%	Consumer	5%
		Late	26%	Communications	10%
		Buyout	2	Other	11%
		Public	9		

MATRIX III DIVERSIFICATION PROFILE (% OF COST)

LOCATION		INVESTMENT STAGE		INDUSTRY	
West	55%	Start-up	66%	Software	47%
East	36%	Early	16%	Data Communications	35%
South	9%	Late	18%	Other	18%

STAFF COMMENTS AND RECOMMENDATIONS:

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

ATTACHMENT C

ANNUAL REVIEW SUMMARY
INMAN AND BOWMAN
November 20, 1991

MANAGER REPRESENTATIVES: Grant Inman, Bill Elmore

SBI ASSETS UNDER MANAGEMENT: $6,750,000

BACKGROUND AND DESCRIPTION: Inman and Bowman was formed in June 1985. Its investment focus is early-stage, high-technology firms. The fund emphasizes investments in California, where the general partner, Inman and Bowman Management, is based. The fund has considered investments in the Pacific Northwest, as well. The partnership has a ten year term.

QUALITATIVE EVALUATION:

Inman and Bowman has made 24 investments, of which 15 are still active. The portfolio has a strong emphasis on software, network computing, and healthcare products and services industries.

- Of the fifteen active portfolio companies in the partnership, eight of the investments are in the East Bay of San Francisco where the general partner believes there are more attractive venture opportunities than in the mature and highly competitive West Bay area.

- To date, the SBI has experienced a net loss on investments (realized and unrealized) of $1.8 million, in the partnership. The general partners anticipate that the ultimate return to the limited partners could be in the range of 7% to 13%.

- Twelve of the 15 portfolio companies have completed product development and are profitable or are generating revenues. The general partner is active on fourteen of the company Boards of Directors.

- The fund has made one investment during the past year, believes four of the portfolio companies have initial public offering potential in 1992, and have begun to develop exit strategies for five other of the portfolio companies.

INMAN/BOWMAN QUANTITATIVE EVALUATION

COMMITMENT:	$7,500,000
FUNDED COMMITMENT:	$6,750,000
MARKET VALUE OF FUNDED COMMITMENT:	$4,926,967
CASH DISTRIBUTIONS:	$0
INCEPTION DATE(S):	June 1985
WEIGHTED AVERAGE INTERNAL RATE OF RETURN (IRR): (annualized, since inception)	(8.5)%

DIVERSIFICATION PROFILE (% OF COST)

LOCATION		INVESTMENT STAGE		INDUSTRY	
West	100%	Early	96%	Computer/Electronic	52%
		Expansion	4%	Medical	37%
				Consumer	5%
				Other	6%

STAFF COMMENTS AND RECOMMENDATIONS:

Compared to some of the SBI's other venture capital managers, the Alternative Investment Committee and staff have been less satisfied with Inman/Bowman's operation and performance to date. No additional investments with Inman/Bowman are being considered at this time. However, at approximately the midpoint of Inman/Bowman's expected investment term, it is still too early to tell how they will ultimately perform.

ATTACHMENT D

ANNUAL REVIEW SUMMARY
DATA SCIENCE VENTURES (DSV) IV
November 19, 1991

MANAGER REPRESENTATIVES: Mort Collins, Jim Bergman

SBI ASSETS UNDER MANAGEMENT: $10,000,000

BACKGROUND AND DESCRIPTION: DSV Partners IV was formed in April 1985. It has a twelve year term. DSV Partners IV is the fourth venture fund to be managed by DSV Management since the firm's inception in 1968. The firm's primary office is located in Princeton, New Jersey. However, the firm opened a new California office in 1986. Initially, DSV Partners' investment emphasis is on portfolio companies in the start-up and early stages of corporate development. The geographic focus of the partnership is on east and west coast firms. Investments are diversified by industry type.

QUALITATIVE EVALUATION:

- o DSV has stepped up its investment pace in the past year, and expects to invest $8-$10 million in each of the next 3-4 years. They anticipate completing making investments by 1996 and to liquidate the fund over the subsequent three years.
- o The fund currently is focused on biotechnology, environmental, software and information services; businesses. The fund has begun to make some later-stage investments in existing companies and is participating in second round financings with other venture capitalists.
- o The general partners are anticipating that the return to the limited partners will be in the 12%-18% range.
- o Two of the portfolio companies successfully completed initial public offerings during the past year with one of them also completing a successful subsequent secondary stock offering.
- o The fund has made 23 investments with 18 remaining in the portfolio, four having been sold and one company closed.
- o The general partner believes the fund's holdings are progressing favorably and is optimistic about its potential.

ATTACHMENT D (con't)

DSV QUANTITATIVE EVALUATION

COMMITMENT:	$10,000,000
FUNDED COMMITMENT:	$10,000,000
MARKET VALUE OF FUNDED COMMITMENT:	$11,486,100
CASH DISTRIBUTIONS:	$0
INCEPTION DATE(S):	April, 1985
WEIGHTED AVERAGE INTERNAL RATE OF RETURN (IRR): (annualized, since inception)	2.5%

DIVERSIFICATION PROFILE (% OF COST)

LOCATION		INVESTMENT STAGE		INDUSTRY	
West	30%	Start-up	65%	Evironmental	9%
East	65%	Expansion	17%	Software/Infor. Svs./ Computer Equip.	35%
Central	5%	Later Stage	9%	Communications	9%
		Restart	9	Medical/Biotechnology	26%
				Other	21%

STAFF COMMENTS AND RECOMMENDATIONS:

While the performance and operation of DSV has been less satisfactory than some of the SBI's other venture capital managers to date, the Alternative Investment Committee and staff has been satisified with the progress that DSV has made during the past year. No additional investments are being considered at this time.

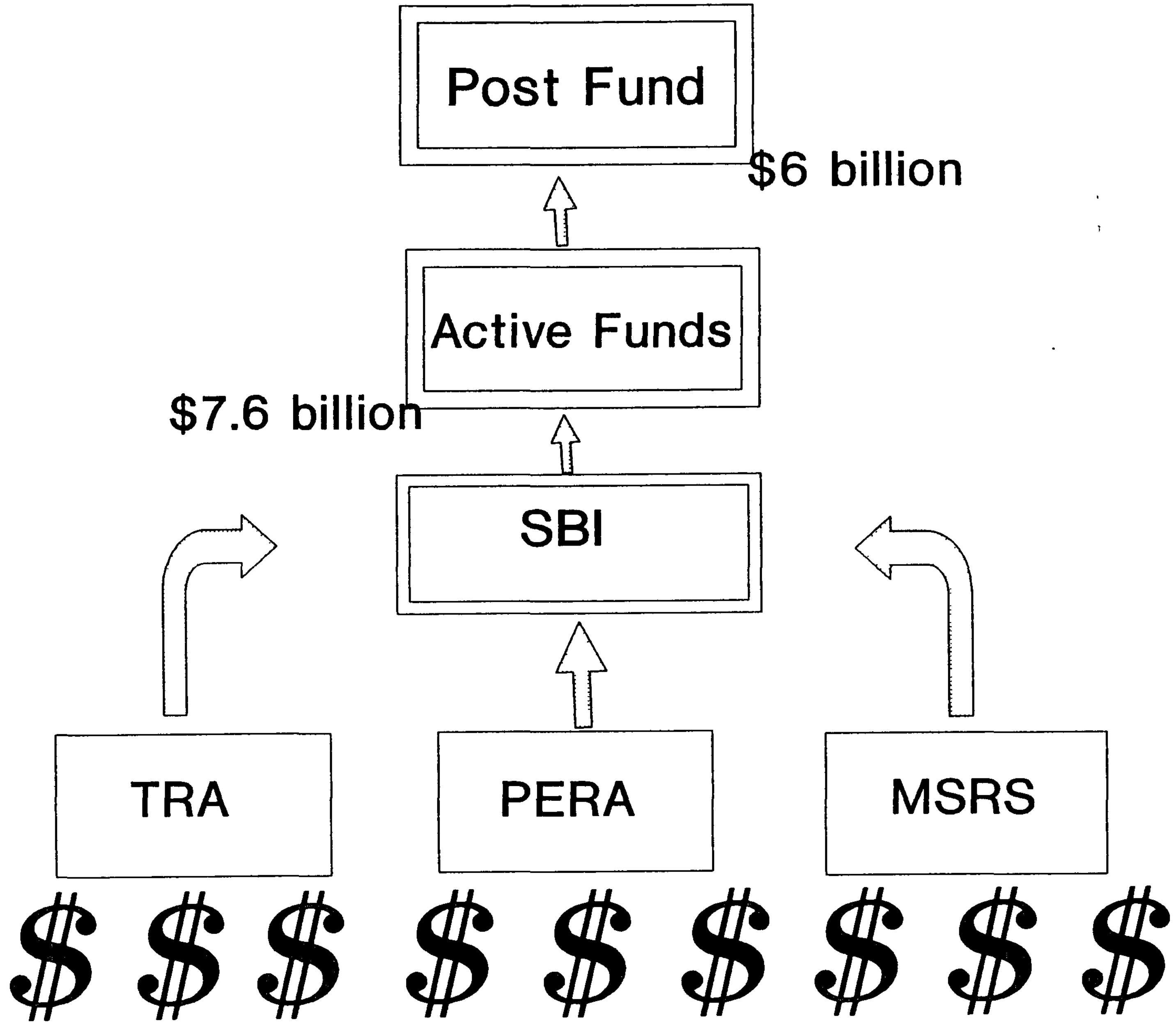
Miscellaneous Material

MINNESOTA POST RETIREMENT INVESTMENT FUND

Proposed Revisions in the Post-Retirement Adjustment Formula

Prepared by MSRS, TRA, PERA

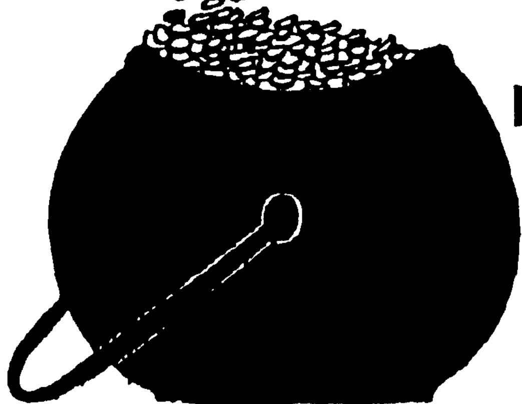
December, 1991

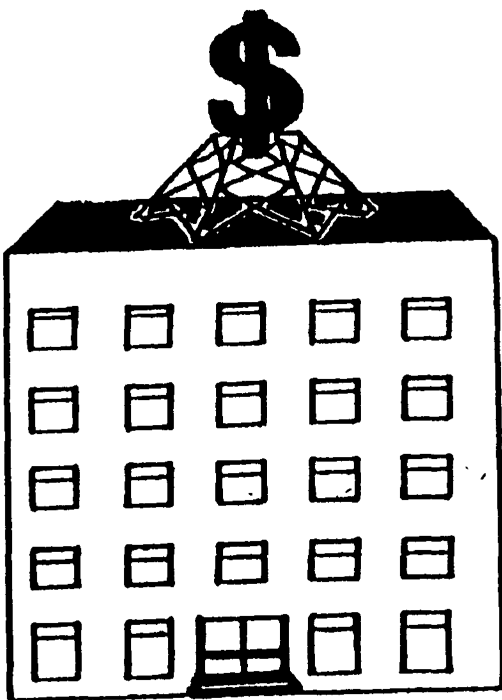

Post Fund
$6 billion
Active Funds
$7.6 billion
SBI
TRA
PERA
MSRS

Post Retirement Investment Fund

Active Fund

Benefit Cost





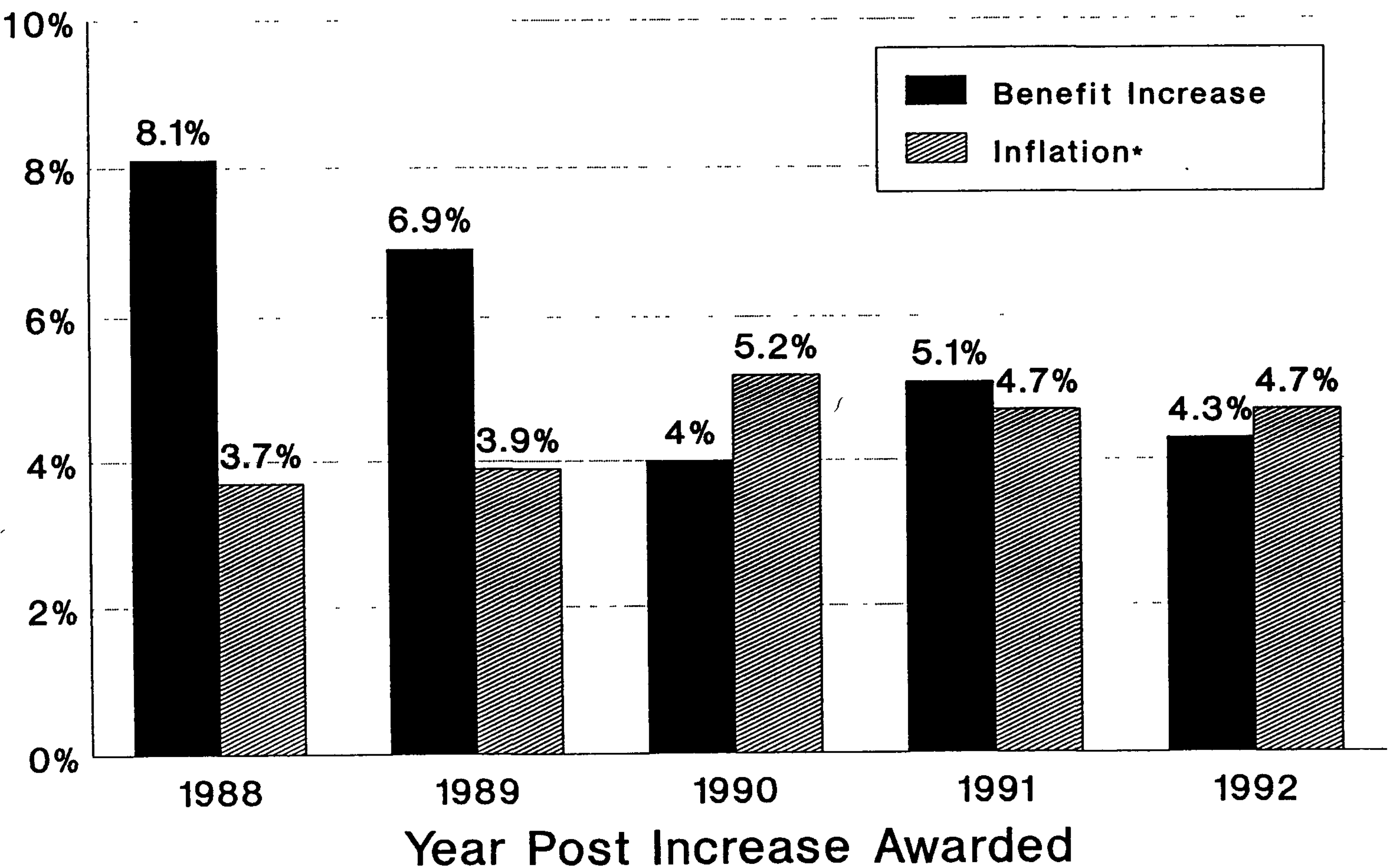
5%

Over 5%

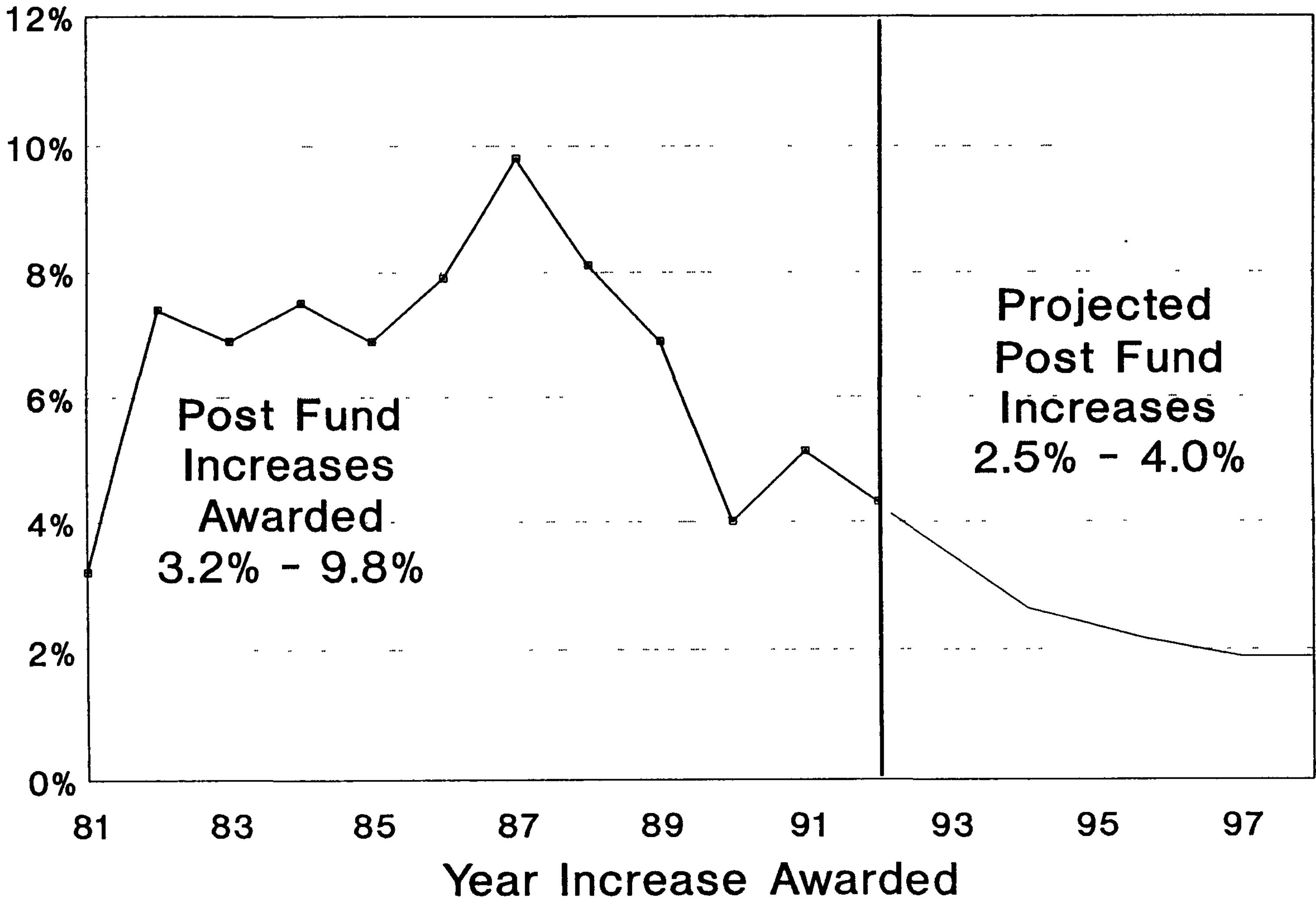
Post Retirement Fund

State Board of Investment

Retirees/ Survivors/ Disabilitants

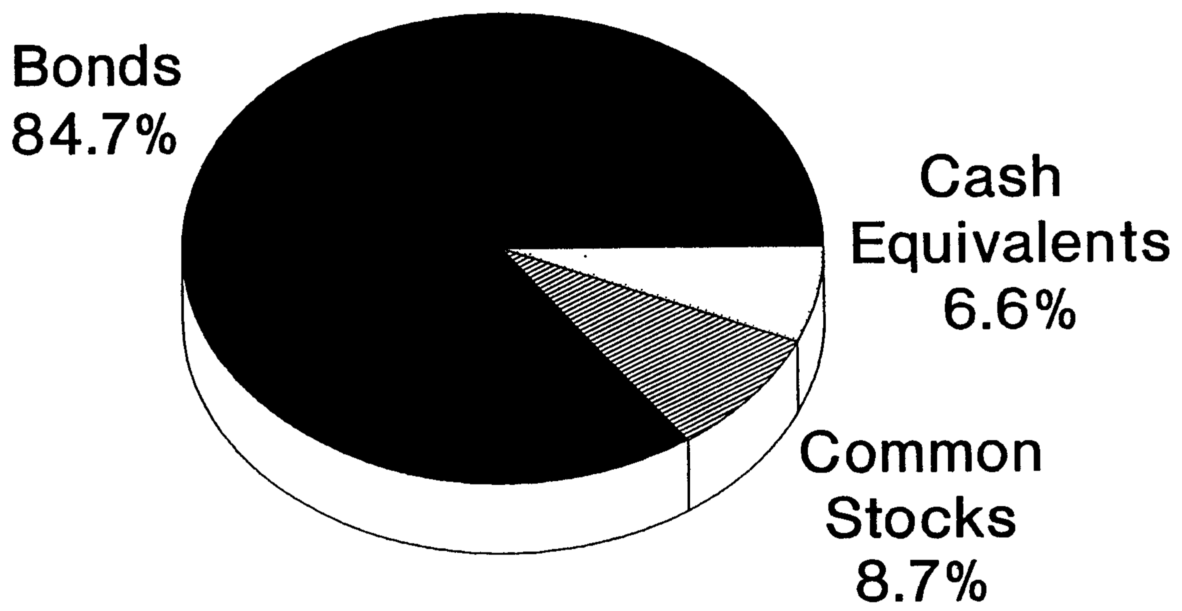


*Fiscal Year Inflation Rate


Post Retirement Investment Fund
12%
10%
8%
6%
4%
2%
0%
81
83
85
87
89
91
93
95
97
Year Increase Awarded
Post Fund
Increases
Awarded
3.2% - 9.8%
Projected
Post Fund
Increases
2.5% - 4.0%

How Your Money Is Invested When You Retire

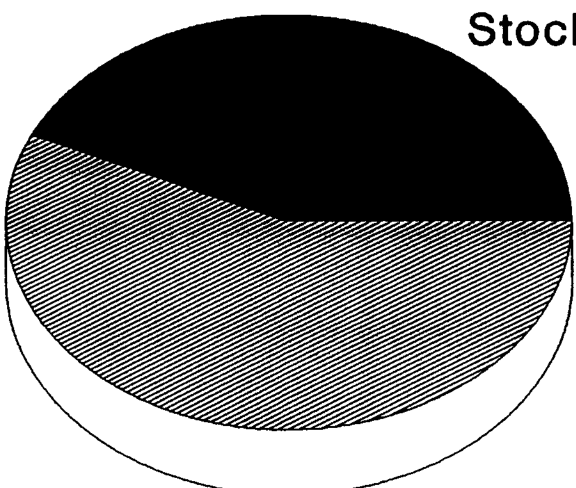
1991 Year-End Investments

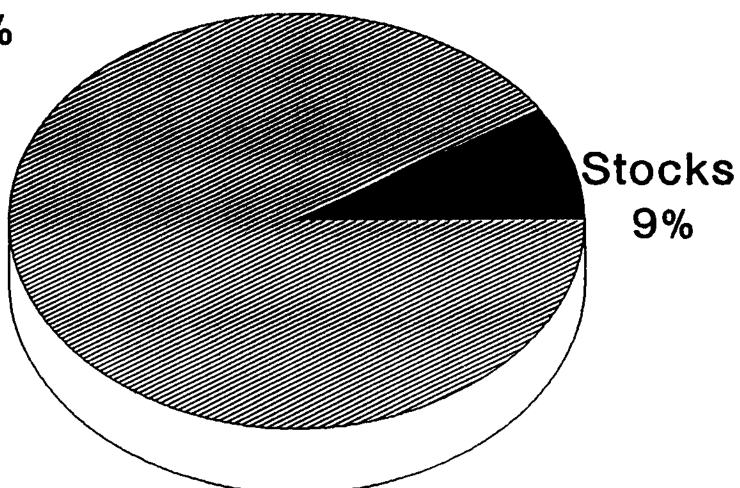


Percent of Market Value

Stock Holdings Decrease Dramatically In Post Retirement Investment Fund

STOCK COMPONENT OF POST FUND DECLINES





Source: State Board of Investment

Historical Capital Markets Returns

Cumulative Investment Values 1926-1990

Post Retirement Investment Fund

Proposed Investment Mix

Bonds 45%

Cash 5%

Common Stocks 50%

Percent of Market Value

Revised Post-Retirement Adjustment Formula

- *COLA Component*
  Up to 3.5% per year, based on CPI
- *Transitional Component*
  1.0% in '94; 0.75% in '95; 0.5% in '96; 0.25% in '97
- *Investment Component*
  Based on investment earnings - measured by increase in market value of the fund
  Increase spread over five-year period with offset of transitional component

PROPOSED POST RETIREMENT ADJUSTMENT FORMULA

YEAR:

1	2	3	4	5	6	7	8	9	10
1/5	1/5	1/5	1/5	1/5					
	1/5	1/5	1/5	1/5	1/5				
		1/5	1/5	1/5	1/5	1/5			
			1/5	1/5	1/5	1/5	1/5		
				1/5	1/5	1/5	1/5	1/5	
					1/5	1/5	1/5	1/5	1/5
Permanent Investment Component:									
1/5	2/5	3/5	4/5	5/5	5/5	5/5	5/5	5/5	5/5
Permanent Inflation Component Up To 3.5%:									
3.5%	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Transition Component Paid In Year One Through Four:									
1.0%	0.75	0.5	0.25						

Post Retirement Investment Fund

Purchase Stocks/Bonds (Beginning of year)	$1,000
Value of Stocks/Bonds (End of year)	$1,250
Stock Dividends Paid	$ 100
Bond Interest Paid	$ 200

Current Formula (Based on Realized Income)	
Dividends	$100
Interest	200
Stock Not Sold	0
Total Distribution	$300

Proposed Formula (Based on Market Value)	
Dividends	$100
Interest	200
Unrealized Gain on Stocks	250
Total Distribution	$550

Post Retirement Investment Fund Adjustment Formula Comparison

This table shows how a monthly pension check of $1,000 in 1971 changed under the current formula in comparison to how it would have changed under the proposed formula.

Year	Inflation***	COLA	Current Formula		Proposed Formula	
Received*	(CPI)	Annuity	% Increase	Annuity	% Increase	Annuity
1971		$1,000		$1,000.00		$1,000.00
1972	4.5	1,045	2.5	1,025.00	3.5	1,035.00
1973	2.9	1,075	4.5	1,071.13	3.5	1,071.23
1974	5.9	1,139	0.0	1,071.13	5.8	1,133.36
1975	11.0	1,264	0.0	1,071.13	3.5	1,173.02
1976	9.3	1,382	0.0	1,071.13	3.5	1,214.08
1977	5.9	1,463	0.0	1,071.13	4.2	1,265.07
1978	6.9	1,564	4.0**	1,113.97	3.5	1,309.35
1979	7.9	1,688	0.0	1,113.97	3.5	1,355.18
1980	10.7	1,868	0.0	1,113.97	3.5	1,402.61
1981	14.6	2,141	3.2	1,149.62	3.5	1,451.70
1982	9.6	2,346	7.4	1,234.69	3.5	1,502.51
1983	2.1	2,396	6.9	1,319.88	3.5	1,555.09
1984	2.6	2,458	7.5	1,418.87	2.6	1,595.53
1985	4.2	2,561	6.9	1,516.78	3.5	1,651.37
1986	3.7	2,656	7.9	1,636.60	3.5	1,709.17
1987	1.7	2,701	9.8	1,796.99	8.7	1,857.87
1988	3.7	2,801	8.1	1,942.54	11.4	2,069.66
1989	3.9	2,910	6.9	2,076.58	6.4	2,202.12
1990	5.2	3,062	4.0	2,159.64	8.6	2,391.50
1991	4.7	3,206	5.1	2,269.78	7.1	2,561.30

* Pension increases are awarded following the end of the fiscal year (June 30). As an example, the 1991 January adjustment was based on the fiscal year ending June 30, 1990.

** Increase provided through legislation rather than fund performance.

*** Inflation rate is based upon the fiscal year ending June 30 preceding the year the Post Fund increase is received.

STATE OF MINNESOTA
Office Memorandum

DATE: December 11, 1991

TO: Members, Legislative Commission on Pensions and Retirement

FROM: Elton Erdahl, Executive Director of Teachers Retirement Association
Laurie Fiori Hacking, Executive Director of Public Employees Retirement Association
Douglas Mewhorter, Acting Executive Director of Minnesota State Retirement System

SUBJECT: **CHANGE IN THE POST FUND FORMULA**

On October 31, the three statewide pension fund boards--the Minnesota State Retirement System, the Teachers Retirement Association, and the Public Employees Retirement Association--voted unanimously to support legislative changes in the benefit adjustment formula and the investment asset allocation used for the Post Retirement Investment Fund. The three boards of trustees have directed us to pursue these changes in the 1992 legislative session.

The retirement boards have studied this issue for several years. We believe that the investment performance of the Post Fund can be enhanced by a change in the benefit formula and the allocation of the investment assets. We see a definite need to change the formula in order to allow the Post Fund to have a more balanced portfolio of stocks and bonds, and therefore have the potential for higher earnings. Currently, nearly 85 percent of the Post Fund is dedicated to bonds. For this reason, annual Post Fund increases are expected to be in the range of 2.5 percent to 4 percent for the near term. This is not maximizing the earnings potential of the Post Fund and is not acceptable to the retirement boards.

Under current law, Post Fund increases are calculated and based solely on the investment performance of the Post Fund. In contrast, the formula which we will propose to the legislature would have two permanent components:

1. Inflation Component
Each year retirees would receive an inflation-based adjustment equal to 100 percent of the inflation rate up to 3.5 percent. The 3.5 percent cap is needed to maintain the actuarial soundness of the Basic and Post Funds.

2. Investment Component
In addition to an increase based on inflation, retirees would also receive an investment-based increase if investment returns are available above those needed to support the basic pension amount and the inflation adjustment. Investment performance under the proposed formula, however, would be measured by the increase in total market value of Post Fund assets whereas current law only permits performance to be measured by realized income. The broader market value measure would give the Post Fund the flexibility needed to have a more diversified, higher earning portfolio.

Tentative list of organizations supporting proposed change in post-retirement adjustment formula

Minnesota State Retirement System (MSRS)
Teachers Retirement Association (TRA)
Public Employees Retirement Association (PERA)

Minnesota Education Association (MEA)
Minnesota Education Association-Retired (MEA-R)
Minnesota Federation of Teachers (MFT)
Minnesota Federation of Teachers-Retired (MFT-R)
Retired Educators Association of Minnesota (REAM)

Minnesota Association of Professional Employees (MAPE)
Middle Management Association (MMA)

Minnesota Retired State Employees Association
Post-1973 PERA Retirees
Public Employees Pension Service Association (PEPSA)

POSITION PAPER
POST FUND FORMULA CHANGE

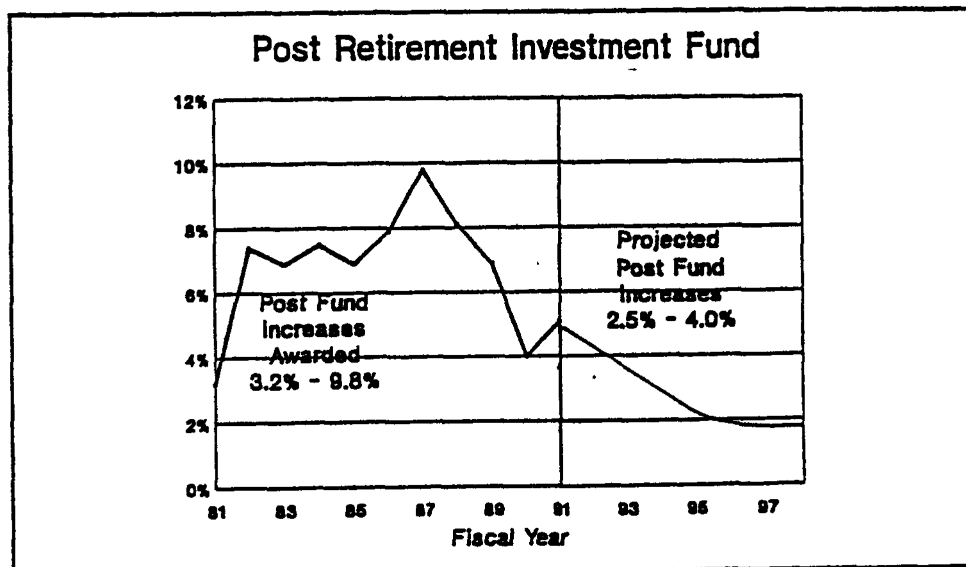
On October 31, 1991 the three statewide public pension boards -- the Minnesota State Retirement System, the Teachers Retirement Association, and the Public Employees Retirement Association -- voted unanimously to seek legislative improvements in the investment strategy and benefit adjustment formula used for the Post Retirement Investment Fund. A number of organizations representing public employees and retirees have also endorsed these improvements in the Post Fund.

Background

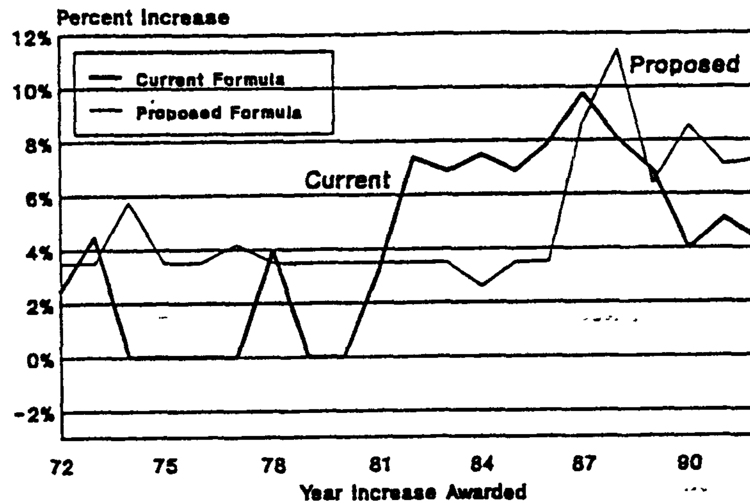
The Post Fund was established over twenty years ago to segregate retired employee assets from active employee assets and to provide a self-financing benefit increase mechanism for retirees. Under state law, the first five percent of annual investment earnings must remain in the Post Fund to fully fund the initial benefits granted when active employees retire. Excess earnings over five percent, if any, are used to fund annual increases for retirees.

Why Change Is Needed

Post Fund increases in the 1980's were generally above 6% per year. Unless the formula is changed, however, Post Fund increases for the next several years are expected to be in the range of 2.5% to 4%, as illustrated in this chart.



Low increases are predicted because approximately 90% of the Post Fund's portfolio is now invested in bonds. This domination of the portfolio by bonds is undesirable because interest rates and bond yields have been



Benefits of the Proposed Change

- *The earnings potential of the 6 billion dollars of Post Fund assets will be maximized since more of those assets could be invested in stocks.*
- *Benefit increases will be higher under the proposed formula because investment performance would be measured by the increase in market value of all assets in the Post Fund.*
- *Benefit increases will be more inflation sensitive and provide greater protection of pension purchasing power when retirees need it most.*

November 20, 1991
(Prepared by staff of MSRS, TRA and PERA.)

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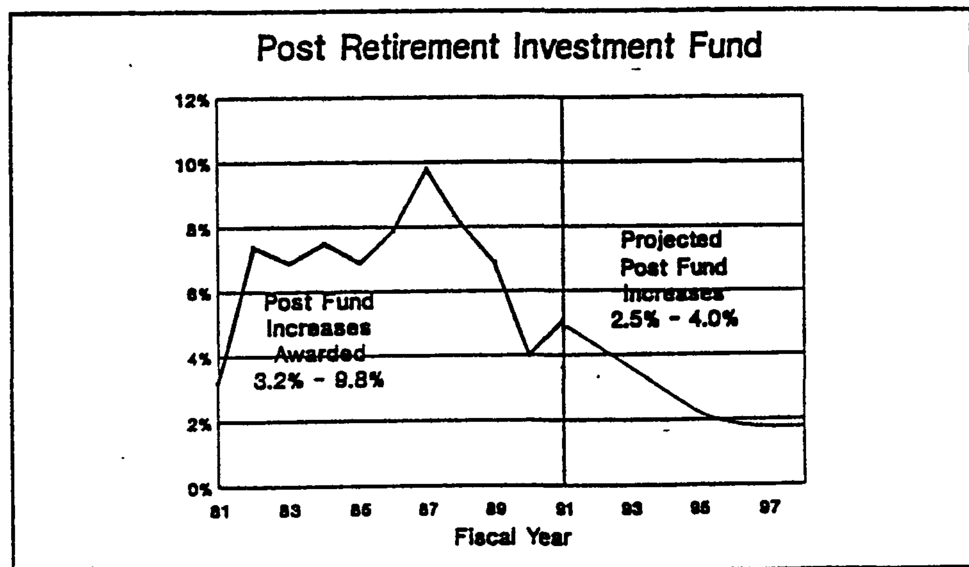

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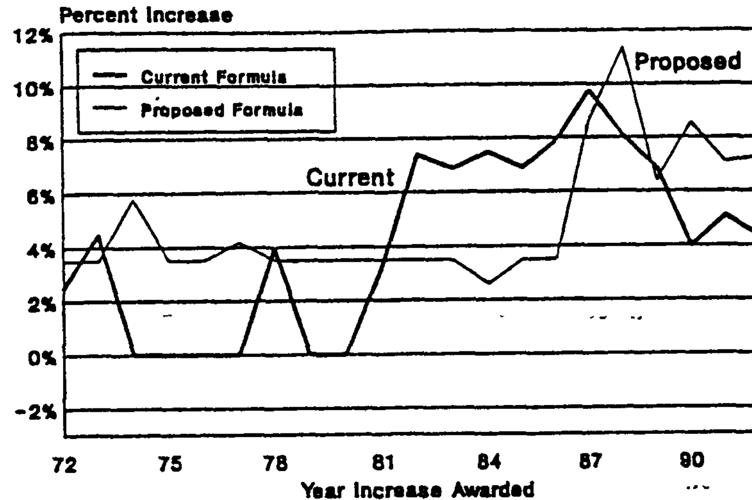

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November 20, 1991
(Prepared by staff of MSRS, TRA and PERA.)

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- *Investment Component*
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  Increase spread over five-year period with offset of transitional component
- *Transition Component*
  1.0% in '94; 0.75% in '95; 0.5% in '96
  0.25% in 97

PROPOSED POST RETIREMENT ADJUSTMENT FORMULA

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			1/5	1/5	1/5	1/5	1/5		
				1/5	1/5	1/5	1/5	1/5	
					1/5	1/5	1/5	1/5	1/5
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Transition Component Paid In Year One Through Four:									
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