

**MINNESOTA STATE BOARD
OF INVESTMENT
MEETING
March 19, 1992
&
INVESTMENT ADVISORY
COUNCIL MEETING
March 10, 1992**

AGENDA
STATE BOARD OF INVESTMENT
MEETING

Thursday, March 19, 1992

9:00 A.M. - Room 125

State Capitol

Saint Paul

TAB

1. Approval of Minutes of December 18, 1991 Meeting
2. Adoption of Calendar 1992 Meeting Schedule (M. McGrath)
3. Report from the Executive Director (H. Bicker)
 - A. Quarterly Investment Review (September 1 - December 31, 1991) A
 - B. Portfolio Statistics (December 31, 1991) B
 - C. Administrative Report C
 1. Budget Report
 2. Travel Report
 3. Management Option for the Environmental Trust Fund
 4. Legislative Update
 5. IAC Member Appointments
4. Reports from the Investment Advisory Council (J. Yeomans)
 - A. Asset Allocation Committee D
 1. Review rationale for international investing
 - B. Stock and Bond Manager Committee E
 1. Review of Manager Performance
 2. In-depth Review of Fidelity
 3. Annual Review of BEA
 4. In-depth Review of Rosenberg
 5. Consider Contract Renewals
(Franklin, GeoCapital, Rosenberg, BEA)
 6. Adopt Equity Manager Monitoring Program
 7. Adopt Equity Manager Allocation Guidelines
 - C. Alternative Investment Committee F
5. Update on KKR
6. Review of Performance Objectives

STATE BOARD OF INVESTMENT

Minutes State Board of Investment Meeting December 18, 1991

The State Board of Investment (SBI) met at 8:30 A.M. on Wednesday, December 18, 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.

Mr. Carlson called the meeting to order and the minutes of the September 11, 1991 meeting were approved.

Executive Director's Investment Report

Mr. Bicker, Executive Director, referred Board members to Tab A of the meeting materials. He stated that the Basic Funds had exceeded the inflation rate over the last ten years (Basics Total Fund 14.6%, Inflation 3.9%) and slightly underperformed the composite index over the five year period (Basics Total Fund 11.8%, Composite 11.9%). He added that the Basics had outperformed the median fund for the most recent five year period (Basics-excluding alternative assets 12.2%, Median 11.7%). Mr. Bicker reported that the benefit increase for the Post Retirement Fund is 4.3%, effective January 1, 1992. He added that the fiscal year 1991 actuarial data should be available early in 1992.

Mr. Bicker stated that the Basic Funds increased in value 6.7% for the quarter ending September 30, 1991 due to strong performance in the stock, bond, and venture capital asset classes. He added that the asset mix remained unchanged for the quarter. He reported that for the quarter, the Basic Funds outperformed both the composite index and the median fund (Basics Total Fund 7.2%, Composite 6.2%, Median 5.4%). He added that both the stock and bond segments exceeded their respective targets for the quarter (Basic stocks 6.7% vs. Wilshire 5000 6.4%, and Basic bonds 6.0% vs. Salomon Broad Index 5.7%).

Mr. Bicker directed members to the Post Retirement Fund Summary. He stated that the fund increased in value by 7.9% during the third quarter, due to strong investment performance. He added that the asset mix changed slightly as the large cash flow received at the end of the previous quarter was invested in bonds. Mr. Bicker reported that the stock segment outperformed its benchmark for the quarter (Post stock segment 6.9%, Post benchmark 5.1%).

Mr. Bicker referred members to the new page of the report added for the Assigned Risk Plan. He stated that the Board had retained Voyageur Asset Management as the manager for the fund, effective July 1, 1991. He added that this information would be updated on an on-going basis. In conclusion, he stated that as of September 30, 1991, the State Board of Investment was responsible for over \$18 billion in assets.

Mr. Bicker referenced the Portfolio Statistics and the budget and travel information found in Tab C. In response to a question from Mr. Humphrey, Mr. Bicker explained that the communication expenditures to date were anticipated due to the purchase of some new equipment.

Administrative Committee Report

Mr. McGrath reported that the Committee had met on December 10, 1991. He referenced the four information items found in Tab D and in the absence of questions or discussion, moved on to the three recommendations requiring Board approval.

Mr. McGrath stated and moved approval of the Committee's first recommendation that the SBI establish a Consultant Review Committee to define the SBI's consulting needs, draft the RFP, review responses, interview finalists and make a recommendation to the Board at the June 1992 meeting. Mr. Humphrey seconded the motion. Mr. Dayton suggested that the Board may want to consider using an additional consultant for international investments. The motion was approved.

Mr. McGrath moved approval of the Committee's recommendation concerning extension of the contract for software services associated with the Post Fund dedicated bond portfolio. Mr. Carlson stated that since this item was a Committee report, no second to the motion was required. The motion as stated in the report was approved.

Mr. McGrath moved approval of all eight of the statutory change recommendations for the SBI's 1992 legislative bill. In response to a request from Mr. Carlson, Mr. Bicker presented information on two changes that could be considered controversial. Mr. Bicker stated that the SBI is suggesting that the front-end load on new contributions be eliminated in the Supplemental Investment Fund (SIF) by instituting an asset-based charge. Mr. Humphrey expressed concern that some participants would be charged twice. Mr. Bicker acknowledged that situation, and went on to explain that because the SIF accounts are commingled, those assets could not be segregated in order to "grandfather" current participants. Mr. Bicker stated that the majority of administrative costs are associated with generating statements and allowing participants to transfer funds between accounts. He added that participants who are not currently contributing to the fund do not pay for these services, while current contributors do. He stated that the asset-based fee would equalize the costs to all participants plus have the added benefit of making all the investment options from all vendors comparable, thereby reducing the current confusion for participants. In response to questions from Mr. McGrath and Mr. Humphrey, Mr. Bicker stated that the fee would be approximately one tenth of one percent and that the fee affects roughly 17,000 participants. In response to a question from Mr. Carlson, Mr. Bicker replied that the retirement plans that use the Supplemental Fund are in support of the change.

Mr. Bicker stated that the second legislative proposal in question is the request for additional authority to amortize profits and loss in the Permanent School Fund which would result in stocks becoming a more viable option in the future.

Mr. McGrath stated his concerns about the sixth recommendation which is to eliminate restrictions on the purchase of original issue municipal debt. He added that this change would expand the universe of securities available for investing the proceeds of the State's bond issues and their respective debt reserve accounts and provide additional opportunities to generate arbitrage profits. Mr. Bicker stated that when the provision was previously in statute, the SBI was used as a "dumping ground" for unsalable municipal debt. He stated that many changes have been made in statute since that time, providing

protection from that type of situation occurring again. Mr. Humphrey stated concern over possible political pressure in the future if the restriction was removed from statute. In response to a question from Mr. Carlson, Mr. Sausen replied that the issue had been reviewed by the Department of Finance and that it would provide additional arbitrage opportunities. In response to concerns expressed by Mr. Carlson, Mr. Sausen suggested that the recommendation be amended to only include debt service funds. Mr. Dayton moved approval of the amendment. Ms. Grove seconded the motion. The motion was approved. Mr. Carlson noted that Mr. McGrath had previously moved approval of all remaining legislative recommendations and stated that a second to the motion was not required. The motion was approved.

Post Retirement Fund Benefit Increase Proposal

Mr. Erdahl, Executive Director of the Teachers Retirement Association (TRA) distributed a position paper on the Post Fund formula change (see Attachment A). He stated that the three statewide funds (TRA, PERA, and MSRS) held a joint meeting in October 1991 and that the meeting resulted in unanimous endorsement of the benefit increase proposal for the Post Fund. He added that the retirement systems had prepared a legislative bill and are requesting support and approval from the State Board of Investment prior to seeking legislative approval. He described now both the current formula and the proposed formula work and answered questions regarding how losses or shortfalls would be handled from year to year.

Mr. Humphrey voiced concern regarding some of the assumptions used. Mr. Carlson stated his concern regarding the economic prognosis for the 1990's and added that depletion of the fund's assets could still occur. Mr. Bicker acknowledged that possibility, but stated that the proposed formula would create a self-funding mechanism. He added that this issue has been addressed by a staff position paper in 1986, the Task Force on Fund Objectives in 1989, and most recently, by the Legislative Auditor's Office. Mr. Carlson stated the possibility that some of the assumptions used might be unrealistically high. Mr. Bicker said he was confident that the assumptions used to test the proposal would stand up to great scrutiny. Ms. Yeomans reported that the IAC strongly urged the Board to endorse the proposal. In response to a question from Mr. Carlson regarding the assumptions used, Ms. Yeomans stated that the IAC views the assumptions as subject to change over time, but that it believes there is logical consistency to using the same actuarial assumptions across all funds.

Mr. Ousdigian stated that many retirees had contacted him in opposition to the change and that he also is concerned about having a higher allocation of the fund to stocks. Mr. Carlson acknowledged Mr. Ousdigian's views, but stated that a change appears necessary. Mr. Whitaker, President of the Coalition of Retiree Associations, stated that members of the Coalition supported the proposed change, however, he noted that they were in opposition to any action that would result in the merging of the various retirement funds and also any increase in the assumed rate. Mr. Carlson confirmed that the two items that the coalition is opposed to are not part of the proposed change. Mr. Carlson said he appreciated the work of the retirement systems and Mr. Bicker to address this issue. He said he was pleased that the SBI had not ignored the problems presented by the current system.

Mr. McGrath moved that the SBI support the pension funds' legislative proposal for the Post Retirement Fund benefit increase change. Mr. Dayton seconded the motion. The motion was approved.

Equity Manager Search Committee Report

Mr. Sausen, Chair of the Equity Manager Search Committee, reported that the Committee had completed a search for new managers, and as a result of a request from the IAC to evaluate Investment Advisers (IAI) and IDS Advisory, had also evaluated all of the current equity managers. He stated that 32 firms had responded to the request for information and that through the evaluation process, ten firms were selected to be interviewed, including IAI and IDS. He said the Committee decided to require seven of nine votes to produce strong recommendations. He then summarized the recommendations recorded in the Committee report as follows:

1) New Managers

To hire Independence Investment Advisers and Lynch and Mayer, authorizing that each manager receive up to \$200 million in assets, with the specific initial allocation to be reviewed by the Stock and Bond Manager Committee.

2) Current Managers

To terminate the current contract with Investment Advisers Inc., maintain the current contract with IDS Advisory, and to reduce the size of the portfolio managed by Rosenberg Institutional to approximately \$150 million.

3) Future Actions

To monitor several of the finalist firms, create a permanent Manager Search Committee and recommend review of the Manager Continuation Policy by the IAC Stock and Bond Manager Committee.

Ms. Yeomans noted that at the IAC meeting there was unanimous concurrence with the Committee report, with the exception of one dissenting vote, on the motion to reduce the Rosenberg portfolio to \$150 million.

Mr. Bicker suggested that the new managers be hired as of February 1, 1992 and be given a 16 month contract in order to put them on the same contract cycle as the other active equity managers.

Mr. Humphrey stated that he approved of the permanent status of the Equity Manager Search Committee. Ms. Growe agreed, but questioned whether the process had been flawed and could be improved. Ms. Yeomans stated that the process could be more flexible and that the SBI should try to avoid short timeframes in which to conduct future searches. Mr. Bicker stated that the creation of a permanent committee would result in a more efficient and flexible process. Mr. Sausen agreed, adding that finalists would only be required to submit the paperwork once. Mr. McGrath and Ms. Growe noted that public funds have different requirements than private sector funds and that all future search committees should assist managers in understanding the needs of the SBI. Mr. Dayton stated that his concerns with the decision-making process were focused on the constraints of the VAM performance analysis and its mechanistic nature. Mr. McGrath

moved approval of all of the Equity Manager Search Committee's recommendations as shown in the Committee report. Mr. Humphrey seconded the motion. Ms. Grove noted that it is difficult to terminate a manager who has performed well for the SBI in other asset classes. The motion was then approved. (Mr. Dayton asked to be recorded as a "no" vote.) Mr. Dayton complemented Mr. Sausen on the work of the Committee and requested staff to send a letter of appreciation on behalf of the Board to the four IAC members on the Committee for their outstanding contributions of time and expertise.

Asset Allocation Committee Report

Mr. Bohan, Chair of the Asset Allocation Committee, discussed recommendations in two areas: the Assigned Risk Plan and international investing. He referred Board members to Tab F of the meeting materials and stated that staff had prepared a comprehensive policy statement for the Assigned Risk Plan and that the Committee was recommending approval of the policy statement. Ms. Grove moved approval of the Committee's recommendation. Mr. Humphrey seconded the motion. The motion was approved.

Mr. Bohan distributed revised recommendations that were approved by the IAC (see Attachment B) for the international component. He stated that the first recommendation for the Board's consideration is to adopt staff's proposal on currency hedging which is that the passive portfolio would not be hedged while the active portfolios would be hedged at the manager's discretion. He reported that the second recommendation is that the SBI use Morgan Stanley's index of Europe, Australia and the Far East (EAFE) as its source for international index data, noting that its weighting would be determined at a later date. Mr. Bohan stated that the third recommendation is to proceed with manager searches as soon as possible, and that the remaining issues of asset class target weighting and final management structure should not impede the selection of active country/passive stock managers.

In response to questions from Mr. Carlson, Mr. Bohan explained the strategy behind active country/passive stock management. He also summarized the arguments and comments regarding the active/passive issue for Board members. Mr. Bohan stated that typically in rising markets, passive management will outperform active management, but that in uncertain markets, active managers have greater opportunity to add value. He stated that staff and IAC feel further study is warranted on the active/passive issue and that recommendations will be presented by June 1992. Ms. Grove questioned whether the SBI has the appropriate process in place and enough expertise available to evaluate managers and establish the international program. Mr. Bohan responded that he felt with access to expertise from Richards & Tierney and all the IAC members, the SBI could achieve a process that everyone is comfortable with. Mr. Bicker noted that the longer six month time frame would give the SBI additional time to study the issues. Mr. Dayton expressed concern regarding the lack of clearly stated expectations about returns and the strategies in general. He noted that the implication of the South Africa restrictions need to be considered. He also stated that he was concerned that the SBI was favoring an active country/passive stock strategy when that is the strategy that is currently least used by other pension funds. Mr. Bicker agreed that certain expectations need to be delineated, but said that he felt it was important to begin the process, learn from it, and use the knowledge gained in making the final decisions. During further discussion, Mr. Dayton stated that he would prefer to have the manager search process include active stock managers in addition to those who manage active country/passive stock portfolios. Mr.

Bicker then confirmed that if approved, the Board was authorizing staff and the Committee to proceed with development of the international program and to begin searching for managers to fit into the various segments of the proposed program. Mr. Humphrey requested that the Asset Allocation Committee review the differences in markets and disclosure requirements in the international area. He offered his office's assistance on this matter. Ms. Growe moved approval of the recommendation as clarified by Mr. Bicker. Mr. Dayton seconded the motion. The motion was approved.

Stock and Bond Manager Committee Report

Ms. Yeomans stated that the Stock and Bond Manager Committee Report contained information items only. She stated that the Committee reviewed existing manager performance and that performance for the quarter was favorable relative to both the benchmarks and the market indices. She reported that the new Guaranteed Investment Contract (GIC) contract was awarded to two insurance firms, Continental Assurance and Provident National, resulting in a blended rate of 6.63% on a three year GIC for the Supplemental Investment Fund.

Alternative Investment Committee Report

Ms. Yeomans stated that the Alternative Investment Committee had only information items to report. She stated that annual reviews were completed on the venture capital managers. Mr. Bicker noted that the Irwin Jacob's IMR Fund would have the required \$500 million prior to any closing with the SBI. Ms. Yeomans stated that there is no Committee recommendation regarding KKR at this time. Ms. Haukedahl reported that the lawsuit involving KKR had been dismissed and that it was unclear if it was being appealed. Mr. Dayton asked it is was possible to terminate the agreement for the outstanding \$150 million commitment. Ms. Eller stated that it would be difficult since it would effect a number of other participants in the fund. Mr. Carlson adjourned the meeting at 10:40 A.M.

Special Meeting On KKR

The State Board of Investment reconvened on December 18, 1991 at 10:45 A.M. to discuss the status of the Kolberg, Kravis and Roberts (KKR) lawsuit. In attendance were Governor Arne Carlson; Secretary of State Joan Anderson Growe; State Auditor Mark B. Dayton; State Treasurer Michael A. McGrath; and Attorney General Hubert H. Humphrey III. Others in attendance were Christie Eller, Assistant Attorney General; Cathy Haukedahl, State Solicitor General; Howard Bicker; Beth Lehman; Jim Heidelberg; Deborah Griebenow, Charlene Olson; John Griebenow. and Mansco Perry.

Respectfully submitted,



Howard J. Bicker
Executive Director

Attachments

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.

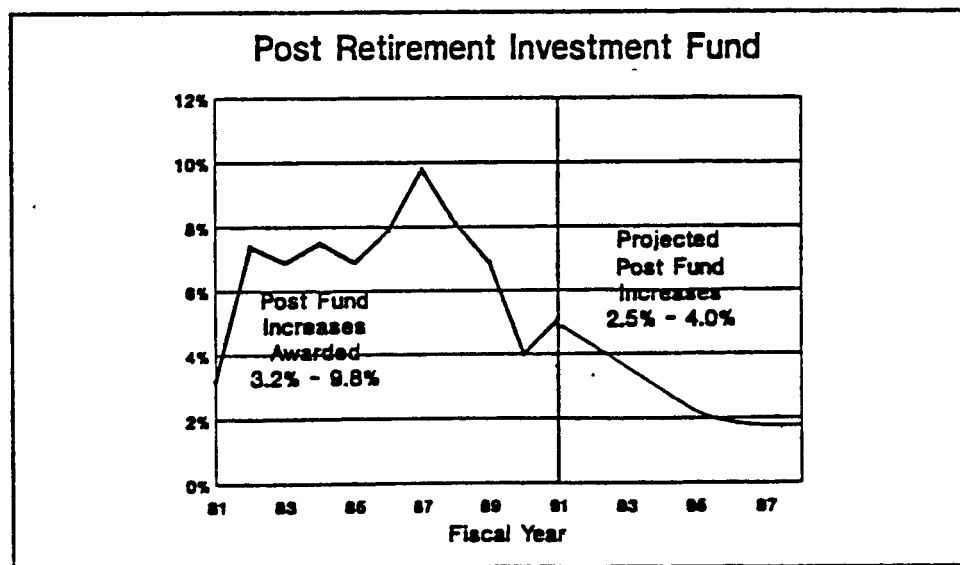
Background

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

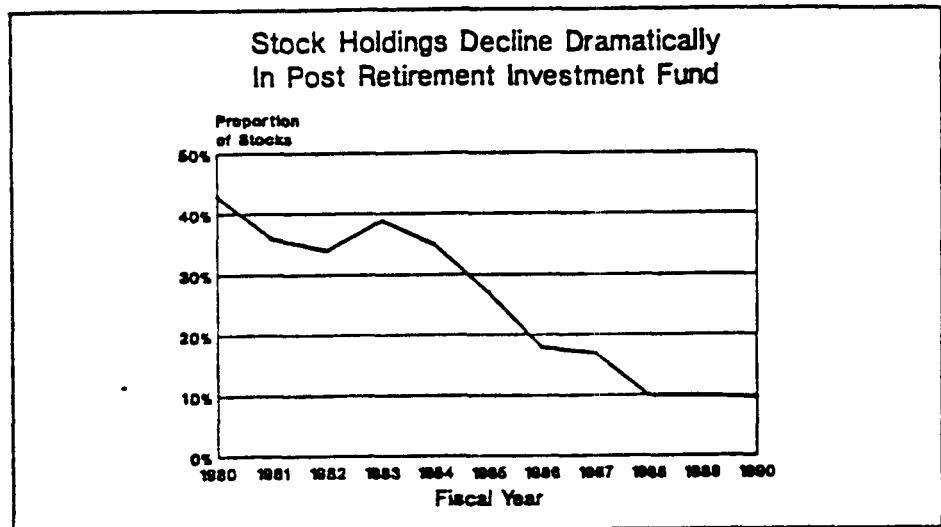


plummeting in recent years. Bond yields are averaging 6% to 7% and are expected to stay very low for the foreseeable future.

One reason why the Post Fund paid larger increases in the 1980's was because it had a balanced portfolio of stocks and bonds; however, since 1980 stock holdings of the Post Fund have decreased dramatically. The Post Fund had approximately 45% of its investments in stocks in 1980 and now that share has been reduced to less than 10%.

Investment analysts believe that a fund of this size (\$6 billion) should maximize its

investment earnings by having a balanced portfolio of stocks and bonds. Over the long term, stocks will yield higher income for the Post Fund and higher benefit increases for retirees. Bonds have been holding down benefit increases particularly in the last three years and are expected to continue to do so in future years unless the asset allocation is changed.



Proposed Formula Change

The current Post Fund formula has only one component in determining increases. That component is based on actual interest, dividends, and any net gains or losses realized from the sale of investments. Under current law, benefit increases to retirees are based solely on this realized investment yield above the 5% actuarial requirement of the Post Fund. In contrast, the proposed formula would have three components:

1. Inflation Component

Each year retirees would receive an inflation-based adjustment equal to 100% of the inflation rate up to a maximum of 3.5%. The 3.5% cap is needed to maintain the actuarial soundness of the pension fund. A cap higher than 3.5% would force an increase in contribution rates for working members of the pension funds.

2. Investment Component

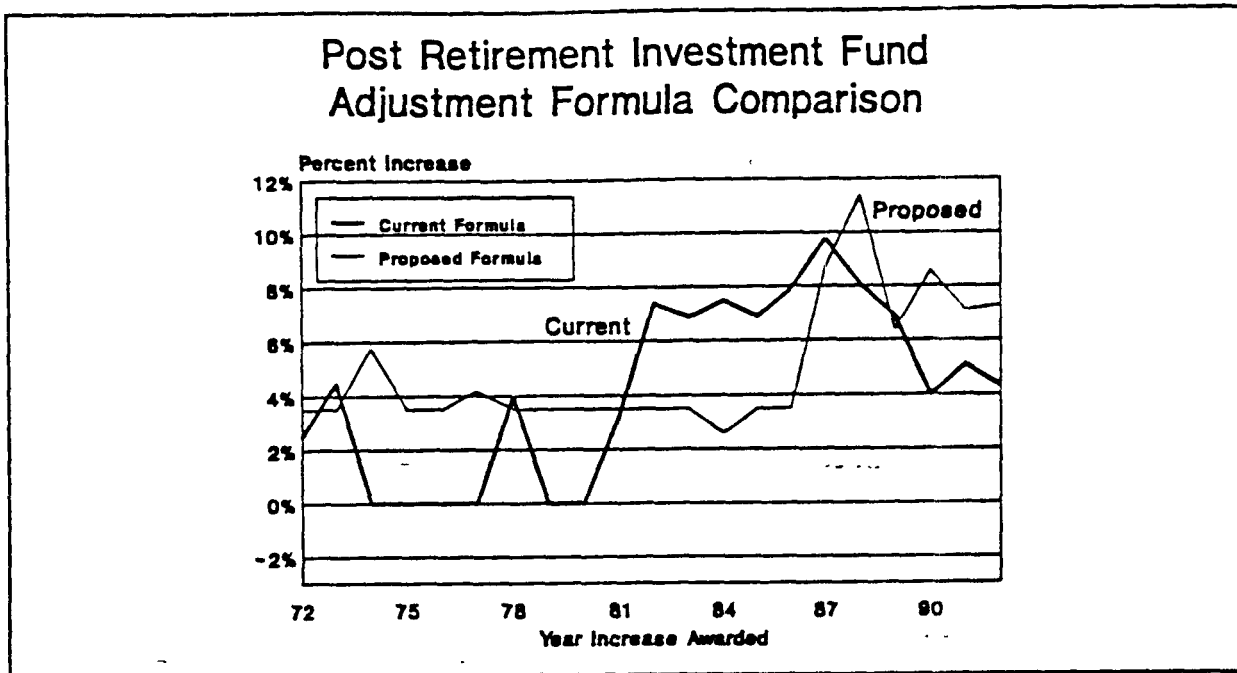
In addition to an increase based on inflation, retirees would also receive an investment-based increase. Investment performance, however, would be measured by the increase in market value of all the assets in the Post Fund whereas current law only permits the increase to be measured by "realized income." "Realized income" counts the interest earned on bonds, the dividends paid by stock investments and the gain and/or loss from only those stocks and bonds which are actually sold during the year. The broader measure of market value increases for all assets (not just those assets that are sold) gives the Post Fund more flexibility to have a more diversified, higher earning portfolio. This, in turn, may provide benefit increases in addition to the 3.5% inflation-based component.

Because the stock market can be volatile from year to year, investment gains (or losses) will be spread over five years to produce more stability in benefit increases for retirees. When a net investment gain occurs, one-fifth of the gain will be distributed to retirees in the form of a benefit increase in each of the following five years. This one-fifth per year distribution will occur in all future years so that by the fifth year retirees will receive a full investment component. If a loss occurs, it will also be spread over five years and the loss must be recovered each year before any investment component increase can be given.

3. Transition Component

Because the investment component of the new formula will take five years to be phased in fully, a temporary transition adjustment will be paid to retirees during the phase-in period. This transition adjustment will be an additional 1% adjustment in the first year phasing down to 0.25% by the fourth and last year of the phase-in period. In the fifth year, the transition would be complete because by the fifth year retirees will receive a full investment component.

The annual benefit increases actually paid to retirees will be the sum of (1) the inflation component plus (2) the investment component plus (3) the transition component. The inflation and transition components will be paid regardless of investment performance. The investment-based increase component will be paid only if investment returns are available above those needed to support the basic pension amount, the inflation component, and the transition component. The chart on the following page compares pension increases that have actually been paid in the past ten years with those that would have been paid had the proposed formula been in place. The chart illustrates that the domination of bonds has been holding down benefit increases in the last five years.



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.)

RECOMMENDATIONS FROM THE ASSET ALLOCATION COMMITTEE AS AMENDED BY THE FULL IAC:

- 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 proceed with manager searches as soon as possible. The remaining issues of investment restrictions, asset class target weighting, and final management structure should not impede the selection of active country/passive stock managers.

The IAC will examine the issues of investment restrictions, asset class target weighting and management structure in greater depth and will make its recommendations by June 1992. Prior to that time, the IAC and staff agree that the SBI should be fully appraised of the trade-offs associated with the inclusion or exclusion of passive management.

AGENDA
INVESTMENT ADVISORY COUNCIL
MEETING

Tuesday, March 10, 1992
2:00 P.M. - SBI Conference Room
Room 105, MEA Building
55 Sherburne Avenue
Saint Paul

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STATE BOARD OF INVESTMENT

Minutes Investment Advisory Council Meeting December 17, 1991

The Investment Advisory Council met on Tuesday, December 17, 1991 at 2:00 P.M. in Room 125, State Capitol, St. Paul, Minnesota.

Members Present: John Bohan; Elton Erdahl; Ken Gudorf; Laurie Fiori Hacking; Keith Johnson; Peter Kiedrowski; Malcolm McDonald; Douglas Mewhorter; Gary Norstrem; Michael Troutman; and Jan Yeomans.

Members Absent Jim Eckmann; John Gunyou; David Jeffery; Han Chin Liu; Barbara Schnoor; and Deborah Veverka.

SBI Staff: Howard Bicker; Beth Lehman; Jim Heidelberg; Deborah Griebenow; Jim Heidelberg; and Charlene Olson.

Others Attending: Gary Austin; Edward Burek, LCP&R; Maureen Culhane, Richards & Tierney; Mark Dayton; Christie Eller; John Gardner, TRA; Joan Anderson Growe; John Hagman, REAM; Michael A. McGrath; John Manahan; Hugh L. Miller, REAM, Owatonna; Lisa Rotenberg; Peter Sausen; Ed Stuart, REAM; Elaine Voss; and Glen West, MAPE.

Ms. Yeomans called the meeting to order and the minutes of the September 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 Funds have exceeded the inflation rate over the last ten years (Basics Total Fund 14.6%, Inflation 3.9%) and slightly underperformed the composite index over the five year period (Basics Total Fund 11.8%, Composite 11.9%). He added that the Basics had outperformed the median fund for the most recent five year period (Basics-excluding alternative assets 12.2%, Median 11.7%). Mr. Bicker reported that the benefit increase for the Post Retirement Fund is 4.3%, effective January 1, 1992. He added that fiscal year 1991 actuarial data should be available early in 1992.

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Mr. Bicker directed members to the Post Retirement Fund Summary. He stated that the fund increased in value by 7.9% during the third quarter, due to strong investment

performance. He added that the asset mix changed slightly as the large cash flow received at the end of the previous quarter was invested in bonds. Mr. Bicker reported that the stock segment outperformed its benchmark for both the quarter and year (Post stock segment 6.9%, Post benchmark 5.1%).

Mr. Bicker referred members to the new page of the report added for the Assigned Risk Plan. He stated that the Board had retained Voyageur Asset Management as the manager for the fund, effective July 1, 1991. He added that this information would be updated on an on-going basis.

In conclusion, he stated that as of September 30, 1991, the State Board of Investment was responsible for over \$18 billion in assets.

Investment Advisory Council Committee Reports

Asset Allocation Committee

Mr. Bohan referred members to Tab F of the meeting materials and noted that the Asset Allocation Committee held two meetings during the quarter. He stated that the first action item is to approve an investment policy statement for the Assigned Risk Plan. He reported that after a discussion among Committee members, they approved staff's policy statement, with the understanding that the asset allocation for the plan would be reviewed annually.

Mr. Bohan stated that 10% of the Basic Funds were approved by the Board at its September meeting for the international investment program. He turned the presentation over to Ms. Lehman who stated that the Asset Allocation Committee focused on several major issues regarding the international program. She distributed several handouts (see Attachment A) and noted that recommendations on several issues varied between staff and the Committee.

She reported that both the Committee and staff agreed that currency hedging should not be implemented in the passively managed portfolio, but that in the active portion of the portfolio, opportunistic hedging would be allowed as part of the manager's investment process. In response to questions from Ms. Grove and Mr. Gudorf, Ms. Lehman explained opportunistic hedging. Ms. Lehman stated that the Committee and staff were also in agreement that the SBI should utilize Morgan Stanley Capital International Index for Europe, Australia and the Far East (EAFE) as its index data source.

Ms. Lehman discussed several issues that the Committee felt warranted further study. The first issue concerns the SBI's investment restrictions regarding South Africa, liquor and tobacco. In response to a question from Ms. Grove, Mr. Bohan stated that the Committee would be working with staff to bring an implementation to the IAC and Board by June 1992. He added that the SBI's South Africa policy alone could restrict the EAFE universe by 30%. Ms. Lehman stated that the second issue to be studied further is the weighting of the Board's asset class target. She added that staff's recommendation is for 50% Europe and 50% Pacific Basin in order to assure adequate diversification, but that other possibilities would be evaluated. In response to a question from Mr. McGrath, Ms. Lehman responded that these issues should be addressed by the June 1992 Board meeting and before the SBI begins its search for active managers.

Ms. Lehman also presented the differing views of staff and the Committee regarding the management structure recommendations. She stated that the staff recommendation is for 50% passive, 25% active country/passive stock and 25% active stock with a regional mandate. She stated that the Committee is recommending 50% active country/passive stock and 50% active stock with an EAFE mandate. In response to questions from Mr. Gudorf, Ms. Lehman clarified the active country/passive stock process and stated that the Board could decide what constraints they wanted to put on a manager. Mr. Bohan suggested that rather than dictating constraints, the Board should evaluate the investment managers' style or strategy on the country allocation issue.

In response to a question from Ms. Grove, Mr. Bohan stated that some managers do specialize in certain countries, but that most managers typically have a broad international presence. He added that the managers consider both expectations for the stock market in each country as well as currency. Mr. Bicker stated that managers who specialize in specific countries are typically active managers.

In response to questions from Mr. Dayton regarding allocation percentages, Mr. Bicker noted that the only decision that needed to be made by the IAC and Board at this time involved the issue of proceeding with passive or active management. Mr. Dayton stated he was uncomfortable making a decision when there is disagreement between staff and the Committee on fundamental issues. Mr. Bohan stated that since both staff and the Committee are in agreement that a portion of the portfolio should be managed active country/passive stock, the interview process for the type of management could proceed, allowing everyone to learn in the process.

Ms. Lehman stated that staff believes passive management would provide the SBI with diversification across all major markets and management approaches, while also providing greater certainty of returns. In response to a question from Mr. Gudorf, Ms. Lehman stated that the issue of looking for a good passive manager can be done now without deciding on the exact benchmark to be used by that manager. Mr. Gudorf disagreed and said he felt the benchmark weighting would impact volatility of actual returns.

Ms. Grove noted that passive management could be considered a more conservative approach than active management because it would produce lower volatility relative to the index. She asked how the Board would evaluate active country/passive stock vs. an indexed portfolio. Mr. Bohan responded that passive managers are evaluated as to how well they track their target or index. He stated that in rising markets active managers will usually underperform and in uncertain markets active managers have the opportunity to add value. He noted that the Board needs to evaluate returns over longer periods of time and understand and accept the variability associated with short-term results. In response to a question from Ms. Grove, Mr. Bohan reported that the Committee vote was 4 to 1 in favor of active management.

In response to a question from Mr. Norstrom, Mr. Bicker stated that the issue of South Africa restrictions would be studied further and that a recommendation would come to the Board by the June meeting. Mr. Bohan added data from Richards & Tierney showed that South Africa free portfolio returns underperformed by 2.27% on an annualized basis during January 1988 - September 1991.

Mr. Dayton stated that he was concerned that the SBI has not clearly identified and stated what return expectations it hopes to achieve. Mr. Bicker agreed, but stated that the more flexible the SBI is with a manager, the higher the return expectation should be. He added that some expectations need to be laid out, but he stated they should be laid out at the time the managers are hired. Mr. Dayton disagreed. Ms. Yeomans suggested that return expectations should be agreed to by both the manager and the SBI. Ms. Growe asked if everyone agreed that the expectations were to add value, reduce risk, and outperform domestic equities. Mr. Dayton stated that he felt the Board was moving in the right direction, but that he was unsure of using historical data to predict the future. Mr. Bohan stated that it would be difficult to assign an absolute value to a return expectation and added that if you can add value and diversify at the same time, its a win-win situation. Mr. Troutman stated that the benefits of diversification should not be under-emphasized. He added that an international program would allow the SBI the opportunity to participate in a variety of economic cycles which could be beneficial. Ms. Culhane stated the benefits of diversification are documented in numerous studies and that by participating in various markets the SBI would be spreading its risk across a broader variety of asset classes.

Mr. Bohan restated the first recommendation from the Asset Allocation Committee that the SBI adopt the policy paper as its investment policy for the Assigned Risk Plan, to be reviewed again in one year. Mr. Gudorf moved approval. Mr. Eckmann seconded the motion. The motion was approved.

Mr. Bohan moved approval to adopt the staff proposal on currency hedging. He stated that this proposal included no hedging on the passive portfolio and opportunistic hedging at the active manager's discretion. Mr. Kiedrowski seconded the motion. The motion was approved.

Mr. Bohan moved approval that the SBI use EAFE as its source for international index data, noting that the index weighting would be determined at a later date. Mr. Norstrom seconded the motion. The motion was approved.

A discussion ensued regarding the appropriate wording to amend the fourth recommendation in the Committee report. Ms. Yeomans moved to proceed with manager searches as soon as possible, and that the remaining issues of asset class target weighting and final management structure should not impede the selection of active country/passive stock managers. Mr. Norstrom seconded the motion. The motion was approved.

Mr. Bohan moved to table the third international recommendation regarding management structure. Mr. McDonald seconded the motion. The motion was approved.

Mr. Dayton requested that staff solicit suggestions from IAC members on ways to improve the manager search process both for domestic and international managers. Mr. Troutman noted that the Board will need to have a willingness to stick with international managers when they are out of favor due to the increased cost of changing managers.

Mr. Norstrom said that he likes the Committee's recommendation and feels that the international component could be structured in such a way to incorporate aspects of both

active and passive management. Mr. Johnson voiced concern over the South Africa restrictions. Ms. Eller stated that the active country/passive stock strategy could be employed without restrictions on South Africa companies. Mr. Gudorf noted that he would not feel comfortable with the Committee's recommendation if the South Africa restrictions were included, since it would result in a riskier policy. Both Mr. Bohan and Mr. McDonald agreed that the SBI should carefully consider any restrictions it places on managers.

Equity Manager Search Committee

Mr. Sausen, Chair of the Equity Manager Search Committee, reported that the Committee's purpose was not only to make new manager recommendations, but also to evaluate whether Investment Advisers (IAI) and IDS Advisory (IDS) should continue to be retained as managers for the SBI. He stated that 32 firms responded to the SBI's information request and through the evaluation process, ten firms were selected to be interviewed. He added that the interviews included IAI and IDS. He reported that the Committee was making several recommendations:

1) New Managers

To hire Independence Investment Advisers and Lynch and Mayer, authorizing that each manager receive up to \$200 million in assets, with the specific initial allocation to be reviewed by the Stock and Bond Manager Committee.

2) Current Managers

To terminate the current contract with IAI, to maintain the current contract with IDS Advisory, and to reduce the size of the portfolio managed by Rosenberg Institutional to approximately \$150 million.

3) Future Actions

To monitor several of the finalist firms, create a permanent Manager Search Committee and recommend review of the Manager Continuation Policy by the IAC Stock and Bond Manager Committee.

Mr. Bicker suggested that the new managers be hired as of February 1, 1992 and be given a 16 month contract in order to put them on the same contract cycle as other active equity managers.

In response to questions regarding Rosenberg's portfolio, Mr. Bicker stated that their current allocation is \$300 million. He said that they were given additional funding earlier to provide diversification, but that this could be accomplished through the retention of the new managers being recommended and the tilted index fund.

In response to a question from Mr. McDonald regarding the Manager Continuation Policy, Mr. Sausen stated that he felt the statistically driven VAM charts could show a premature breach of the termination level if a manager employs a longer "buy and hold" investment strategy.

In response to a question from Mr. Troutman, Mr. Sausen reported that the Committee felt that the addition of a permanent Search Committee would be beneficial in continuing the manager search process in the future, in fully utilizing the broad base of information

the Committee had built during the last process and in monitoring several finalist firms for future consideration.

Mr. McDonald moved approval of all three categories of recommendations. Mr. Gudorf seconded. In response to a question from Mr. Troutman, Ms. Yeomans suggested that the motion be amended to exclude the reduction of Rosenberg's portfolio. Mr. Gudorf moved approval of the amended motion and Mr. McDonald seconded. The motion was approved. Mr. Gudorf moved approval of the recommendation that Rosenberg's portfolio be reduced to \$150 million. Mr. McDonald seconded the motion. The motion was approved. Mr. Troutman requested that the minutes reflect his dissenting vote on this issue.

Ms. Hacking, Executive Director of the Public Employees Retirement Association (PERA), distributed a package of materials prepared by the PERA office explaining the Post Retirement Fund benefit increase proposal. She stated that the PERA Board approves of this change in the benefit increase formula and is asking for IAC and Board support prior to seeking legislative changes. Mr. Erdahl, Executive Director of the Teachers Retirement Association, presented background information on the proposed change to the benefit increase formula. He stated that nearly all of the various active and retired educator groups strongly supported the new proposed formula. He explained how both the current formula and the proposed formula work and answered questions regarding how losses or shortfalls would be handled from year to year. Mr. Troutman asked for clarification regarding the level of support from the Pre'73 PERA group. Ms. Hacking confirmed that small portions of the group are against the proposal. Mr. Norstrom moved approval of the IAC endorsement of the Post Fund benefit increase proposal and the introduction of legislative changes during the 1992 session. Mr. Erdahl seconded the motion. The motion was approved. Mr. Stewart, of the Retired Educators Association (REAM), expressed his appreciation of the SBI's support regarding the proposal.

Election of IAC Chair and Vice Chair

Mr. Bicker stated that the IAC members needed to elect a new Chair and Vice Chair. Mr. Bohan moved approval of the reappointment of Ms. Yeomans as Chair and Mr. McDonald as Vice Chair. Mr. Norstrom seconded the motion. The motion was approved.

Administrative Committee Report

Ms. Yeomans stated that the Administrative Committee Report could be found in Tab D of the meeting materials. In the absence of questions or discussion on those items, she moved on to the next report.

Stock and Bond Manager Committee


Mr. Bicker stated that the Committee reviewed stock and bond manager performance and that both segments had strong performance for the quarter. He added that the Committee would be bringing recommendations to the IAC in March regarding manager allocation guidelines. Mr. Bicker also reported the results of the guaranteed investment contract (GIC) bid by the Board in October 1991. He stated that two firms, Continental Assurance and Provident National were awarded contracts, resulting in a blended rate of 6.63% on a 3 year GIC for the Supplemental Investment Fund.

Alternative Investment Committee Report

Mr. Kiedrowski stated that the Committee reviewed current strategy and held annual review sessions with three venture capital managers. He noted that both staff and the Committee were satisfied with the performance of the managers reviewed. Mr. Kiedrowski reported that the Irwin Jacob's IMR Fund would have \$500 million in commitments prior to the SBI's investment. He added that the Committee made no recommendation regarding the SBI's status as a limited partner with KKR.

The meeting was adjourned at 4:00 P.M.

Respectfully submitted,



Howard J. Bicker
Executive Director

Attachment

INTERNATIONAL EQUITY

Committee/Staff Agreements

■ **Currency Hedging Strategy**

Passive – no hedging

Active – opportunistic hedging allowed

Benchmark – U.S. \$, unhedged

■ **Index Data Source**

EAFE

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

INTERNATIONAL EQUITY

Further Study by Committee

■ **Investment Restrictions**

What impact will the SBI's restrictions have?

- **South Africa**
- **Liquor and Tobacco**

■ **Asset Class Target Weight**

How should the SBI's benchmark be weighted?

- **Capitalization**
- **50% Europe/50% Pacific**
- **Other weighting**

Recommendations on these issues will be brought to the SBI/IAC by June 1992.

INTERNATIONAL EQUITY

Management Structure Recommendations

<u>Strategy</u>	<u>Staff Recommendation</u>	<u>Committee Recommendation</u>
Passive	50%	None
Active Country/ Passive Stock	25%	50%
Active Stock	25% Regional	50% EAFE

Timeline

- Select passive or active country/passive stock manager(s) by June 1992.
- Begin search for other managers after June 1992.

INTERNATIONAL EQUITY

Active/Passive Management Discussion

Rationale for Inclusion of Passive Management:

- Diversification across markets and management approaches**
- Greater certainty of returns**
- Ease of entry**
- Lower costs**

Rational for a Large Commitment to Active Management:

- Greater opportunity to add value**
- Better downside protection in adverse markets**
- Availability of active managers with strong track records relative to EAFE**

Tab A

RETURN OBJECTIVES

Basic Retirement Funds

\$8.6 Billion Market Value

	Period Ending 12/31/91 Actual	Compared to Objective
Total Return		
Total Fund over 10 years	14.3%	10.4 percentage points above
<ul style="list-style-type: none"> ■ Exceed inflation by 3-5 percentage points 		
Total Fund over 5 years	12.4%	Equaled its objective
<ul style="list-style-type: none"> ■ Exceed composite market index 		
Stocks, Bonds, Cash over 5 years	13.0%	0.5 percentage points above
<ul style="list-style-type: none"> ■ Exceed median fund 		

Post Retirement Fund

\$6.9 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, 1991

	Active (Basics)	Retired (Post)	Total (Basics & Post)
Liability Measures			
1) Current and Future Benefit Obligation	\$14.0 billion	\$5.1 billion	\$19.1 billion
2) Accrued Liabilities	10.0	5.1	15.1
Asset Measures			
3) Current and Future Actuarial Value	\$13.9 billion	\$5.1 billion	\$19.0 billion
4) Current Actuarial Value	6.4	5.1	11.5
Funding Ratios			
Future Obligations vs. Future Assets (3 ÷ 1)	99%	100%	99%
Accrued Liabilities vs. Current Actuarial Value (4 ÷ 2)*	64	100	76*

* 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.

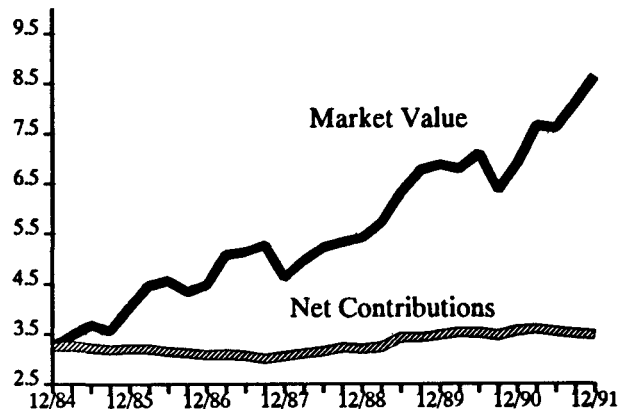
EXECUTIVE SUMMARY

Basic Retirement Funds

Asset Growth

The market value of the Basic Funds increased 6.4% during the fourth quarter of 1991. The increase was due to strong performance in stocks and bonds.

\$ Billions



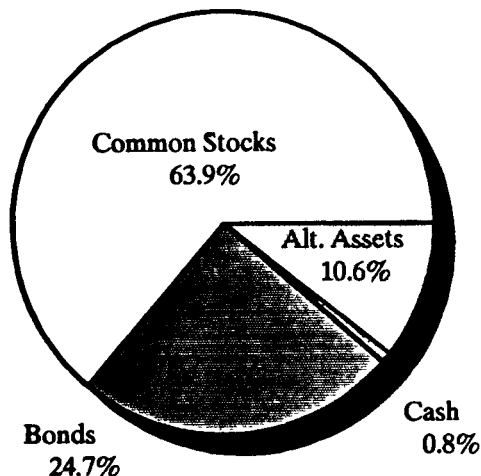
**Asset Growth
During Fourth Quarter 1991
(Millions)**

Beginning Value	\$8,120
Net Contributions	-32
Investment Return	551
Ending Value	\$8,639

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 stock percentage increased during the quarter due to strong performance relative to the other asset classes.



**Actual Asset Mix
12/31/91**

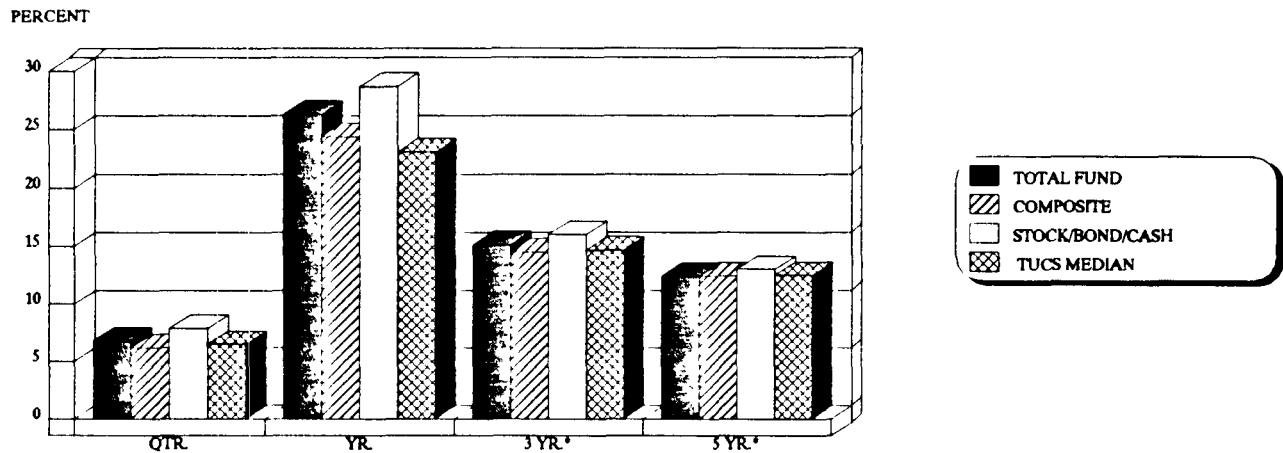
	Policy Asset Mix	Actual Mix 12/31/91	Actual Market Value (Millions)
Stocks	60.0%	63.9%	\$5,521
Bonds	24.0	24.7	2,133
Alternative Assets	15.0	10.6	917
Unallocated Cash	1.0	0.8	68
	100.0%	100.0%	\$8,639

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 12/31/91			
	Qtr.	Yr.	*(Annualized)	
			3 Yr.	5 Yr.
Total Fund	6.8%	26.3%	15.1%	12.4%
Composite Index **	6.2	24.4	14.5	12.4
Stocks, Bonds and Cash Only	7.9	28.7	16.0	13.0
TUCS Median Balanced Fund***	6.5	23.1	14.7	12.5

** 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 and year.

Stock Segment	(Annualized)			
	Qtr.	Yr.	3 Yr.	5 Yr.
Stock Segment	9.0%	34.3%	17.0%	13.9%
Wilshire 5000	8.7	34.2	17.6	14.4

Bond Segment Performance

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

Bond Segment	(Annualized)			
	Qtr.	Yr.	3 Yr.	5 Yr.
Bond Segment	5.4%	17.1%	13.2%	10.0%
Salomon Broad Index	5.0	16.0	13.1	9.9

EXECUTIVE SUMMARY

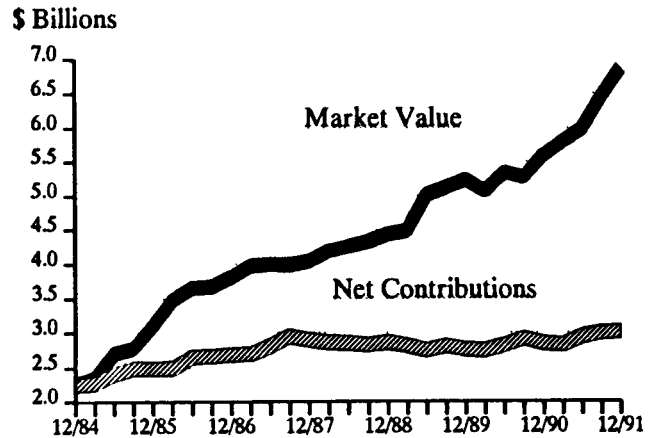
Post Retirement Fund

Asset Growth

The market value of the Post Fund increased by 6.2% during the fourth quarter of 1991. Assets increased primarily due to strong stock and bond performance during the quarter.

Asset Growth
During Fourth Quarter 1991
(Millions)

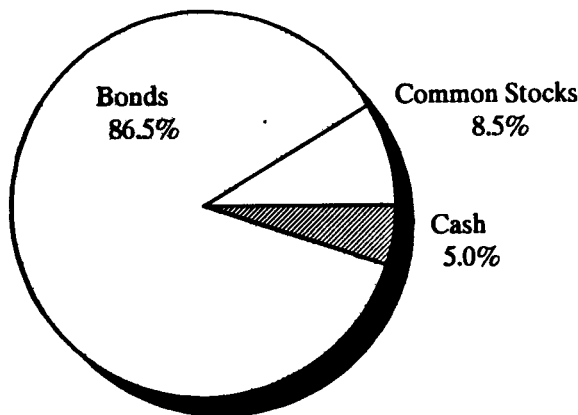
Beginning Value	\$6,448
Net Contributions	9
Investment Return	398
Ending Value	\$6,855



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



Actual Asset Mix
12/31/91

	Actual Market Value (Millions)	Asset Mix 12/31/91
Common Stocks	\$586	8.5%
Bonds	5,930	86.5
Unallocated Cash	339	5.0
	<hr/> \$6,855	<hr/> 100.0%

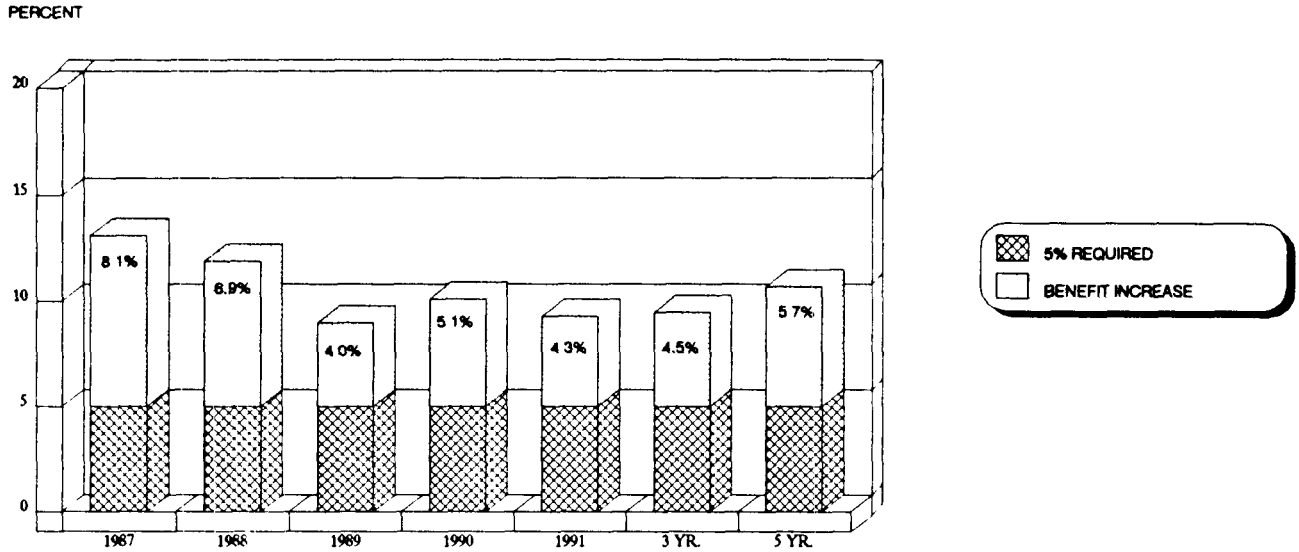
Post Fund (Con't.)

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 trailed its benchmark for the latest quarter but exceeded it for the latest year.

	Period Ending 12/31/91 (Annualized)			
	Qtr.	Yr.	3 Yr.	5 Yr.
Stock Segment	6.0%	37.0%	17.3%	12.2%
Post Fund Benchmark	6.3	34.0	14.1	N.A.

Bond Segment Performance

At the close of the quarter, the dedicated bond portfolio had a current yield of 7.39% and average duration of 7.60 years. The market value of the dedicated bond portfolio was \$5.8 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 6.2% return for the quarter and a 19.4% 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 invested in a balanced portfolio of common stocks and bonds. The actual asset mix will fluctuate in response to changes in the Plan's liability stream.

	12/31/91 Target	12/31/91 Actual
Stocks	15.0%	15.2%
Bonds	85.0	80.9
Unallocated Cash	0.0	3.9
Total	100.0%	100.0%

Investment Management

External management is utilized by the Assigned Risk Plan. The entire fund is managed by Voyager Asset Management. The portfolio was transferred from the Department of Commerce to the SBI on May 1, 1991.

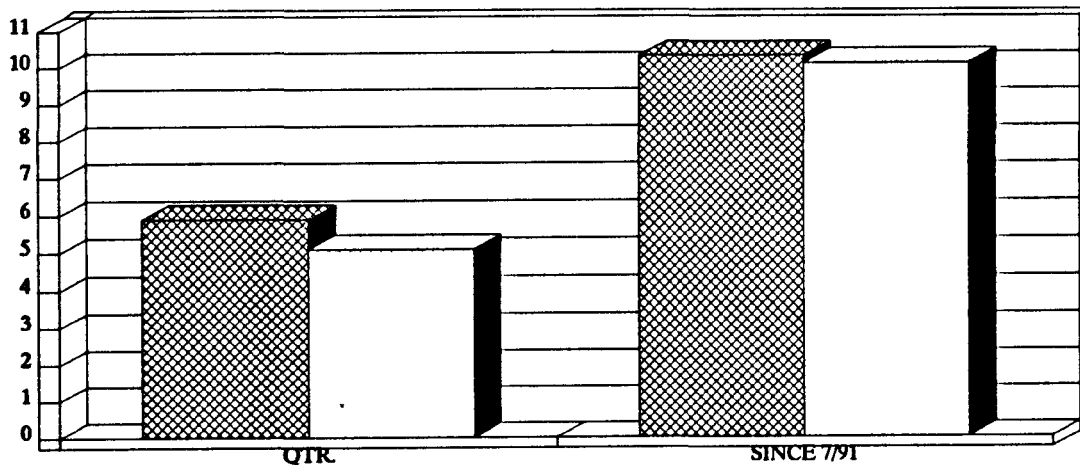
Performance Benchmarks

A custom benchmark has been established for the fixed income portfolio. It reflects the duration of the liability stream and the long-term sector allocation of Voyager Asset Management. Currently, the equity benchmark is the S&P500. Staff and the manager are reviewing a custom benchmark for the equities, to replace the S&P500. The total fund benchmark is a combination of the fixed income and equity benchmarks, weighted according to the asset allocation target.

Market Value

On December 31, 1991 the market value of the Assigned Risk Plan was \$333 million.

PERCENT

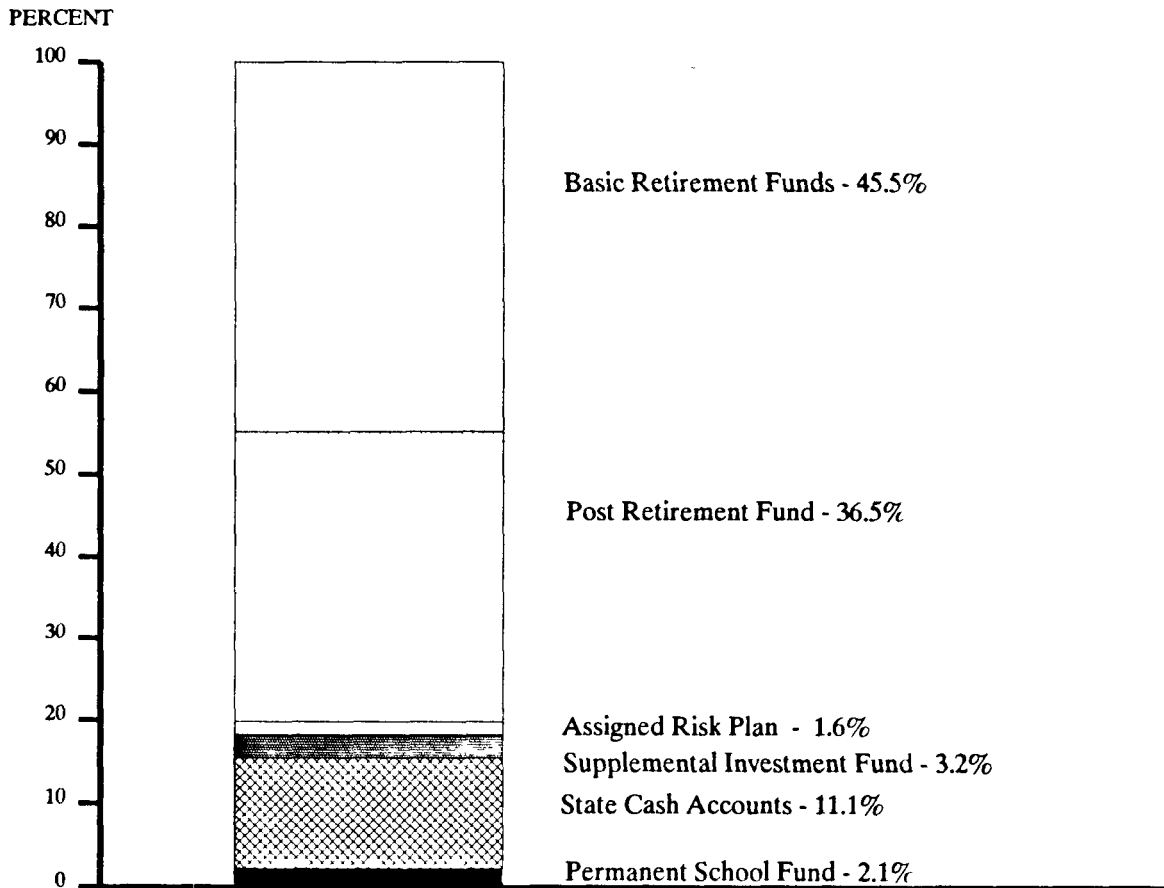


Period Ending 12/31/91

	Qtr.	Since 7/1/91
Total Fund Composite Index	5.9%	10.3%
Equity Segment Benchmark	10.1	12.4
Bond Segment Benchmark	8.4	14.2
Equity Segment Benchmark	5.3	10.2
Bond Segment Benchmark	4.3	8.9

EXECUTIVE SUMMARY

Funds Under Management



	12/31/91 Market Value (Billions)
Basic Retirement Funds	\$8.6
Post Retirement Fund	6.9
Assigned Risk Plan	0.3
Supplemental Investment Fund	0.6
State Cash Accounts	2.1
Permanent School Fund	0.4
Total	\$18.9

MINNESOTA STATE BOARD OF INVESTMENT

QUARTERLY INVESTMENT REPORT

Fourth Quarter 1991

(October 1, 1991 – December 31, 1991)

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FINANCIAL MARKETS REVIEW

STOCK MARKET

Stock prices increased significantly during the quarter. During October and November the stock market fluctuated in response to current economic reports or Congressional activity. In December the market rose dramatically due to further decreases in short-term interest rates by the Federal Reserve. The market interpreted the Federal Reserve's actions as a signal that it is serious about reviving the economy and is not worried that its actions will increase inflation dramatically.

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

- Large Value 4.8%
- Small Value 8.0
- Large Growth 14.2
- Small Growth 9.8

The Wilshire 5000 increased 34.2% during the latest year.

BOND MARKET

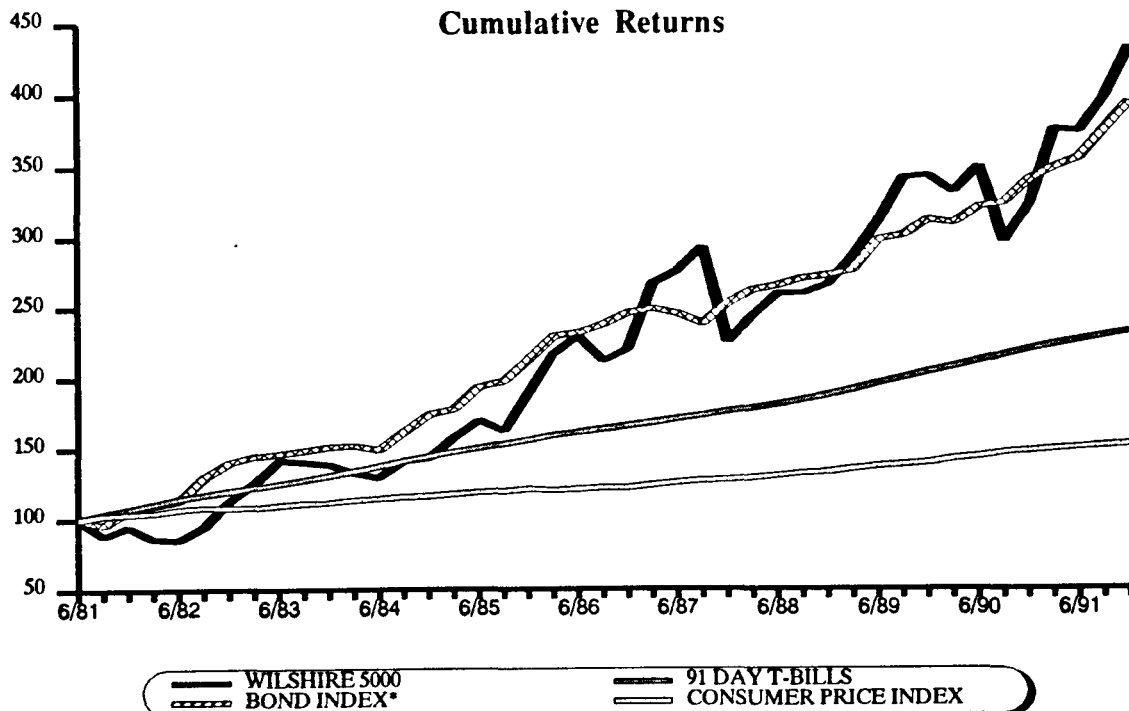
The bond market recorded a strong positive rate of return for the quarter. Bond prices increased each month due to the easing monetary policy by the Federal Reserve which caused both long and short interest rates to drop. However, the majority of the price appreciation occurred in December when the Federal Reserve made further cuts in short-term rates.

Overall, the Salomon Brothers Broad Investment Grade (BIG) Index increased 5.0% for the quarter. The Salomon BIG sector returns for the quarter were:

- Treasury/Agency 5.3%
- Corporates 5.2
- Mortgages 4.4

Lastly, 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. Many real estate portfolios have experienced significant writedowns over the last year, reflecting the weak real estate markets. Longer term, the cut in the discount rate and a significant decline in construction activity are both favorable developments for the real estate market.

VENTURE CAPITAL

Calendar year 1991 was a stellar year for initial public offerings of venture-backed companies. Over one hundred venture-backed companies tapped the new issues market and raised a total of almost \$3.8 billion. The previous record for venture-backed initial public offerings was 1983, when a similar number of venture-backed companies raised approximately \$3.0 billion in the public equity markets.

RESOURCE FUNDS

Over the past year and a half 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 \$19.50 per barrel.

Spot prices of natural gas reached a high of approximately \$2.00 per MCF (thousand cubic feet) in October 1990 compared to a recent price of approximately \$1.10 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.

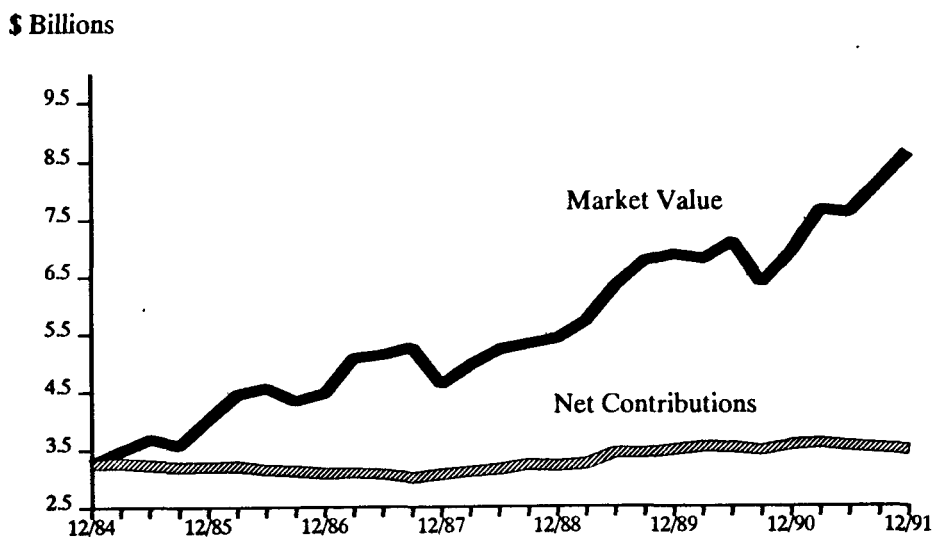
The Board has established three return objectives for the Basic Funds:

- 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 6.4% during the fourth quarter of 1991. The

increase was due to strong performance in both stocks and bonds.



	In Millions									
	12/86	12/87	12/88	12/89	12/90	3/91	6/91	9/91	12/91	
Beginning Value	\$4,030	\$4,474	\$4,628	\$5,420	\$6,382	\$6,919	\$7,656	\$7,610	\$8,120	
Net Contributions	-113	-26	146	269	97	29	-50	-39	-32	
Investment Return	557	180	646	1,186	440	708	4	549	551	
Ending Value	\$4,474	\$4,628	\$5,420	\$6,875	\$6,919	\$7,656	\$7,610	\$8,120	\$8,639	

BASIC RETIREMENT FUNDS

Asset Mix

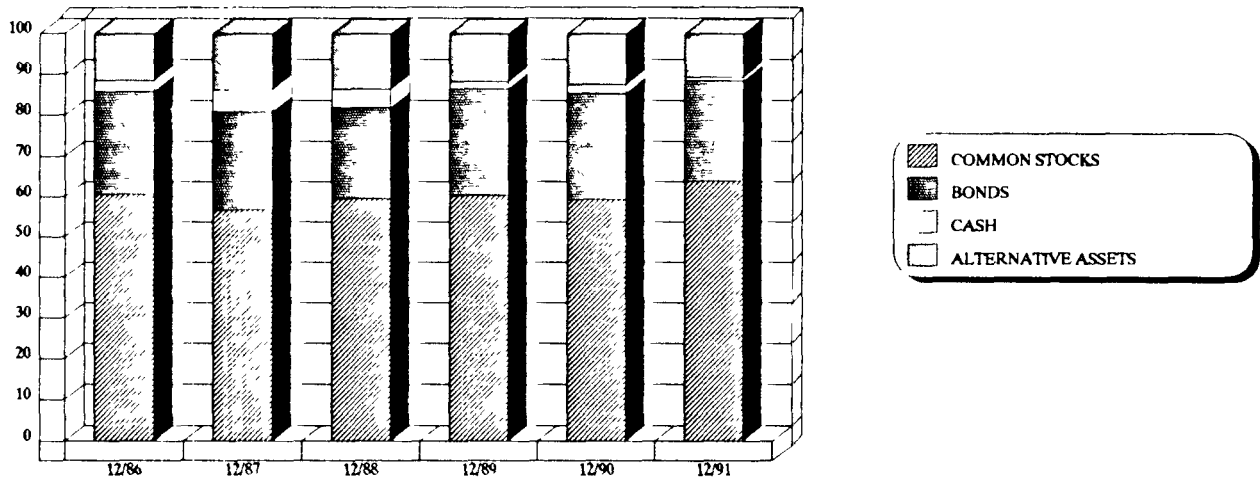
Based on the Basic Funds' investment objectives and the expected long run performance of the capital markets, the Board has adopted the following long-term policy asset allocation for the Basic Funds:

The stock percentage increased during the quarter due to strong performance relative to the other asset classes.

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.

PERCENT



	Last Five Years					Latest Qtrs.			
	12/86	12/87	12/88	12/89	12/90	3/91	6/91	9/91	12/91
Stocks	60.6%	56.7%	59.5%	60.2%	59.1%	62.4%	62.1%	62.3%	63.9%
Bonds	25.3	24.2	22.4	26.4	26.2	24.4	25.0	24.8	24.7
Real Estate	8.3	9.5	9.0	7.5	7.0	5.9	6.0	5.6	4.8
Venture Capital	1.8	2.8	3.1	2.8	4.2	3.8	3.9	5.1	4.7
Resource Funds	1.4	1.4	1.5	1.4	1.5	1.4	1.5	1.4	1.1
Unallocated Cash	2.6	5.4	4.5	1.7	2.0	2.1	1.5	0.8	0.8
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

BASIC RETIREMENT FUNDS

Total Fund Performance vs. Standards

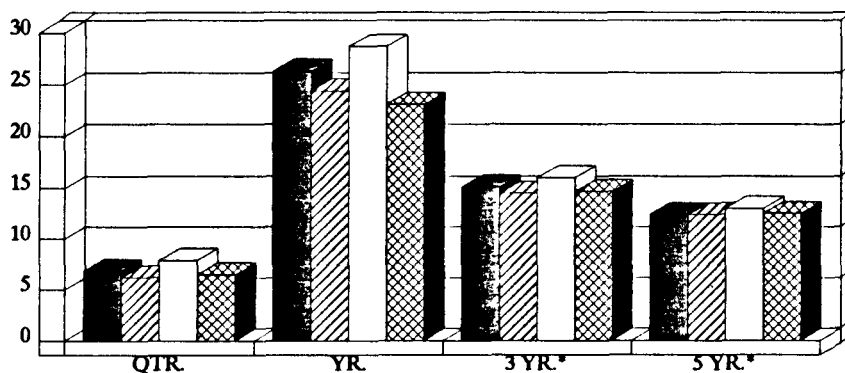
The Basic Funds' long-term rate of return performance is evaluated relative to two specific benchmarks:

- **Composite Index.** The returns provided by the total portfolio are expected to exceed those derived from a composite of market indices, weighted in the same proportion as the Basic Funds' policy asset allocation. As of 7/1/89, the composite index is weighted: 60% Wilshire 5000 Stock Index, 24% Salomon Broad Bond Index, 10% 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 (33rd percentile) of the TUCS universe for the quarter. In addition, it ranked in the top quartile (21st percentile) for the latest year and the top half (37th percentile) for the last five years.

PERCENT



TOTAL FUND
 COMPOSITE
 STOCK/BOND/CASH
 TUCS MEDIAN

	Period Ending 12/31/91			
	Qtr.	Yr.	3 Yr.	5 Yr.
Total Fund	6.8%	26.3%	15.1%	12.4%
Composite Index	6.2	24.4	14.5	12.4
Stocks, Bonds and Cash Only	7.9	28.7	16.0	13.0
TUCS Median Balanced Fund	6.5	23.1	14.7	12.5

BASIC RETIREMENT FUNDS

Segment Performance vs. Standards

Stock Segment

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

	Qtr.	Yr.	Annualized	
			3 Yrs.	5 Yrs.
Stock Segment	9.0%	34.3%	17.0%	13.9%
Wilshire 5000	8.7	34.2	17.6	14.4

Bond Segment

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

	Qtr.	Yr.	Annualized	
			3 Yrs.	5 Yrs.
Bond Segment	5.4%	17.1%	13.2%	10.0%
Salomon Bond Index	5.0	16.0	13.1	9.9

Real Estate Segment

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

	Qtr.	Yr.	Annualized	
			3 Yrs.	5 Yrs.
Real Estate Segment	-3.3%	-5.5%	0.5%	3.3%
Real Estate Index	-3.3	-8.0	-1.8	2.0
Inflation	0.5	3.1	4.6	4.5

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.

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.

	Qtr.	Yr.	Annualized	
			3 Yrs.	5 Yrs.
Venture Capital Segment	0.8%	42.2%	20.6%	18.9%
Resource Fund Segment	-2.3	4.5	3.6	7.0

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

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:

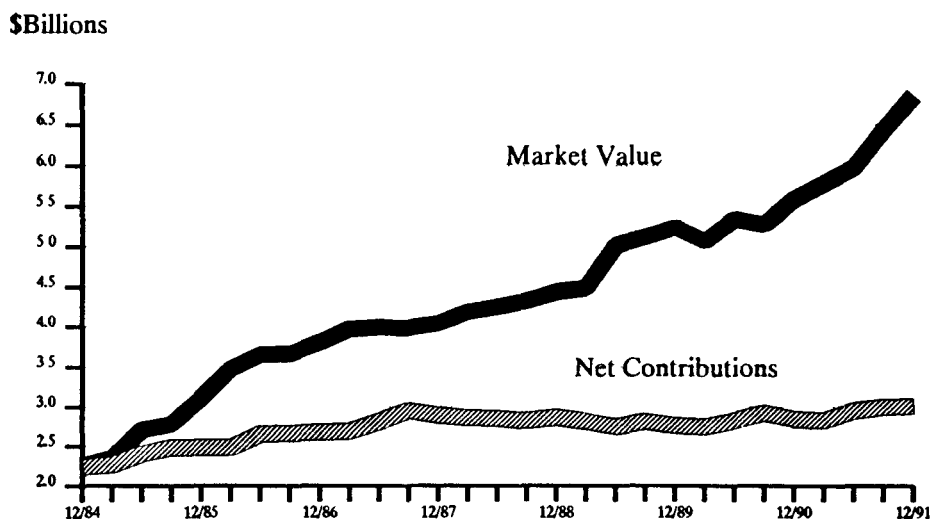
- generate 5% realized earnings to maintain current benefits.
- generate at least 3% additional realized earnings to provide benefit increases.

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 6.2% during the fourth 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	12/91	
Beginning Value	\$3,107	\$3,808	\$4,047	\$4,434	\$5,278	\$5,590	\$5,790	\$5,976	\$6,448	
Net Contributions	199	207	-27	25	-72	-20	119	54	9	
Investment Return	502	32	414	779	384	220	67	418	398	
Ending Value	\$3,808	\$4,047	\$4,434	\$5,238	\$5,590	\$5,790	\$5,976	\$6,448	\$6,855	

POST RETIREMENT FUND

Asset Mix

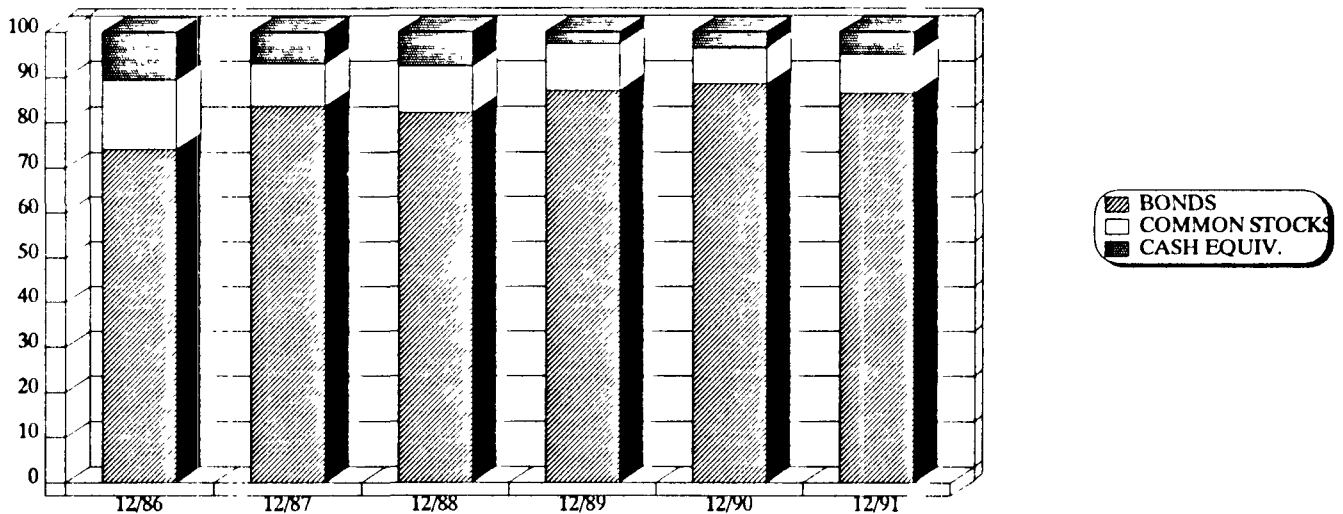
The Board has designed the asset mix of the Post Fund to generate the sizable stable earnings stream necessary to finance monthly payments to retirees.

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

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.

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

PERCENT



	Last Five Years					Latest Qtrs.			
	12/86	12/87	12/88	12/89	12/90	3/91	6/91	9/91	12/91
Bonds	74.2%	83.7%	82.3%	87.1%	88.5%	87.6%	84.7%	86.7%	86.5%
Stocks	15.1	9.3	10.1	10.2	7.9	9.0	8.7	8.6	8.5
Unallocated Cash	10.7	7.0	7.6	2.7	3.6	3.4	6.6	4.7	5.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

POST RETIREMENT FUND

Total Fund Performance

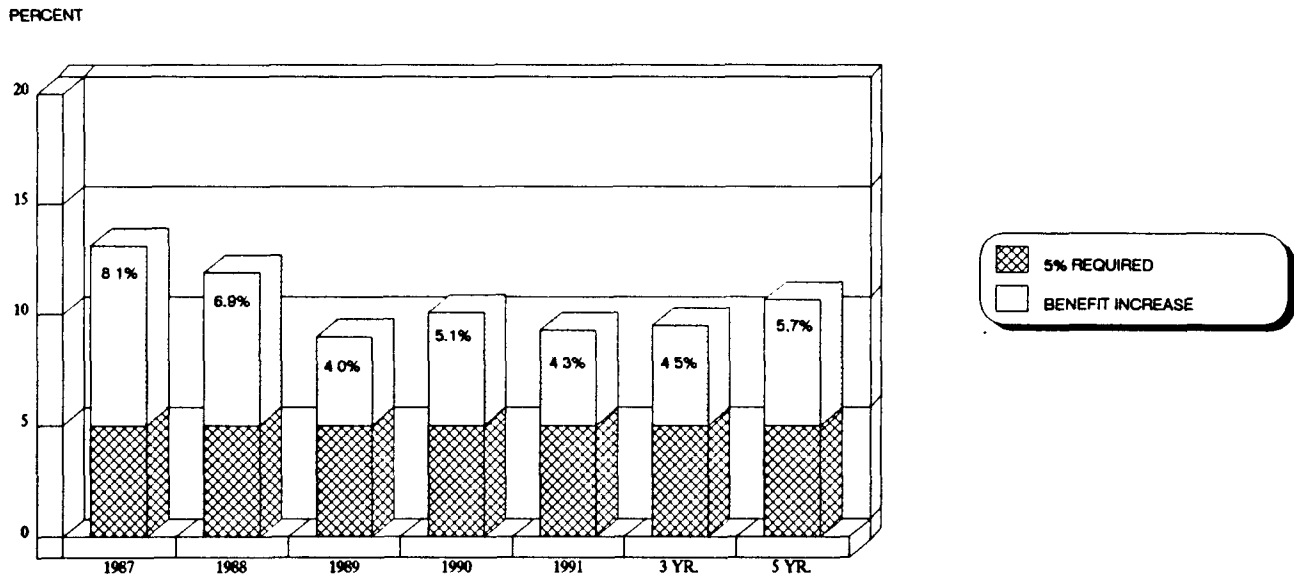
The ability of the Post Fund to maintain current benefit levels and provide future benefit increases depends upon its earnings. State statutes define earnings for the Post Fund as interest and dividend income as well as realized equity and fixed income capital gains (or losses). Unrealized capital gains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

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

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

Realized Earnings

Fiscal Years 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 trailed its benchmark for the latest quarter but exceeded it for the latest year.

	Period Ending 12/31/91			
		(Annualized)		
	Qtr.	Yr.	3 Yrs.	5 Yrs.
Stock Segment	6.0%	37.0%	17.3%	12.2%
Post Fund Benchmark	6.3	34.0	14.1	N.A.

Bond Segment Performance

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

The Post Fund's bond portfolio provided a 6.2% total rate of return for the quarter and a 19.4% return for the year. This performance is consistent with the bond portfolio's design. The Post Fund's dedicated bond portfolio is structured so that portfolio income and maturities match the Fund's liability stream. As a result, the duration of the dedicated bond portfolio exceeds that of the bond market. Consequently, on a total return basis, the portfolio can be expected to underperform the bond market in down periods and outperform the market in up periods.

Dedicated Bond Portfolio Statistics	
12/31/91	
Value at Market	\$ 5,829,729,468
Value at Cost	5,089,328,801
Average Coupon	8.53%
Current Yield	7.39
Yield to Maturity	7.95
Current Yield at Cost	8.13
Time to Maturity	16.14 Years
Average Duration	7.60 Years
Average Quality Rating	AAA
Number of Issues	455

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.

Investment Management

External management is utilized by the Assigned Risk Plan. The entire fund is managed by Voyager Asset Management.

Asset Mix

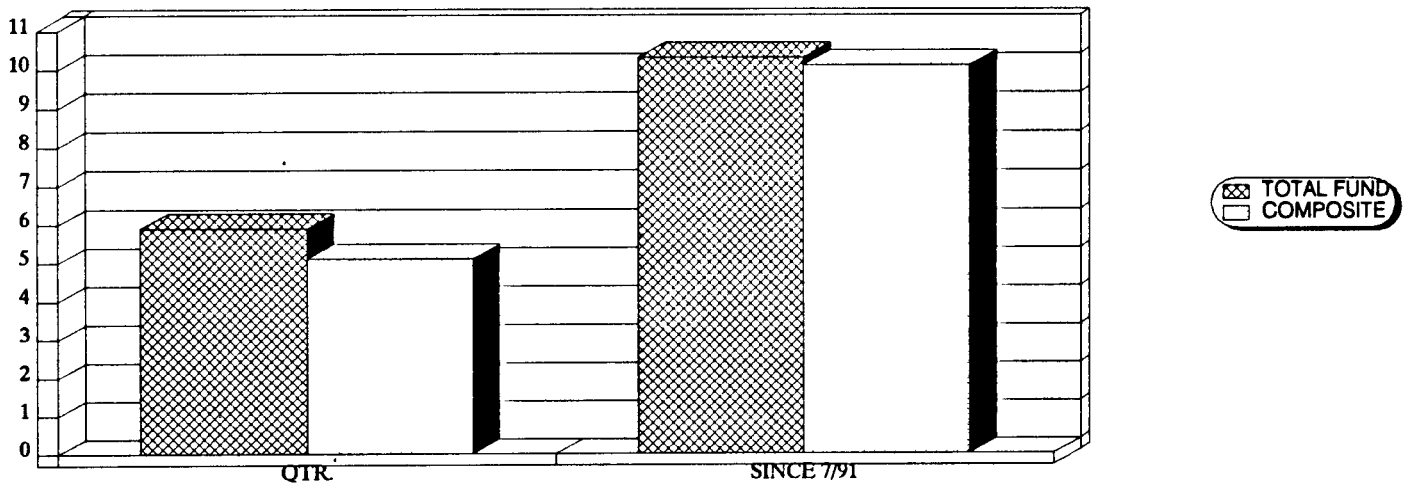
The Assigned Risk Plan is invested in a balanced portfolio of common stocks and bonds. The actual asset mix will fluctuate in response to changes in the Plan's liability stream.

Market Value

On December 31, 1991 the market value of the Assigned Risk Plan was \$ 333 million.

	12/31/91 Target	12/31/91 Actual
Stocks	15.0%	15.2%
Bonds	85.0	80.9
Unallocated Cash	0.0	3.9
Total	100.0%	100.0%

PERCENT



Period Ending 12/31/91

	Qtr.	Since 7/1/91
Total Account	5.9%	10.3%
Composite	5.1	10.1
Equity Segment	10.1	12.4
Wilshire 5000	8.4	14.2
Bond Segment	5.3	10.2
Benchmark	4.3	8.9

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 December 31, 1991 the market value of the entire fund was \$570 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.

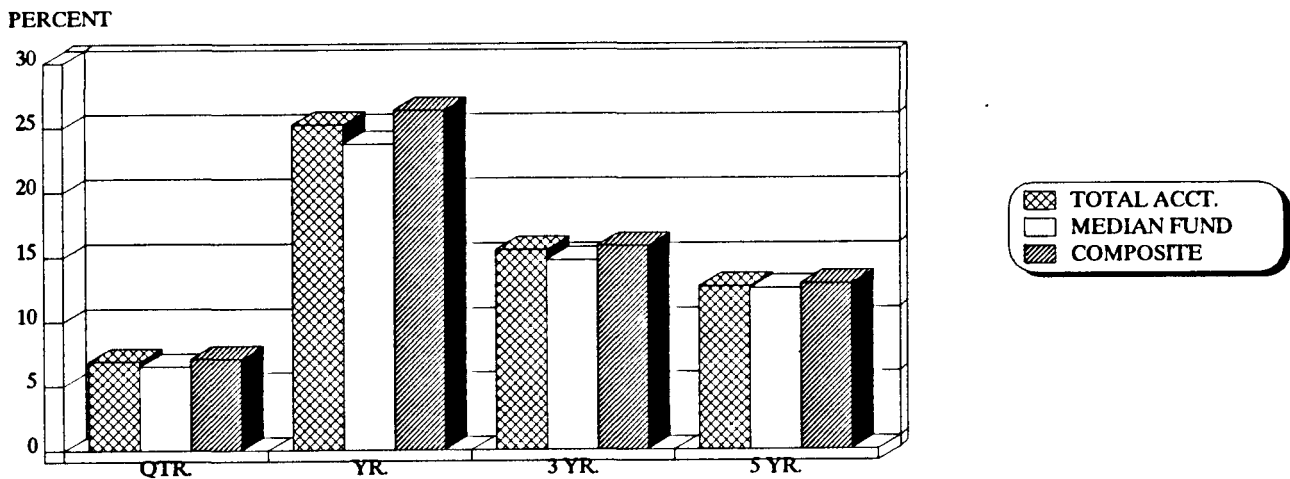
Investment Management

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

Market Value

On December 31, 1991 the market value of the Income Share Account was \$303 million.

	Target	Actual
Stocks	60.0%	63.0%
Bonds	35.0	26.5
Unallocated Cash	5.0	10.5
	100.0%	100.0%



Period Ending 12/31/91

	Annualized			
	Qtr.	Yr.	3 Yr.	5 Yr.
Total Account	6.9%	25.2%	15.5%	12.7%
Median Fund*	6.5	23.7	14.7	12.5
Composite**	7.1	26.3	15.8	12.9
Equity Segment	8.7	33.8	17.1	14.0
Wilshire 5000	8.7	34.2	17.6	14.4
Bond Segment	4.9	15.1	12.9	10.4
Salomon Bond Index	5.0	16.0	13.1	9.9

* 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.

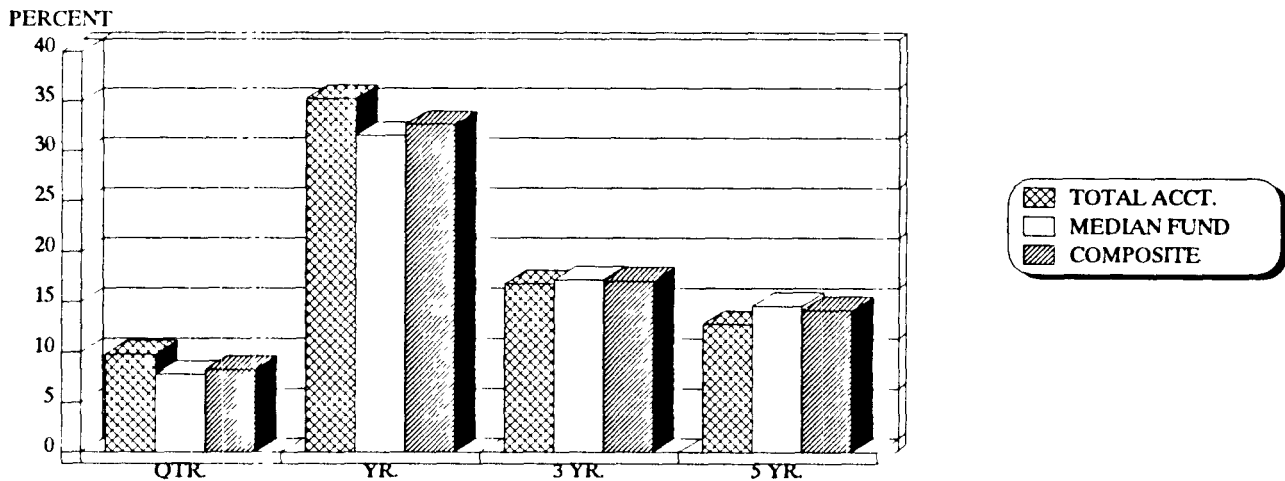
Investment Management

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

Market Value

On December 31, 1991 the market value of the Growth Share Account was \$87 million.

	Target	Actual
Stocks	95.0%	97.1%
Unallocated Cash	5.0	2.9
	100.0%	100.0%



	Period Ending 12/31/91			
	Qtr.	Yr.	3 Yr.	5 Yr.
Total Account	9.8%	35.3%	16.8%	12.8%
Median Fund*	7.8	31.6	17.2	14.6
Composite**	8.3	32.7	17.1	14.2
Equity Segment	10.1	37.0	17.3	13.1
Wilshire 5000	8.7	34.2	17.6	14.4

* 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.

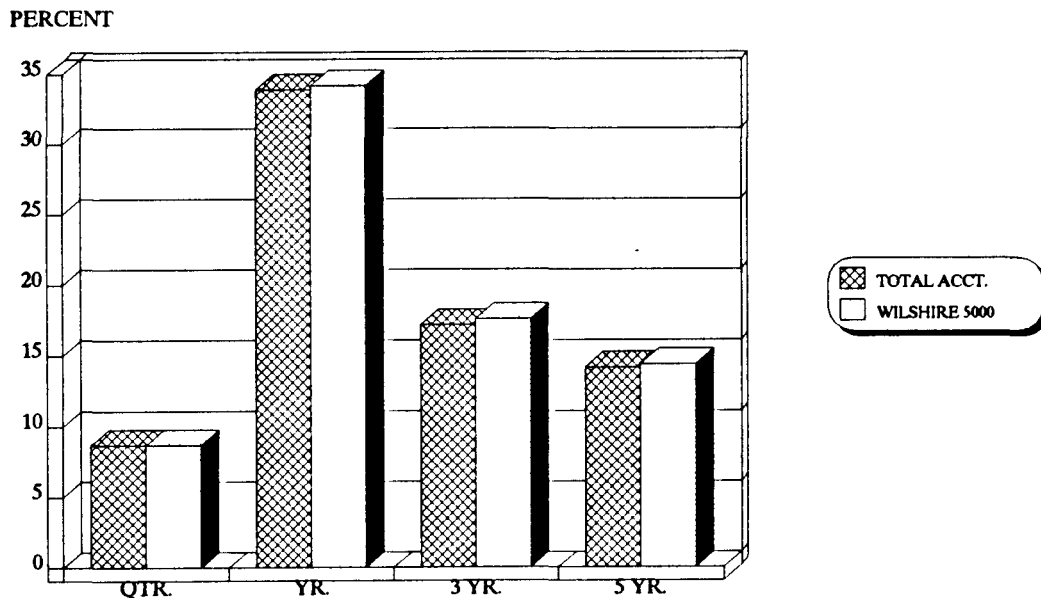
The Account is invested 100% in common stocks.

Investment Management

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

Market Value

On December 31, 1991 the market value of the Common Stock Index Account was \$22 million.



	Period Ending 12/31/91			
	Qtr.	Yr.	3 Yr.	5 Yr.
Total Account	8.7%	33.9%	17.2%	14.2%
Wilshire 5000	8.7	34.2	17.6	14.4

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.

Investment Management

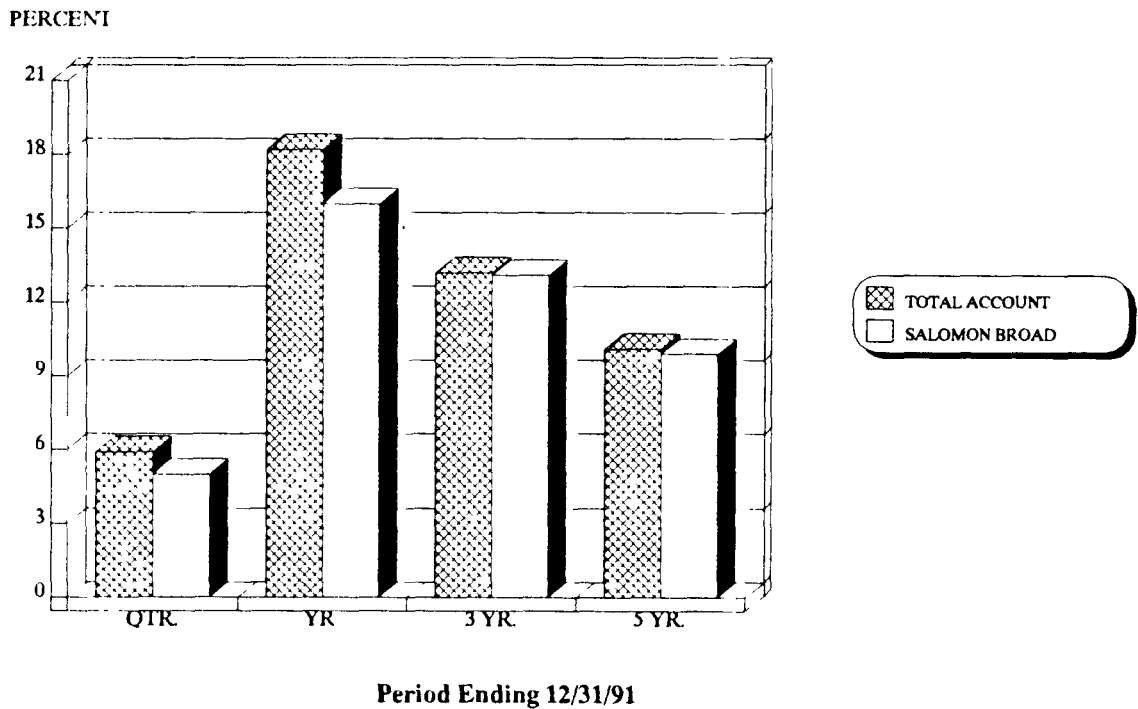
The entire Account is managed by the same group of active external bond managers utilized by the Basic Retirement Funds.

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.

Market Value

On December 31, 1991 the market value of the Bond Market Account was \$11 million.



	Annualized			
	Qtr.	Yr.	3 Yr.	5 Yr.
Total Account	5.9%	18.2%	13.2%	10.1%
Salomon Broad	5.0	16.0	13.1	9.9

SUPPLEMENTAL INVESTMENT FUND

Money Market Account

Investment Objective

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

Asset Mix

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

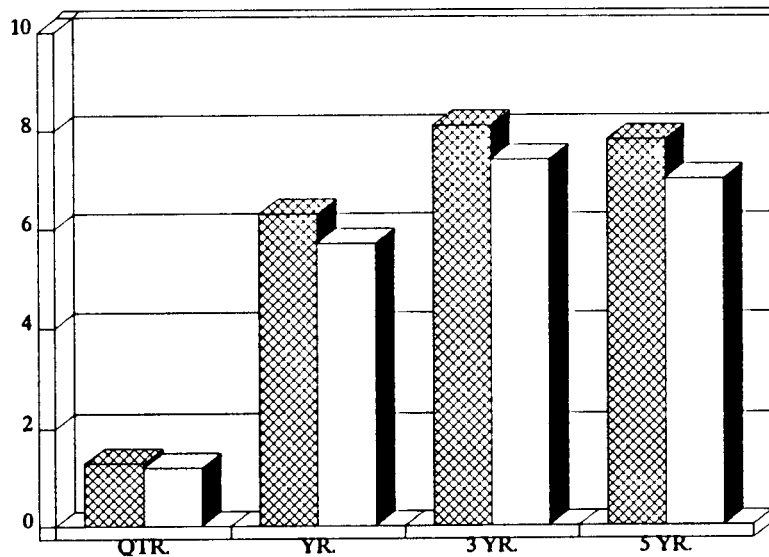
Investment Management

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

Market Value

On December 31, 1991 the market value of the Money Market Account was \$80 million.

PERCENT



Period Ending 12/31/911

	Annualized			
	Qtr.	Yr.	3 Yr.	5 Yr.
Total Account	1.3%	6.3%	8.1%	7.8%
91 Day T-Bills	1.2	5.7	7.4	6.9

SUPPLEMENTAL INVESTMENT FUND

Guaranteed Return Account

Investment Objectives

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

Asset Mix

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

Investment Management

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

Market Value

On December 31, 1991 the market value of the Guaranteed Return Account was \$67 million.

Contract Period	Annual Effective Interest Rate	Manager
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)
Nov. 1, 1991 - Oct. 31, 1994	6.634%	Continental Assurance/ 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 cash position decreased during the quarter due to a distribution of income from the fund. 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%	94.6%
Unallocated Cash	5.0	5.4
Total	100.0%	100.0%

Investment Management

The entire fund is managed by the SBI investment staff.

Asset Growth

The market value of the Permanent School Fund's assets increased 0.3% during the fourth quarter. Withdrawals for the quarter offset relatively good performance results.

**Asset Growth
During Fourth Quarter 1991
(Millions)**

Beginning Value	\$420.2
Net Contributions	-21.1
Investment Return	22.5
Ending Value	\$421.6

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 8.69%, 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
12/31/91**

Value at Market	\$391,817,308
Value at Cost	349,940,267
Average Coupon	9.13%
Current Yield	8.69
Yield to Maturity	8.25
Current Yield at Cost	9.17
Time to Maturity	16.08 Years
Average Duration	7.01 Years
Average Quality Rating	AAA
Number of Issues	131

STATE CASH ACCOUNTS

Description

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

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

- **Trust Fund Pool** contains the cash balances of retirement-related accounts managed internally and cash balances in the Permanent School Fund.
- **Treasurer's Cash Pool** contains the cash balances of special or dedicated accounts necessary for the operation of certain State agencies and the balance of the Invested Treasurer's Cash.

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

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

Investment Objectives

- **Safety of Principal.** To preserve capital.
- **Competitive Rate of Return.** To provide a high level of current income.
- **Liquidity.** To meet cash needs without the forced sale of securities at a loss.

Asset Mix

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

Investment Management

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

Performance

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

Period Ending 12/31/91

	Market Value (Millions)	Qtr.	Yr.	3 Yrs. Annualized
Treasurer's Cash Pool	\$1,658	1.8%	7.9%	8.7%
Trust Fund Cash Pool	350	1.5	6.7	8.2
91-Day T-Bills		1.2	5.7	7.4

Tab B

PORTFOLIO STATISTICS

	PAGE
I. Composition of State Investment Portfolios 12/31/91	1
II. Cash Flow Available for Investment 6/30/91 - 12/31/91	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 DECEMBER 31, 1991
(in Millions)

	Cash And		Bonds		Stocks		Alternative	
	Cash And Short Term Securities		Internal	External	Internal	External	Assets	Total
BASIC RETIREMENT FUNDS:								
Teachers Retirement Fund	\$32,030 0.82%	\$0	\$965,228 24.61%	\$0	\$2,507,098 63.94%	\$416,827 10.63%	\$3,921,183 100%	
Public Employees Retirement Fund	\$170 0.01%	\$0	\$482,586 24.81%	\$0	\$1,254,104 64.46%	\$208,510 10.72%	\$1,945,370 100%	
State Employees Retirement Fund	\$20,104 1.20%	\$0	\$412,711 24.52%	\$0	\$1,072,007 63.69%	\$178,257 10.59%	\$1,683,079 100%	
Public Employees Police & Fire Fund	\$12,840 1.67%	\$0	\$188,148 24.40%	\$0	\$488,709 63.39%	\$81,265 10.54%	\$770,962 100%	
Highway Patrol Retirement Fund	\$1,341 1.09%	\$0	\$30,249 24.55%	\$0	\$78,571 63.76%	\$13,065 10.60%	\$123,226 100%	
Judges Retirement Fund	\$52 0.89%	\$0	\$1,438 24.60%	\$0	\$3,735 63.89%	\$621 10.62%	\$5,846 100%	
Public Employees P.F. Consolidated	\$86 0.08%	\$0	\$31,828 31.11%	\$4,995 4.88%	\$56,070 54.81%	\$9,324 9.12%	\$102,303 100%	
Correctional Employees Retirement	\$1,188 1.37%	\$0	\$21,299 24.48%	\$0	\$55,323 63.58%	\$9,199 10.57%	\$87,009 100%	
POST RETIREMENT FUND	\$339,734 4.95%	\$5,929,673 86.50%	\$0	\$586,005 8.55%	\$0	\$0	\$6,855,412 100%	

	Cash And		Bonds		Stocks		Alternative	
	Short Term	Securities	Internal	External	Internal	External	Assets	Total
MINNESOTA SUPPLEMENTAL FUNDS:								
Income Share Account	\$31,872	10.52%	\$80,172	\$0	\$0	\$190,748	\$0	\$302,792
			26.48%			63.00%		100%
Growth Share Account	\$2,487	2.87%	\$0	\$0	\$0	\$84,306	\$0	\$86,793
						97.13%		100%
Money Market Account	\$79,879	100%	\$0	\$0	\$0	\$0	\$0	\$79,879
								100%
Common Stock Index Account	\$0		\$0	\$0	\$0	\$21,962	\$0	\$21,962
						100%		100%
Bond Market Account	\$0		\$0	\$11,313	\$0	\$0	\$0	\$11,313
				100%				100%
Guaranteed Return Account	\$0		\$0	\$67,371	\$0	\$0	\$0	\$67,371
				100%				100%
TOTAL RETIREMENT FUNDS								
	\$521,783	3.25%	\$6,009,845	\$2,212,171	\$591,000	\$5,812,633	\$917,068	\$16,064,500
			37.41%	13.77%	3.68%	36.18%	5.71%	100%
ASSIGNED RISK PLAN	\$13,033	3.91%	\$269,804	\$0	\$50,600	\$0	\$0	\$333,437
			80.92%		15.17%			100%
PERMANENT SCHOOL FUND	\$22,604	5.36%	\$398,965	\$0	\$0	\$0	\$0	\$421,569
			94.64%					100%
TREASURERS CASH	\$1,657,797	100%	\$0	\$0	\$0	\$0	\$0	\$1,657,797
								100%
HOUSING FINANCE AGENCY	\$241,168	100%	\$0	\$0	\$0	\$0	\$0	\$241,168
								100%
MINNESOTA DEBT SERVICE FUND	\$26,320	100%	\$0	\$0	\$0	\$0	\$0	\$26,320
								100%
MISCELLANEOUS ACCOUNTS	\$160,073	100%	\$0	\$0	\$0	\$0	\$0	\$160,073
								100%
GRAND TOTAL								
	\$2,642,778	13.98%	\$6,678,614	\$2,212,171	\$641,600	\$5,812,633	\$917,068	\$18,904,864
			35.33%	11.70%	3.39%	30.75%	4.85%	100%

**STATE OF MINNESOTA
STATE BOARD OF INVESTMENT**

**Net Cash Flow Available For Investment
October 1, 1991 - December 31, 1991**

Teachers Retirement Fund	\$ -0-
Public Employees Retirement Fund	(24,000,000.00)
State Employees Retirement Fund	(27,416,000.00)
Public Employees Police & Fire	8,000,000.00
Highway Patrol Retirement Fund	(2,127,000.00)
Judges Retirement Fund	(1,432,000.00)
Public Employees P&F Consolidated	14,036,756.07
Correctional Employees Retirement Fund	1,223,000.00
Post Retirement Fund	8,948,157.73
Supplemental Retirement Fund - Income	5,197,604.48
Supplemental Retirement Fund - Growth	(618,038.07)
Supplemental Retirement Fund - Money Market	(7,077,445.19)
Supplemental Retirement Fund - Index	2,831,452.81
Supplemental Retirement Fund - Bond Market	1,059,817.27
Supplemental Retirement Fund - Guaranteed	6,446.27
 Total Retirement Funds Net Cash Flow	 \$(21,367,248.63)
 Assigned Risk Plan	 8,711,686.00
 Permanent School Fund	 (21,097,279.87)
 Total Net Cash Flow	 \$(33,752,842.50)

**STATE OF MINNESOTA
STATE BOARD OF INVESTMENT**

**Transaction and Asset Summary
Retirement Funds**

Net Transactions

Asset Summary (at Market Value)

	Bonds (Millions)	Stocks (Millions)	Total (Millions)	Cash Flow (Millions)	Short-Term % of Fund	Bonds % of Fund	Equity % of Fund	Total Mkt. Value (Millions)
January 1989	\$88	-\$10	\$78	\$3	5.6%	47.7%	46.7%	\$10,760
February	60	18	78	38	5.3	47.9	46.8	10,760
March	150	5	155	12	3.9	48.8	47.3	10,760
April	-16	188	172	16	2.3	48.1	49.6	10,760
May	-2	4	2	43	2.6	47.6	49.8	10,760
June	119	10	129	119	2.5	49.2	48.3	10,760
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
October	21	1	22	14	3.1	51.2	45.7	15,285
November	81	-48	33	64	3.3	52.3	44.3	15,083
December	-4	9	5	25	3.2	51.2	45.6	16,065

Tab C

EXECUTIVE DIRECTOR'S REPORT

DATE: March 3, 1992

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 January 31, 1992 is included as Attachment A.

2) Travel Report

A travel report for the period from November 16, 1991 - February 15, 1992 is included as Attachment B.

3) Management Options for the Environmental Trust Fund

At the December 1991 SBI meeting, I reported that the Legislative Commission on Minnesota Resources (LCMR) asked SBI staff to develop income projections for the Environmental Trust Fund based on varying proportions of stocks and bonds. At its meeting on February 6, 1992, the LCMR adopted a resolution which endorses a balanced asset mix for the fund (see Attachment C).

4) Legislative Update

Several bills of interest to the SBI are pending from the 1991 Session or have been introduced during the 1992 Session. A summary is in Attachment D. This summary will be updated on a weekly basis and distributed to SBI deputies throughout the 1992 session.

5) IAC Member Appointments

The terms of the following Board appointees to the IAC expired in January 1992:

James Eckmann
Peter J. Kiedrowski
Kenneth F. Gudorf
Deborah Veverka

The expirations were announced in the State Register as part of Open Appointments Process administered by the Secretary of State. Each of the current members applied for appointment to new terms.

RECOMMENDATION:

I recommend that the SBI appoint the above individuals to the IAC for four year terms expiring in January 1996.

**STATE BOARD OF INVESTMENT
FISCAL YEAR 1992 ADMINISTRATIVE BUDGET REPORT
GENERAL FUND APPROPRIATION
FISCAL YEAR TO-DATE THROUGH JANUARY 31, 1992**

ITEM	FISCAL YEAR 1992 BUDGET	FISCAL YEAR 1992 EXPENDITURES
PERSONAL SERVICES		
CLASSIFIED EMPLOYEES	\$ 260,000	\$ 141,870
UNCLASSIFIED EMPLOYEES	1,224,000	616,020
SEVERENCE PAYOFF	0	24,225
WORKERS COMPENSATION INSURANCE	0	2,124
MISCELLANEOUS PAYROLL	0	-20
SUBTOTAL	\$ 1,484,000	\$ 784,219
EXPENSES & CONTRACTUAL SERVICES		
RENTS & LEASES	92,000	44,860
REPAIRS/ALTERATIONS/MAINTENANCE	9,000	4,429
PRINTING & BINDING	18,000	6,735
PROFESSIONAL/TECHNICAL SERVICES	5,000	7,086
DATA PROCESSING & SYSTEM SERVICES	162,000	81,000
PURCHASED SERVICES	20,000	17,110
SUBTOTAL	\$ 306,000	\$ 161,220
MISCELLANEOUS OPERATING EXPENSES		
COMMUNICATIONS	20,000	13,118
TRAVEL, IN-STATE	3,000	602
TRAVEL, OUT-STATE	40,000	22,951
FEES & OTHER FIXED CHARGES	7,000	4,478
SUBTOTAL	\$ 70,000	\$ 41,149
SUPPLIES/MATERIALS/PARTS	15,000	11,302
CAPITAL EQUIPMENT	19,000	2,180
TOTAL GENERAL FUND	\$ 1,894,000	\$ 1,000,070

ATTACHMENT B

STATE BOARD OF INVESTMENT

Travel Summary by Date
November 16, 1991 - February 15, 1992

<u>Purpose</u>	<u>Name(s)</u>	<u>Destination and Date</u>	<u>Total Cost</u>
Staff Conference "Educational Conference" sponsored by Nat'l Conference of Health, Welfare & Pension Plans	H. Bicker	Ft. Myers FL 12/2-5	\$ 845.25
Staff Education "Public Funds Seminar" sponsored by Inst. for Fiduciary Education	H. Bicker	Santa Barbara CA 1/13-15	\$1,355.38
Miscellaneous Meeting with State Street Bank personnel on performance measurement, int'l custody and int'l asset management	H. Bicker B. Lehman M. Menssen M. Perry M. Schmitt	Boston MA 1/23-24	\$4,629.20
Manager Monitoring Bonds and Derivatives Managers Fidelity, Miller Anderson Lehman, BEA	A. Botos J. Lukens	Philadelphia PA New York NY Boston MA 1/27-30	\$3,049.00
Manager Search Bonds and Derivatives Managers Bear Stearns, Mitchell Hutchins J.P. Morgan, Goldman Sachs, Merrill Lynch			

ATTACHMENT C

Adopted LCMR Meeting of 2/6/92

Whereas; the Environment and Natural resources Trust Fund (hereinafter, Trust Fund) was created in 1988 by statute and implemented after Section 14 of Article XI of the Minnesota Constitution was approved by 77% of those voting in the fall election; and

Whereas; the State Investment Board has the responsibility to invest the principal of the Trust Fund and the Board has asked for advice from the Legislative Commission on Minnesota Resources (hereinafter LCMR); and

Whereas; M.S. 116P.03 indicates the trust fund "...shall supplement the traditional sources..." of funding for environment and natural resource activities, a provision that clearly indicates the need to provide significant current income in order to supplement other sources; and

Whereas; the Constitution requires the principal to be inviolate and perpetual, a stipulation that strongly indicates there should be low risk taken by investing the principal; and

Whereas; the return to the state that is gained by investing current money into projects that improve environmental quality is very significant and may exceed returns available through normal market mechanisms; and

Whereas; the Trust Fund is intended to grow in value by virtue of the restriction placed on spending the lottery income, limited to 25% maximum and then only until fiscal 1997, and by virtue of the mandate that the principal be inviolate and perpetual; and

Whereas; the Trust fund is only guaranteed to receive additional principal until the year 2001 by Section 14 of Article XI of the Minnesota Constitution, which will only build a principal balance of \$200 million under the most favorable projections; and

Whereas; requests for expenditure have already increased from \$66 million proposed for 1989 to \$265 million proposed for 1991, based on proposals received by LCMR alone, and the proposed expenditures will continue to increase at a substantial rate; Now Therefore Be It

RESOLVED, the LCMR concludes that both growth and current income should be objectives for Trust Fund investment and therefore recommends that the State Investment Board invest the Trust Fund in a balanced portfolio of stocks and bonds as authorized under MN Stat 11A.24.

ATTACHMENT D

**Bills of Interest to the Minnesota State Board of Investment
1992 Legislative Session
Includes Action Through 2/27/92**

Description of Bill	HF/SF # and Author	Current Status
SBI Bill	HF 2026 (Reding)	Amended and passed House Gov't Op. 2/24
-Various provisions	SF 1917 (Waldorf)	Hearing in Gov't Op. 3/3
<hr/>		
Changing the formula governing calculation of post retirement increases	HF 1960 (Reding) SF 1910 (Morse)	Pension Commission hearing 3/7
-SBI will have greater investment flexibility for the Post Fund		
<hr/>		

Tab D

COMMITTEE REPORT

DATE: March 3, 1992

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

FROM: John Bohan, Chair
Asset Allocation Committee

SUBJECT: **International Equity Implementation Plan**

At its last meeting, Board members heard a preliminary report from the Asset Allocation Committee concerning an implementation plan for international equity investing in the Basic Retirement Funds. The Committee is continuing to evaluate the issues raised in the staff's draft position paper on this topic and intends to present final recommendations to the SBI and IAC in June 1992.

In the interim, I believe it would be productive for IAC and the SBI to have further discussion on the underlying rationale for international equity investing. A clear understanding and consensus on this issue will "set the stage" for specific elements of the SBI implementation program.

As a framework for the discussion, I asked staff to prepare the attached material. It is based, in large part, on information included in the staff's draft position paper.

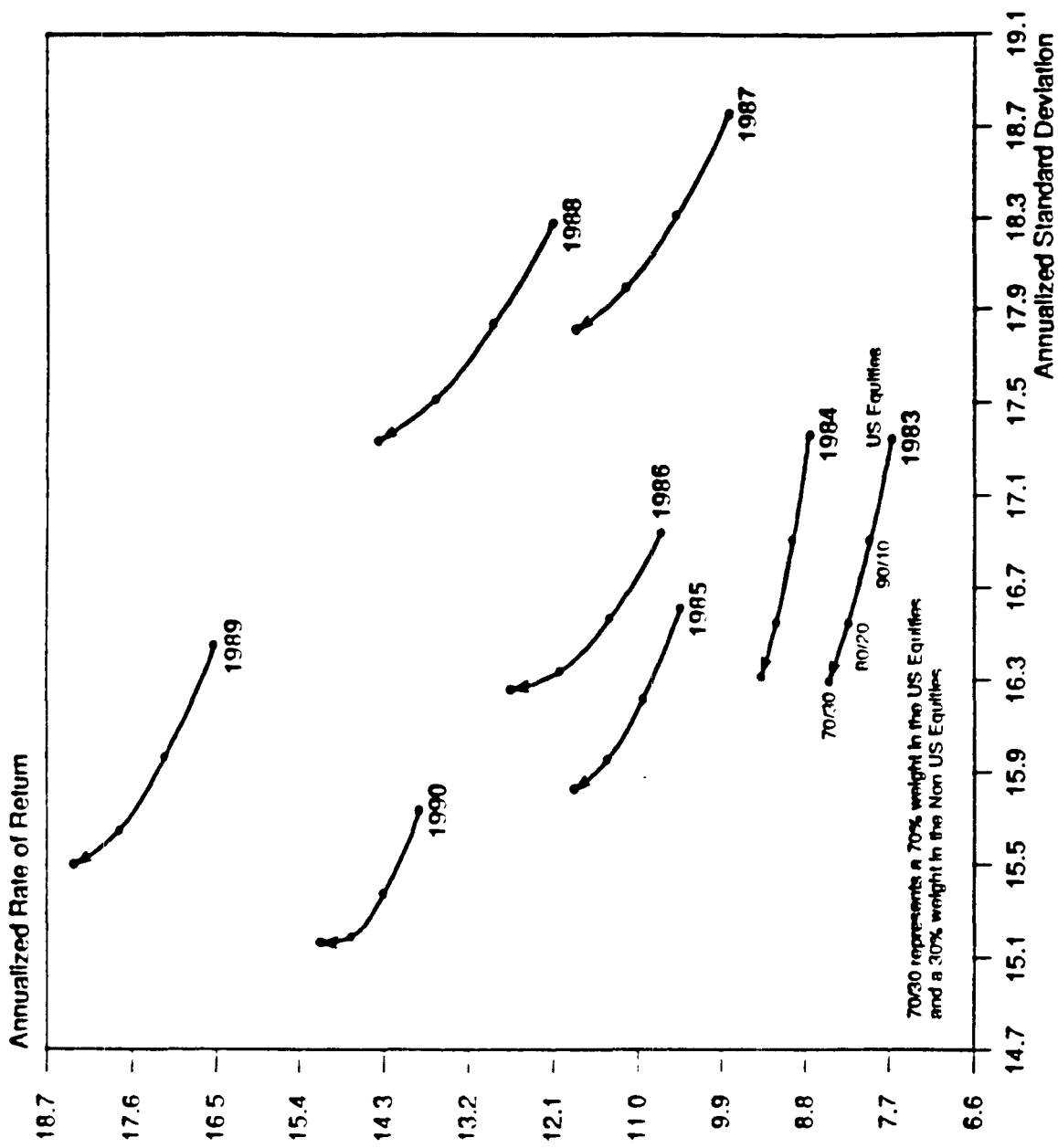
WHY INTERNATIONAL?

- o potential for higher return**
- o diversification**

Over time, adding international stocks to a portfolio has enhanced returns while reducing the volatility of total portfolio return. Over 50% of the MSCI World Index Universe is non U.S.

Increased international trade and competitiveness increases the importance of broadening the Basic Funds' investable universe.

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



Tab E

COMMITTEE REPORT

DATE: March 3, 1992

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

FROM: **Stock and Bond Manager Committee**

The Stock and Bond Manager Committee met on February 14, 1992 to consider the following items:

- o Review of stock and bond manager performance.
- o In-depth review of Fidelity Management Trust.
- o Annual review of BEA performance.
- o In-depth review of Rosenberg Asset Management.
- o Consider contract renewals for Franklin Portfolio, GeoCapital, and Rosenberg Institutional (equity) and BEA derivatives).
- o Review of Manager Monitoring Program for prospective equity managers.
- o Review of proposed equity manager allocation guidelines.

INFORMATION ITEMS:

1) Review of Manager Performance

Stock Managers

For the quarter ending December 31, 1991, the Basic Funds' domestic equity program outperformed its aggregate benchmark and the Wilshire 5000 (Equity Program 9.4% vs. Aggregate Benchmark 8.2% vs. Wilshire 5000 8.7%). The current equity managers in the Basic Funds outperformed the Wilshire 5000 for the latest year as well (Equity Managers 34.9% vs. Wilshire 5000 34.2%). For the latest five year period, the current equity managers have outperformed their aggregate benchmark but underperformed the Wilshire 5000.

Bond Managers

For the quarter ending December 31, 1991 the Basic Funds' domestic bond program outperformed the Salomon BIG (Bond Program 5.5% vs. Salomon BIG 5.0%). Primarily, the returns were high because the aggregate managers' duration was longer than the market during a period when interest rates declined. The current managers in the Basic Funds outperformed the Salomon BIG over the last year and five year periods as well.

Value of active management (VAM) reports for all active stock and bond managers are attached at the end of this section.

2) In-depth Review of Fidelity Management Trust

Staff conducted an in-depth review of Fidelity as part of the regular three year review cycle. A complete copy of the review is attached.

In summary, the review showed that:

- o The expected return for enhanced index managers is 10 to 25 basis points greater than the broad bond market on an annualized basis. Fidelity has met this goal by outperforming the Salomon BIG by 23 basis points with annualized returns of 11.58% vs. 11.35% for the market for the period 7/1/87-11/30/91.
- o Fidelity outperformed the market by underweighting Treasury securities and overweighting all other sectors of the market. In particular, Fidelity replaced short term government securities with short term corporate and asset-backed securities and replaced long term corporates with long term government securities.
- o Fidelity added value within the corporate portion of the portfolio by overweighting bank and finance securities. Their credit analysis allowed them avoid risky securities within these subsectors.
- o Fidelity generally stayed within their established investment guidelines. The review noted that Fidelity exceeded the 0-4.99 year government maturity guideline for an extended period, however, staff believes that the risk characteristics of the portfolio were not adversely affected. Further, the situation was corrected in April 1991 and Fidelity has stayed within the guideline since that time.
- o Overall, staff and the Committee are satisfied with Fidelity's performance to date.

3) Annual Review of BEA Performance

BEA has managed a cash enhancement portfolio for the Post Retirement Fund since April 1987. Its goal is to outperform short term cash returns through the use of low risk, fully hedged futures and options strategies. To date, BEA has provided an annualized return of 9.23% vs. 7.65% for its benchmark. This is within value added return expectation of 100 to 200 basis points. Overall, staff and the Committee are satisfied with BEA's performance to date. More information on BEA's investment approach and performance is attached.

4) In-depth Review of Rosenberg Asset Management

Staff conducted an in-depth review of Rosenberg Asset Management due to poor performance relative to its benchmark. A copy of staff's full report on Rosenberg Asset Management is attached. A summary of staff findings follows:

Qualitative Concerns

- o Rosenberg Asset Management has experienced rapid growth and continues to look for areas in which it can expand and develop new products. This is occurring at a time when they are experiencing performance problems and some loss of accounts within their domestic equity product.
- o Rosenberg Asset Management's additional back testing on its valuation model indicates that it could experience 3 to 5 year periods of negative performance relative to its benchmark. This is substantially different from the performance expectations described at the time the firm was retained by the SBI.

Quantitative Concerns

- o Rosenberg Asset Management has not added value on a cumulative basis relative to its benchmark Resenberg 12.3% vs. Benchmark 14.7%. The firm would have had a larger negative value added if the benchmark had properly reflected the consistent earnings-to-price and book-to-price in the actual portfolios.
- o Rosenberg Asset Management's stock selection its stated strength has consistently underperformed relative to its benchmark. This is significantly different than the performance expectations presented during the selection process.

The SBI's current contract with Rosenberg Asset Management expires March 31, 1992. Due to the above concerns, staff concluded that the contract should not be renewed.

After staff presented its review, two representatives from Rosenberg Asset Management addressed the Committee. Barr Rosenberg, Chief Investment Officer,

and Tom Meade, Director of Client Service, reviewed the investment approach of the firm and their performance expectations for the future. The firm believes its investment process valuation model are sound and will provide significant value added in the future.

The Committee discussed staff review as well as the firm's presentation. While the Committee ultimately agreed with staff's recommendation to end the contractual relationship with the firm, it was not a decision that was reached easily or quickly. Some members believe the firm's investment approach has a high likelihood of providing value added in the future or feel that the evaluation time frame has been too short. Other members agree that the firm's performance record is likely to turn positive but are unwilling to wait for the change to become evident.

ACTION ITEMS:

1) Contract Renewals

Several annual contracts with managers expire on March 31, 1992. The SBI should take action on each.

RECOMMENDATIONS:

- o The Committee recommends that the SBI authorize the Executive Director, with assistance from SBI's legal counsel, to negotiate and execute fifteen month contract extensions with the following firms subject to the standard 30-day termination provision:

Franklin Portfolio Associates	(active equity)
GeoCapital Corporation	(active equity)
BEA Associates	(cash enhancement)

The fifteen month period is recommended to put the contracts on a fiscal year basis.

- o The Committee recommends that the SBI not renew its contract with Rosenberg Asset Management. If adopted, Rosenberg's portfolio will be distributed among Forstmann-Leff, Independence Associates and Lynch & Mayer.

2) Review of Equity Manager Monitoring Program

In conjunction with the Board's action to hire two active domestic equity managers during its December 18, 1991 meeting, the Board requested that staff establish a monitoring program for a small group of active equity managers that the Equity Selection Committee felt were potential candidates for future manager searches. In

response, staff developed a proposal and presented it to the Committee. A copy of staff's Equity Manager Monitoring Program is attached.

Initially, the monitoring program will collect a broad range of pertinent information from each manager. Thereafter, only summary information will be collected on a quarterly and annual basis. Additional candidates may be suggested by Board members, IAC members, the consultant or staff. While candidates can be added at any time, staff will solicit potential candidates from the above sources on at least an annual basis. Staff will review all suggested candidates with the IAC Stock and Bond Manager Committee.

Due to the quantity of data collected, no more than ten (10) firms should be included in the system at one time. A Search Committee would be reconvened as necessary to formally consider candidates and recommend that one or more firms from the Equity Manager Monitoring Program be retained by the Board.

The Committee endorsed the proposal as described above. The Committee feels the monitoring effort should be maintained at 10 or fewer firms in order to keep the program at a manageable level.

3) Equity Manager Allocation Guidelines

At its last meeting, the Committee requested that staff develop guidelines for the allocation of assets among the managers in both the stock and bond programs. Staff presented guidelines for the domestic equity program assets among the domestic equity managers at the February meeting (copy attached). Staff reported that they intend to present allocation guidelines for the domestic bond program at the next Committee meeting.

Staff proposed that the allocations to active equity managers be constrained by broad upper and lower limits:

- o An active equity manager will not have more than 10% of the total domestic equity assets or 20% of the total active manager assets. This implies that the SBI will have a minimum of 5 active managers.
- o An active manager will have at least 2% of the total domestic equity assets or 4% of the active equity assets.
- o A specific target percentage allocation will be developed for each manager based on the qualitative and quantitative criteria described in the attached paper.
- o Allocations to managers will be rebalanced using guidelines similar to those currently in place for the total Basic Funds. That is, rebalancing would be required when the actual assets deviate by more than 10% from the established

target (e.g. an equity manager with a 5% target would have to be rebalanced if its actual weight was $\pm 0.5\%$, above 5.5% or below 4.5%).

The Committee endorses the concepts underlying the proposed guidelines. In order to minimize transaction costs, staff suggested that the guidelines be implemented when the outcome of legislation affecting the Post Fund is known. The Committee concurred and suggested that the rebalancing guidelines be reviewed periodically to ensure that transaction costs and asset transfer remain prudent.

RECOMMENDATION:

The Committee recommends that the SBI adopt the attached position paper as its policy regarding equity manager allocations. Further, the Committee recommends that the guidelines be implemented when the outcome of the Post Fund legislation is known.

Detailed Review of Fidelity Asset Management

- I. Organization
 - A. Ownership
 - B. Professional Staff
 - C. Fixed Income Assets Under Management
 - D. Personnel Turnover
- II. Indexation Process and Return Enhancement
 - A. Indexation Strategy
 - B. Return Enhancement
- III. Investment Guidelines
- IV. Performance Analysis
 - A. Performance Relative to the Salomon BIG
 - B. Portfolio Performance Attribution
- V. History of SBI Action
- VI. Conclusion

EXHIBITS

- 1 - Fidelity Fixed Income Resources
- 2 - Yield Curve Definition
- 3 - Duration Years
- 4 - Treasury Bonds, Actual vs. Guidelines
- 5 - Agency Bonds, Actual vs. Guidelines
- 6 - Corporate Bonds, Actual vs. Guidelines
- 7 - Yankee Bonds, Actual vs. Guidelines
- 8 - Mortgage Bonds, Actual vs. Guidelines
- 9 - Other Bonds (Asset-Backed and CMO Bonds)
- 10 - AAA Rated Corporate, Actual vs. Guidelines
- 11 - AA Rated Corporates, Actual vs. Guidelines
- 12 - A Rated Corporates, Actual vs. Guidelines
- 13 - BBB Rated Corporates, Actual vs. Guidelines
- 14 - 0-4.99 Year Maturities (Government) Actual vs. Guidelines
- 15 - 5-9.99 years Maturity (Governments) Actual vs. Guidelines
- 16 - 10+ Maturity (Governments) Actual vs. Guidelines
- 17 - Performance Results
- 18 - Relative Duration
- 19 - Finance Holdings Relative to the Market
- 20 - Bank Holdings Relative to the Market

DETAILED REVIEW OF FIDELITY ASSET MANAGEMENT

I. ORGANIZATION

A. Ownership

The fixed income group that manages the SBI portfolio is part of Fidelity Management Trust Company (FMTC). FMTC was founded in 1981 to conduct the pension fund management business of its parent company, FMR Corp. FMR Corp., founded in 1946, is the country's largest privately owned investment firm. It is comprised of FMTC (U.S. tax-exempt investment management) and Fidelity Management & Research Company (domestic and international mutual fund management). Each operates independently and serves a distinct sector of the corporate and retail markets. At the same time, joint utilization of investment professionals by FMTC and FMR allows the investment organizations to function as one unit.

B. Professional Staff

Sharmin Mossavar-Rahmani is the SBI's primary contact at Fidelity. Ms. Mossavar-Rahmani joined Fidelity in 1987 and is a Director of the Trust Company, Senior Vice President and Head of Fixed Income. Before joining Fidelity, she was a consultant for META Systems, Inc., a Director of Fixed Income Research at Ryan Financial Strategy Group, and a Vice President and Portfolio Manager at Lehman Management Company, Inc.

Exhibit 1 shows all Fidelity's fixed income resources. It shows their research and investment systems are quite extensive. In particular, the large credit research area allows Fidelity to be selective when investing in corporate securities. Charles Morrison is the portfolio manager for corporate securities and makes recommendations on corporate bonds that are purchased for the portfolio.

C. Fixed Income Assets Under Management

The following table (assets are in millions) shows how Fidelity's assets have grown. The Broad Market row represents enhanced index portfolios like the SBI's. While the SBI portfolio has always represented a large portion of the enhanced index accounts at Fidelity it will not be the dominate account in 1992 as Fidelity adds more clients. Fidelity believes they are currently staffed to manage up to \$10 billion in assets.

FIDELITY MANAGEMENT TRUST COMPANY ASSETS 1988 - 1991

	1988		1989		1990		1991	
	# Accts	Assets	# Accts	Assets	# Accts	Assets	# Accts	Assets
All Fixed Income	9	\$619.7	22	\$1266.70	23	\$1378.00	31	\$2464.9
Broad Market Indexes*	2	317.9	4	614.90	4	631.80	4	772.5
Balanced (4 accounts)	4	N/A	4	N/A	4	N/A	4	118.8

* In addition to these figures, 6 accounts will be funded in 1992 totaling \$1.4 billion

D. Personnel Turnover

The fixed income department at Fidelity lost only Bill Nemerever since hired by the SBI. Mr. Nemerever was a Senior Vice President and managed the portfolio with Ms. Mossavar-Rahmani. Staff determined that this would have little affect on management of the portfolio. Staff felt that Ms. Mossavor-Rahmani and the staff at Fidelity could make up for the loss of Mr. Nemerever.

II. INDEXATION PROCESS AND RETURN ENHANCEMENT

There are three ways to build an index fund; the stratified sampling or the cellular approach, the optimization approach using linear programming, and the variance minimization approach using quadratic programming and a risk factor model. Each approach has its advantages and disadvantages. Section A describes how Fidelity indexes the portfolio and section B describes how Fidelity adds value to the indexed portfolio.

A. Indexation Strategy

Fidelity uses two of the approaches discussed above to build the SBI's portfolio. Using 75 percent of the portfolio's assets, stratified sampling is first used to match the target effective duration of the portfolio and to obtain the desired maturity and sector structure. Fidelity uses a risk factor model to fine-tune the index fund with the remaining assets.

Phase I - Stratified Sampling

In stratified sampling, the Salomon BIG is divided into subsectors based on characteristics like maturity, coupon, sector and quality. For example, one cell

might contain all Treasuries with maturities between 5 and 10 years and coupon rates between 8 and 11 percent.

Next, Fidelity selects securities to represent each cell. Fidelity chooses securities so that their total return and profile characteristics (such as yield and duration) match the average characteristics of the Salomon BIG securities in that cell.

The product of Phase I is a portfolio with several characteristics that match the index. This includes duration, yield-to-maturity, convexity, maturity and coupon distribution, quality, and sector exposure.

Phase II- Risk Factor Model

In this phase, Fidelity compares the portfolio to the Salomon BIG using a risk factor model. Fidelity uses the model to analyze bonds using 65 to 80 factors. These factors include interest rates, credit quality, industry, and callability. The model determines the role of each factor in changes in the price of that bond. The model is also used to analyze the total portfolio, comparing the exposure of the portfolio to changes in these risk factors. Any deviations between the portfolio and the Salomon BIG are eliminated using the remaining 25% of the assets not invested in Phase I.

B. Return Enhancement

Fidelity expects to generate returns 10 to 25 basis points greater than the Salomon BIG index. Fidelity primarily adds value using the following strategies:

o Sector Selection

Fidelity weights sectors based on their relative value. For instance, if the economy is strong, yield spreads between high quality and low quality issues are historically at their lowest levels. The high quality issues are most attractive when this happens and Fidelity would probably overweight governments. Conversely, as the economy troughs, yield spreads are high making the lower quality issues more attractive. Fidelity would probably overweight lower quality corporates.

o Issue Selection and Credit Research

Fidelity's credit analysts provide input on purchases and sales of corporate and agency securities. Fidelity's objectives are to buy securities that are stable credits or likely to be upgraded, to avoid potential downgrades or securities exposed to adverse news, and to sell problem credits in a timely fashion.

- o Yield Curve Strategies

Fidelity also adds value by changing the maturity distribution of the securities relative to the Salomon BIG to take advantage of non-parallel shifts in the yield curve. For instance, if the yield spread between one year and five year maturities along the Treasury yield curve is below its six month average, Fidelity would reduce its holdings in this range relative to the index. Fidelity assumes the yield curve for this sector will eventually steepen to a more normal shape and add value to the portfolio. (See Exhibit 2 for explanation of non-parallel yield curve shifts.)

- o Trading and Execution

Fidelity's traders try to add value through aggressive trading with a variety of brokers. According to Fidelity, the spread between bond prices from different dealers and the spread between bid and ask price is sometimes very large.

III. INVESTMENT GUIDELINES

Fidelity's investment guidelines were set to allow Fidelity to enhance returns relative to the index with less risk than an active manager. Following is a summary and evaluation of these guidelines.

Summary of Current Guidelines Relative to the Salomon BIG

- o Target the portfolio duration within ± 0.10 years of benchmark.
- o Invest no more than 25% of portfolio in securities not included in the index.
- o Use the following sector guidelines

	Deviations/Range
U.S. Treasury	$\pm 15\%$
U.S. Agency	$\pm 5\%$
Corporate	$\pm 5\%$
Yankee	0,+5%
Mortgage-Backed Securities	$\pm 7.5\%$

- o Limit yield curve deviations (Governments only)

Maturity	Deviations/Range
0-4.99 yrs.	$\pm 5\%$
4.99-9.99	$\pm 10\%$
10+	$\pm 5\%$

o Limit Corporate credit deviations

	Deviations/Range
AAA	0, +2.5%
AA	± 5%
A	± 5%
BBB	0, +5%

Exhibits 3 through 16 show that Fidelity generally stayed within the guidelines. On the graphs, the dark line is the portfolio, the middle line is the BIG, and the upper and lower lines are the upper and lower guideline limits for that sector.

Usually, if Fidelity violated the agreed upon guidelines, they corrected it very quickly. For instance, the durations for the BIG and portfolio are calculated at the end of each month. If the duration falls outside the guidelines, it is corrected within three to four days.

In certain instances, Fidelity violated the guidelines when circumstances were beyond their control. In November and December of 1990, the SBI took \$45 million from Fidelity as part of rebalancing. Fidelity sold Treasury bonds to meet the drawdown. At the time, Fidelity was nearing the lower guideline limit for Treasury bonds and the upper limit for BBB corporate bonds. Selling the Treasury bonds caused them to violate both guideline limits for one to two quarters.

Fidelity violated the 0 to 4.99 year government maturity guideline for a period of time before April 1991. Staff was not overly concerned by this situation:

- o To add value to the portfolio, Fidelity consistently underweights Treasury bonds and overweights corporate bonds and bonds not in the index (e.g. asset-backed securities and CMO's).
- o While they underweighted short Treasuries and violated the 0-4.99 year guidelines, long Treasuries were overweighted to bring the total Treasury portfolio within guidelines.
- o Since long Treasuries were overweighted, the duration of the government sector was long. To bring the portfolio duration within guidelines, Fidelity overweighted short corporates and asset - backed and underweighted long corporates.

The above leads to the following conclusions.

- o Long corporates were replaced by less risky long government securities.

- o Short Treasuries were swapped for short corporates and asset-backed securities.

On a relative basis, short corporates and asset-backed are less risky than long corporates when compared to the government securities. Additionally, most of the asset backed are AAA rated. If Fidelity increased short government holdings to stay within guidelines and wanted to continue adding value to the portfolio by overweighting corporates, they would have to swap long treasuries for long corporates, creating a riskier portfolio.

New Guidelines

Staff is working with the enhanced index managers to formulate new guidelines. The revised guidelines will address several risk factors or portfolio characteristics that are not covered in Fidelity's current guideline (e.g. Fidelity's current guidelines do not address sector duration.)

IV. PERFORMANCE ANALYSIS

A. Performance Relative to the Salomon BIG

Exhibit 17 shows that Fidelity has outperformed the Salomon BIG through 11/30/91 by 23 basis points on an annualized basis. This meets their objective of outperforming the index by 10 to 25 basis points. Also, Fidelity achieved these added returns with less volatility than the active managers. The following table of returns from 6/30/88 through 11/30/91 illustrates this.

	Annualized Returns Portfolio - Benchmark	Annualized Standard Deviation Portfolio - Benchmark
Fidelity	0.23	0.435
<u>Active Managers:</u>		
IAI	0.10	1.542
Lehman	0.16	0.732
Miller	-0.41	2.300
Western	0.57	1.169

The table shows that Fidelity has higher returns relative to their benchmark than all active managers but Western since they were hired. However, Fidelity's volatility around the benchmark has been much less than all other managers.

B. Portfolio Performance Attribution

Quantitative fixed income performance attribution is difficult partly due to pricing problems inherent in bond portfolios. Additionally, software has not been developed that solves all pricing difficulties and provides performance attribution. However, examining past portfolios gives a qualitative indication about where a manager adds value.

Fidelity primarily added value through sector and subsector selection. Within each subsector, issue selection has also added value. Finally, Fidelity has tried to add value by positioning the portfolio along the yield curve. It is very difficult to determine if yield curve positioning adds value. Fidelity provided a large portion of its value added in the first quarter of 1991. Therefore, the following discussion will cover how Fidelity has added value in general and will also look in more detail at the first quarter of 1991.

Overall Sector Selection

Fidelity primarily added value to the portfolio through correct sector and subsector decisions. Exhibits 4 through 9 give an overall view of Fidelity's portfolio and illustrate the sector decisions. Since hired, Fidelity consistently underweighted Treasury securities, the poorest performing sector of the market. From 6/88 through 9/91, Treasuries returned 10.48%, Agencies 10.77%, corporates 11.62% and mortgages 11.97%. If asset - backed and CMOs are grouped with corporates and mortgages, Fidelity overweighted all higher returning sectors.

Duration Within the Sectors

The government portion of the portfolio consistently had a longer duration than the market while the corporate portion was shorter. Therefore, the majority of government assets were invested in long duration securities while the corporate securities had a short duration. Exhibit 18 illustrates this point. These sector selections may have added value as the following table shows.

Sector Returns 6/88 - 9/91

	Short Duration	Intermediate Duration	Long Duration
Corporate	10.19%	11.08%	12.71%
Treas/Agency	9.62	10.93	12.14
Agency	9.88	11.38	12.83

The table shows that it may not have paid to replace long corporates with long governments (Treasury/Agency) but it did pay to replace short governments with short corporates. Agency securities were overweighted in the portfolio and had a longer duration than the market. Fidelity did add value by replacing intermediate and long corporates with agencies and swapping short corporates for short agencies.

Weighting Within Individual Sectors

Within individual sectors, Fidelity's corporate sector weighting stands out. As Exhibits 19 and 20 show, Fidelity consistently overweighted finance, bank and asset-backed issues. Fidelity's investment in asset-backed and bank securities contributed to Fidelity's performance during the first quarter of 1991.

Fidelity overweights asset-backed securities because they offer good value relative to short corporates. Fidelity increased their holdings in this area since 12/89. Starting in the fourth quarter of 1990, asset-backed spreads to Treasuries began to widen and peaked at 140 basis points during the first quarter of 1991. Although their overweighting hurt performance during the fourth quarter, Fidelity continued to add asset backed securities as spreads widened until asset-backeds represented 11.2 percent of the portfolio. During the first quarter of 1991, spreads narrowed to 100 basis points, adding value to the portfolio.

Unlike asset-backed securities, Fidelity did not overweight bank bonds until June 1990 as Exhibit 20 shows. Fidelity began to invest more of the portfolio in bank bonds after spreads had widened from 150 basis points in October 1989 to 250 basis points in June 1990. As spreads continued to widen, Fidelity added more bank bonds to the portfolio. During the first quarter of 1991, Fidelity made significant investments in bank securities as spreads for regional banks peaked at over 800 basis points during the quarter. The overweighted position (6.2% in the portfolio vs. 1.1% in the BIG) enhanced returns as spreads narrowed 450 basis points during that same quarter.

Weighting Within Rating Classes

Exhibits 10 through 13 show that Fidelity consistently overweights BBB rated corporate securities. This has probably added value to the portfolio since BBB rated bonds returned 50 basis points more than AAA rated securities, 10 basis points more than AA rated securities, and 30 basis points more than A rated securities since Fidelity was hired.

Issue Selection

Fidelity's issue selection allowed them to overweight corporate, banking and BBB rated securities. Fidelity claims they outperformed the market the first quarter of 1991 in part because of their issue selection in the bank subsector. Fidelity's credit

analysis allowed them to avoid riskier bank bonds and select higher quality bank bonds within the same rating category.

Yield Curve Selection

Fidelity has at times had portfolios with a barbell or bullet maturity structure. It is difficult to determine if this has added value to the portfolio. For instance, from 1/89 through 4/89, Fidelity had a barbell portfolio. According to Fidelity's calculations, this structure added five basis points to the return from January through March as the yield curve flattened. However, all these gains were lost in April as the yield curve steepened again. (For explanation of barbell and bulleted strategies, see Exhibit 2.)

V. HISTORY OF SBI ACTION

- o In July, 1988 Fidelity received \$292 million.
- o In July 1989, Fidelity received \$100 million due to rebalancing activity in the Basic Retirement Funds.
- o In August of 1989, Fidelity received \$50 million due to rebalancing activity.
- o In November 1990, \$15 million was taken from Fidelity as part of rebalancing activity.
- o In December 1990, \$30 million was taken from Fidelity as part of rebalancing activity.
- o In March 1991, Fidelity received \$20 million as part of rebalancing activity.

VI. CONCLUSION

Staff concludes that SBI's relationship with Fidelity should be continued. This review shows that Fidelity has met its performance objective by outperforming the Salomon BIG by 23 basis points on an annualized basis. Staff believes that Fidelity can effectively manage additional assets for the SBI as it becomes available through rebalancing or other manager allocation decisions.

FIDELITY FIXED INCOME RESOURCES

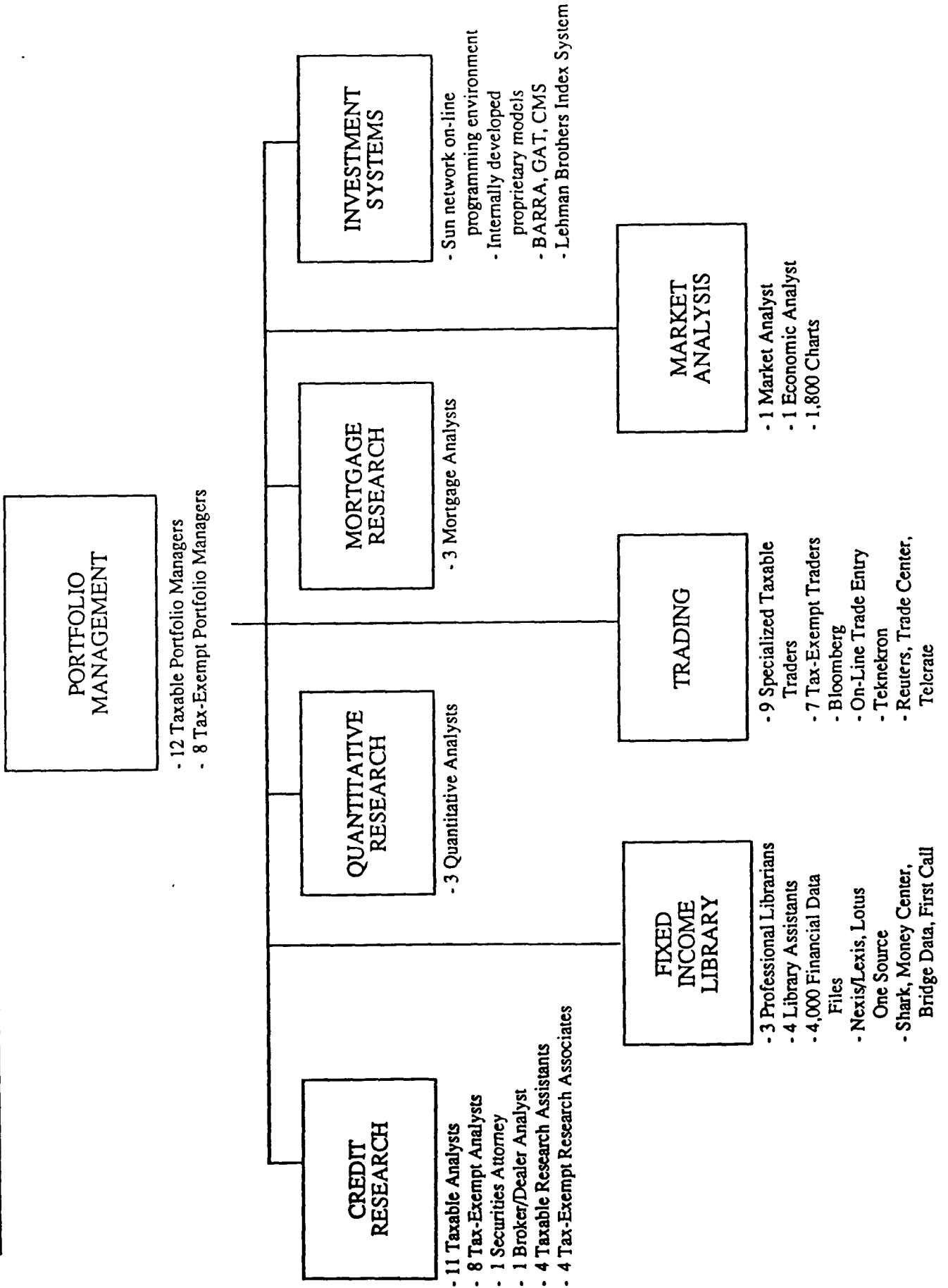


EXHIBIT 2

Non-parallel yield curve shift - A non-parallel yield curve shift occurs when the yields on bonds of different maturities shift by different amounts. For instance, if the yield curve shifts so the yield on the five year treasury changes by two percent and the yield on the 30 year treasury changes by one percent, there has been a non-parallel shift in the yield curve.

Bullet portfolio - A manager has a bulleted portfolio if the securities in the portfolio have maturities grouped together. For instance, if the manager wants a duration of five years and has a bulleted portfolio, most of the securities will have durations around five years.

Barbelled portfolio -- A manager has a barbelled portfolio if there are two sets of securities in the portfolio with different maturities. For instance, if the manager wants a duration of five years and has a barbelled portfolio, the securities may be grouped so that one set has a duration of one year and the other set of securities in the portfolio has a duration of nine years.

EXHIBIT 3

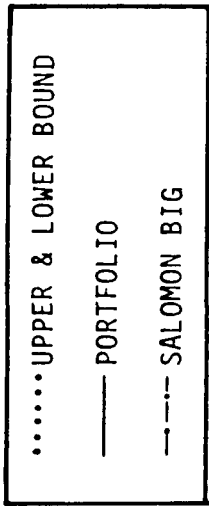
DURATION IN YEARS

	<u>Portfolio</u>	<u>Salomon BIG</u>
9/88	4.3	4.35
12/88	4.26	4.44
3/89	4.32	4.42
6/89	4.53	4.45
9/89	4.46	4.55
12/89	4.46	4.56
3/90	4.45	4.61
6/90	4.52	4.61
9/90	4.49	4.68
12/90	4.61	4.61
3/91	4.4	4.64
6/91	4.5	4.65
9/91	4.45	4.47

GUIDELINES

SALOMON BIG \pm 0.1 YEARS

EXHIBIT 4



Treasury Bonds, Actual vs. Guidelines

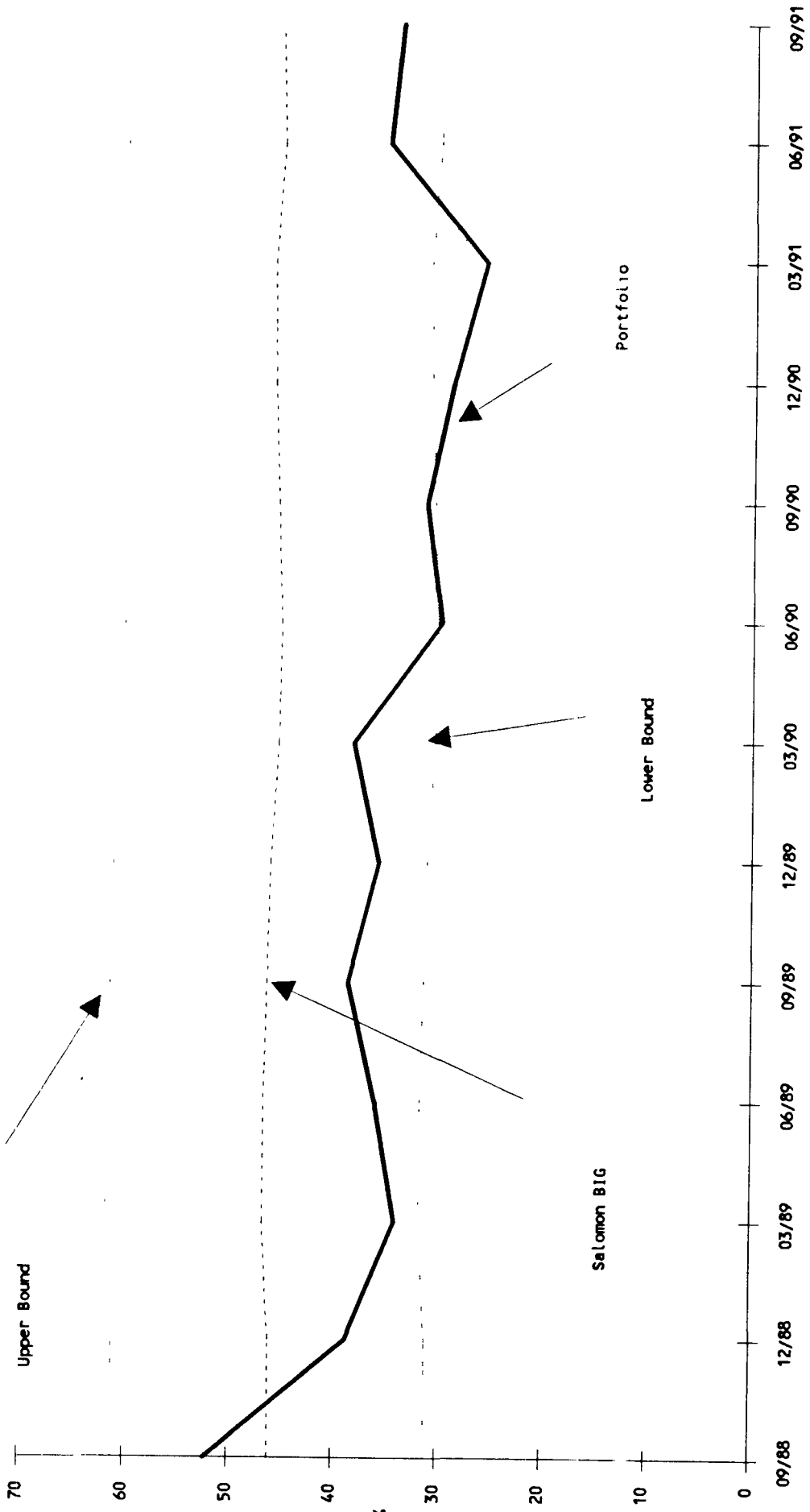
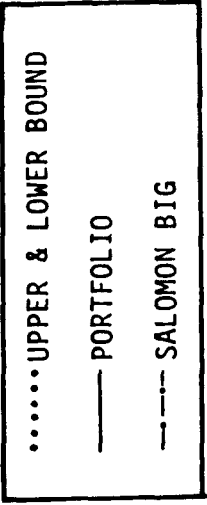


EXHIBIT 5



Agency Bonds, Actual vs. Guidelines

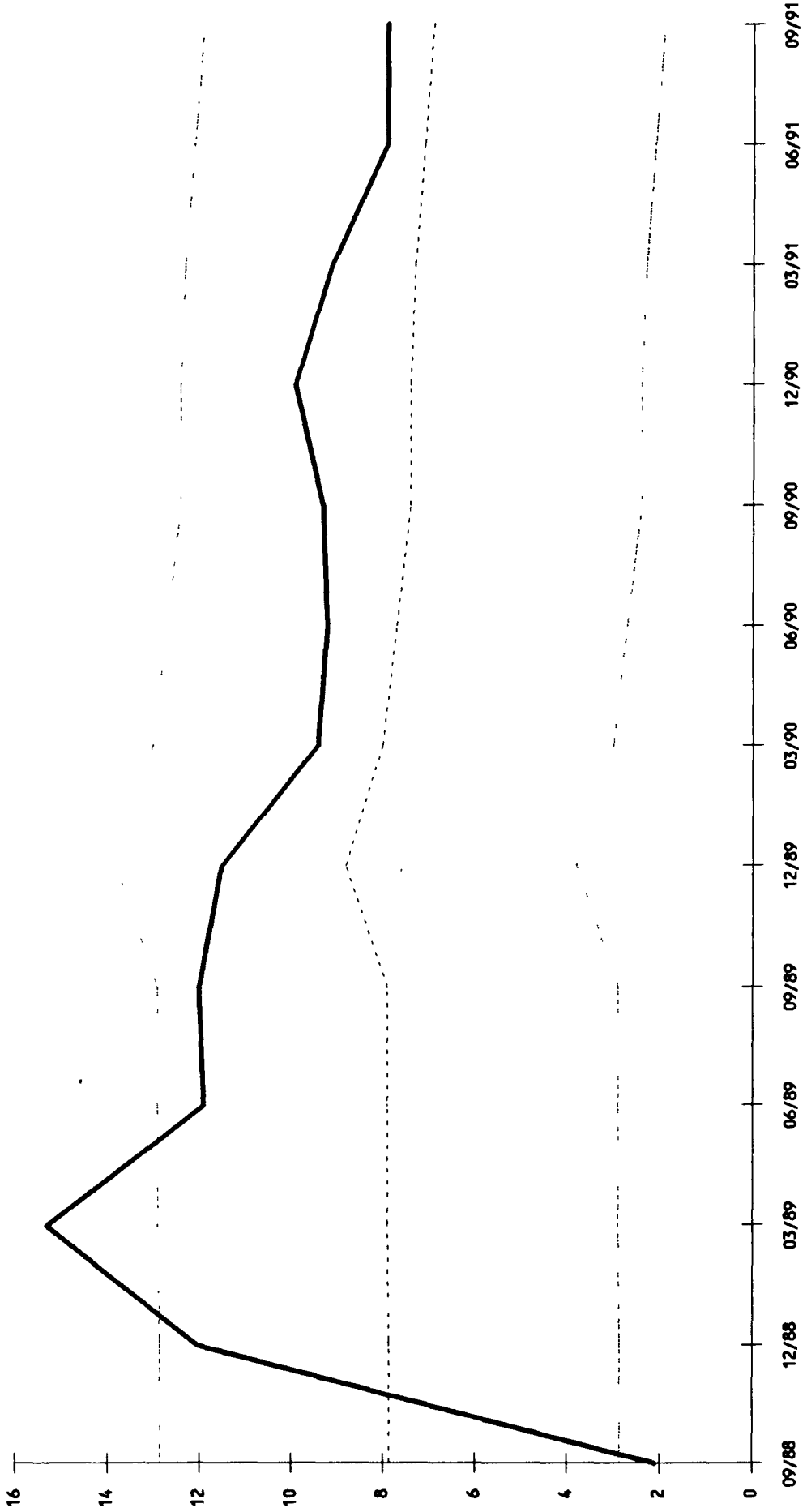
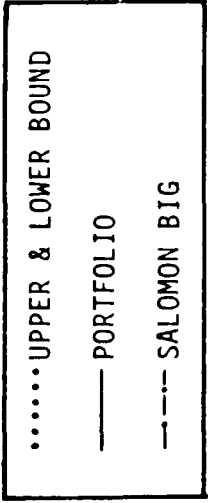


EXHIBIT 6



Corporate Bonds, Actual vs. Guidelines

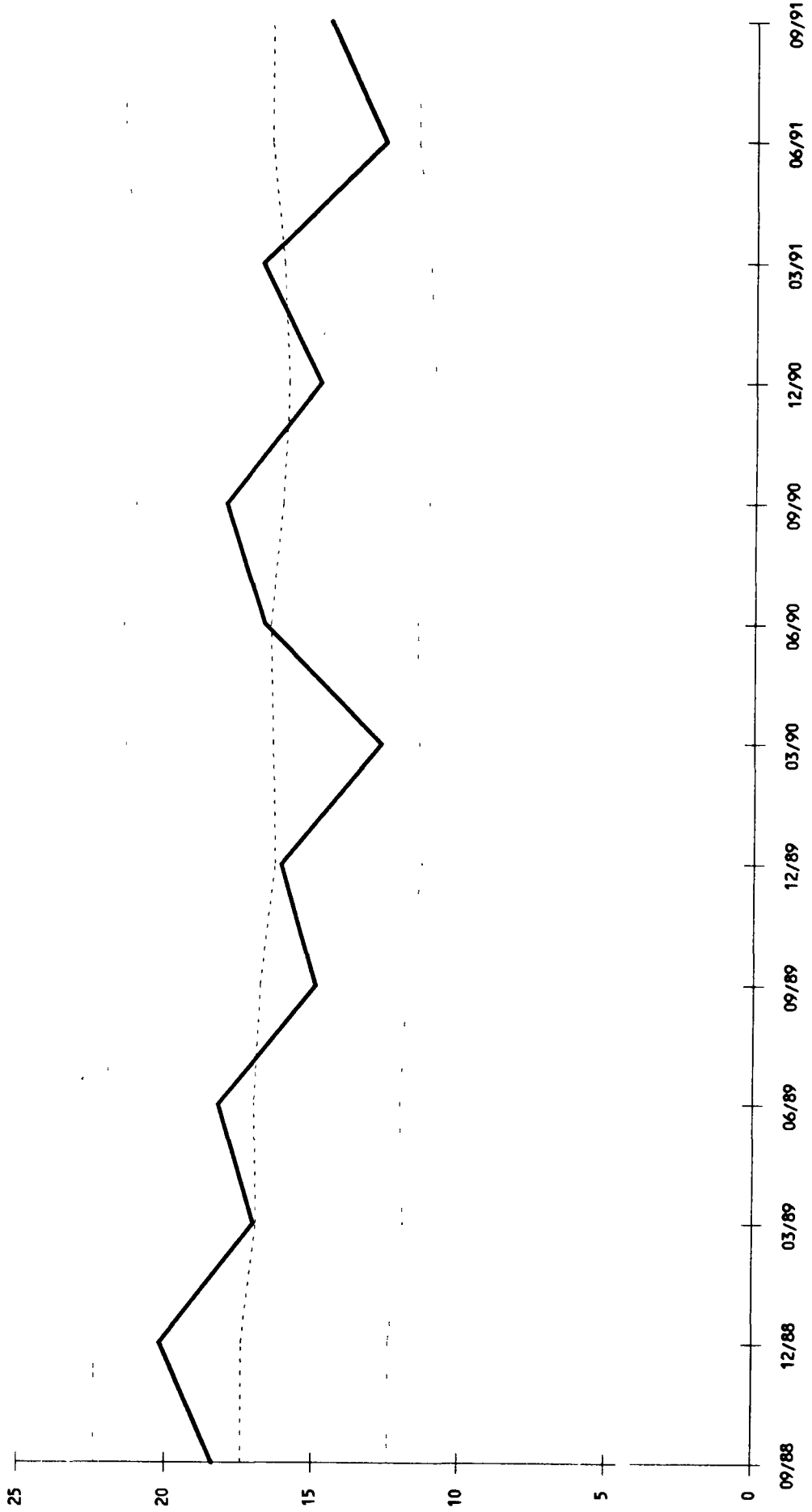
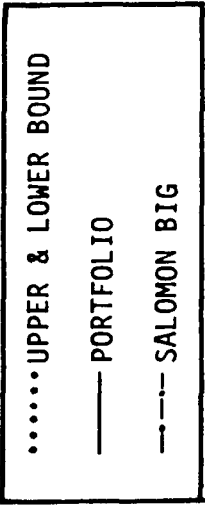


EXHIBIT 7



Yankee Bonds, Actual vs. Guidelines

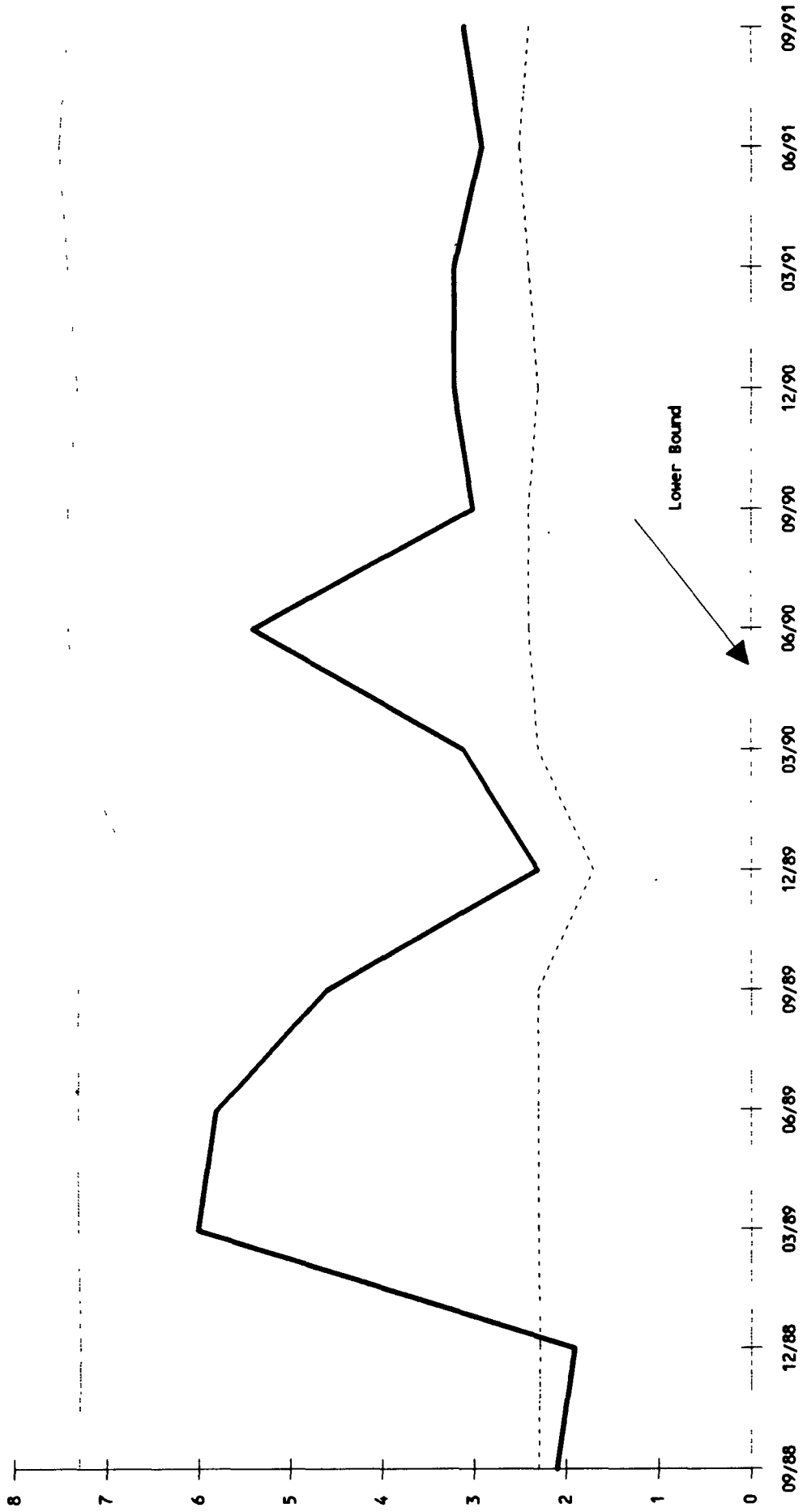
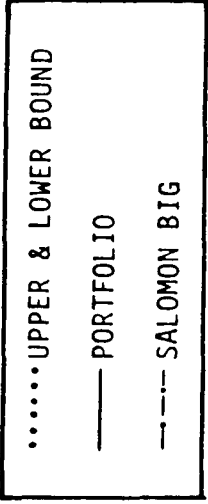


EXHIBIT 8



Mortgage Bonds, Actual vs. Guidelines

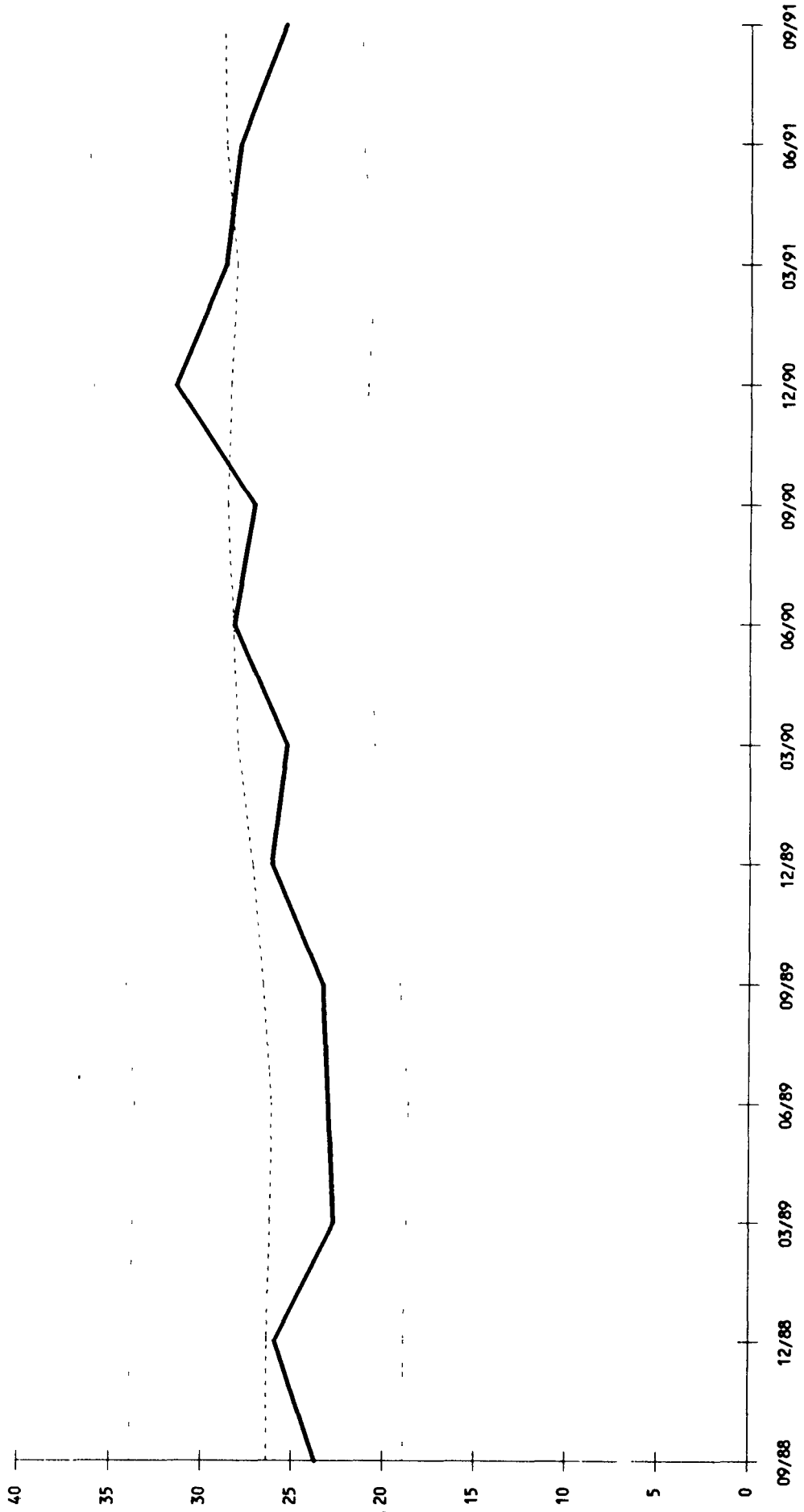
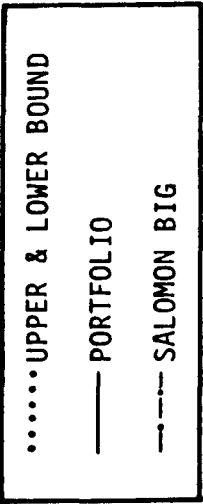


EXHIBIT 9



Other Bonds (Asset-Backed and CMO Bonds)

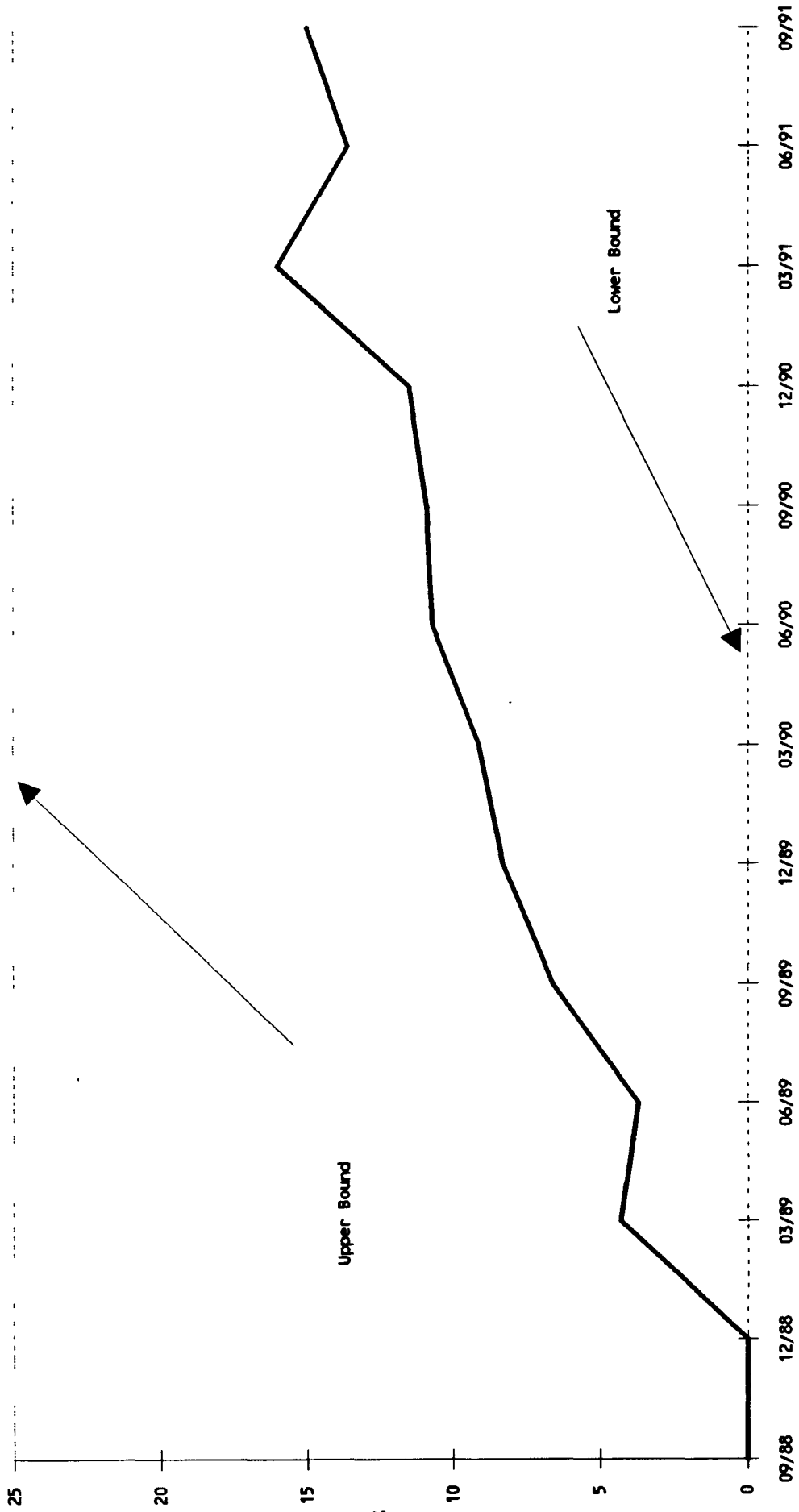
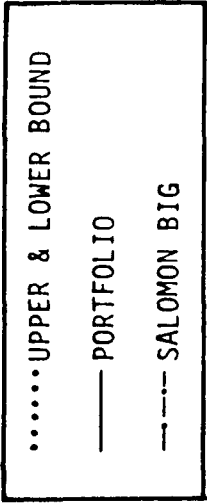
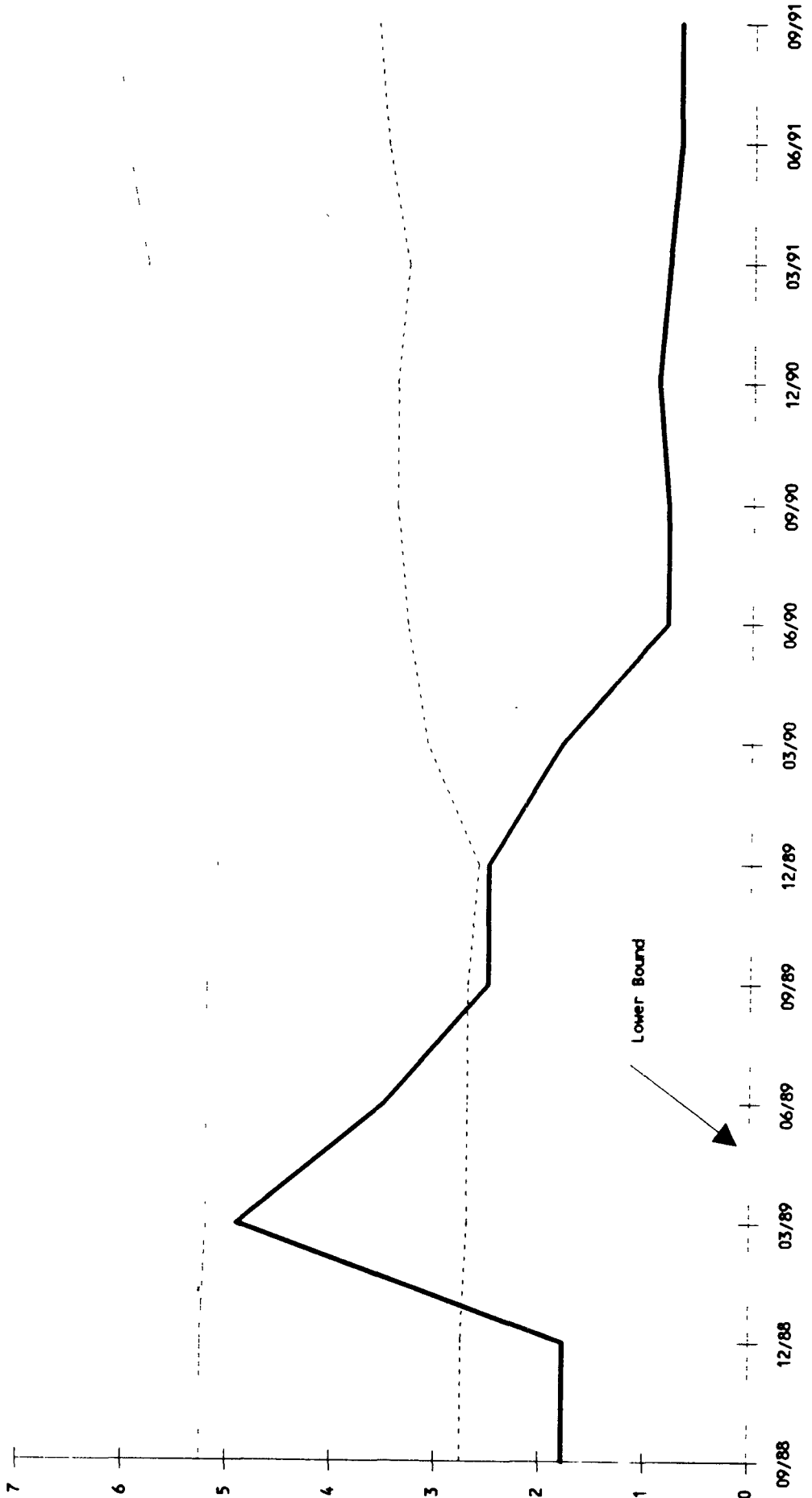
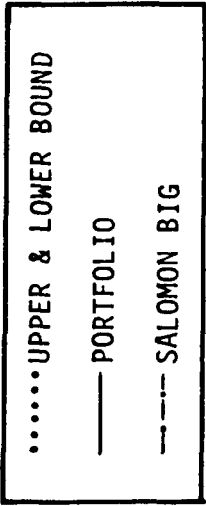


EXHIBIT 10



AAA Rated Corporates, Actual vs. Guidelines





AA Rated Corporates, Actual vs. Guidelines

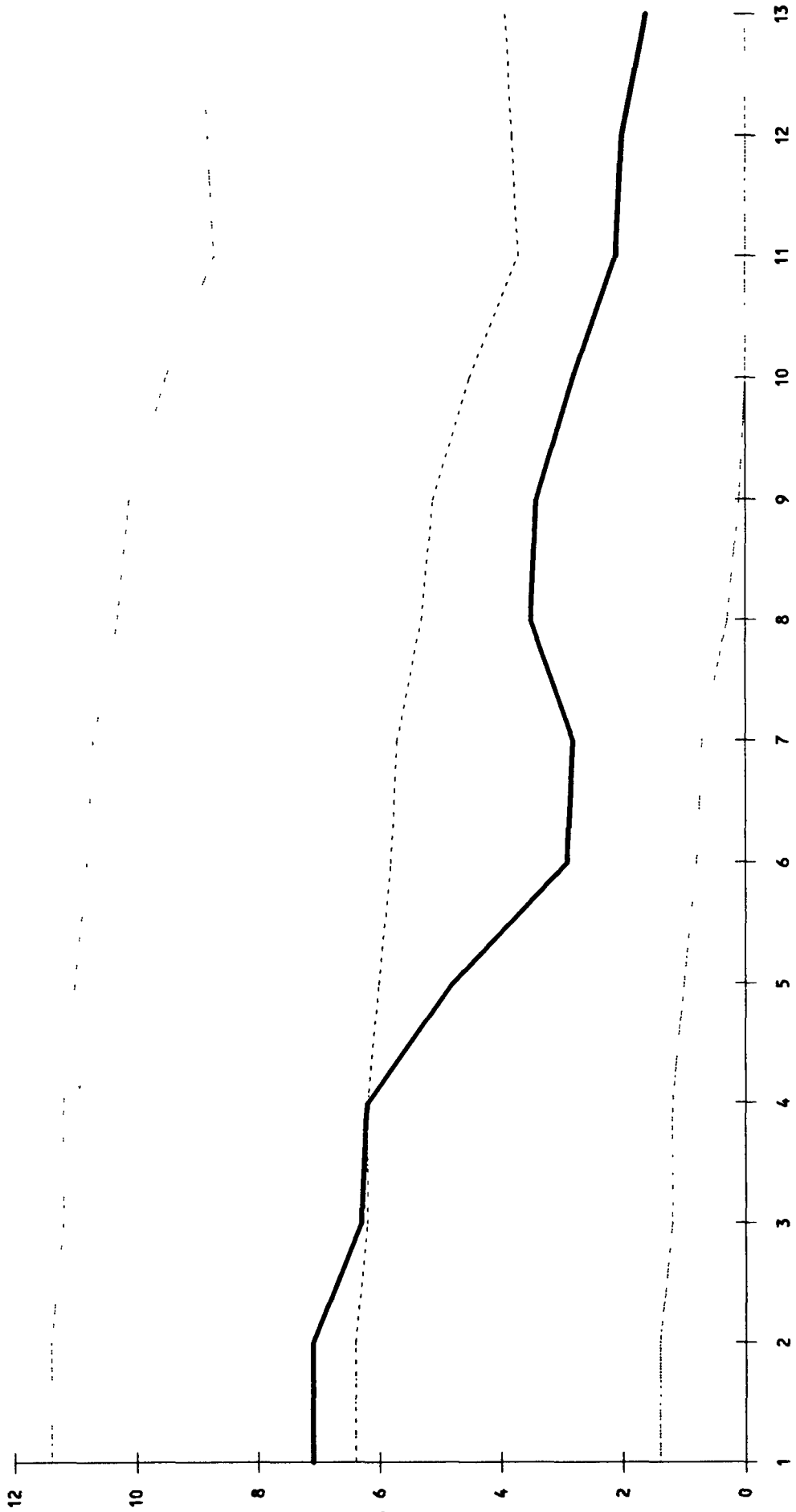
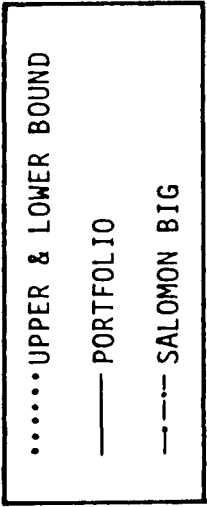
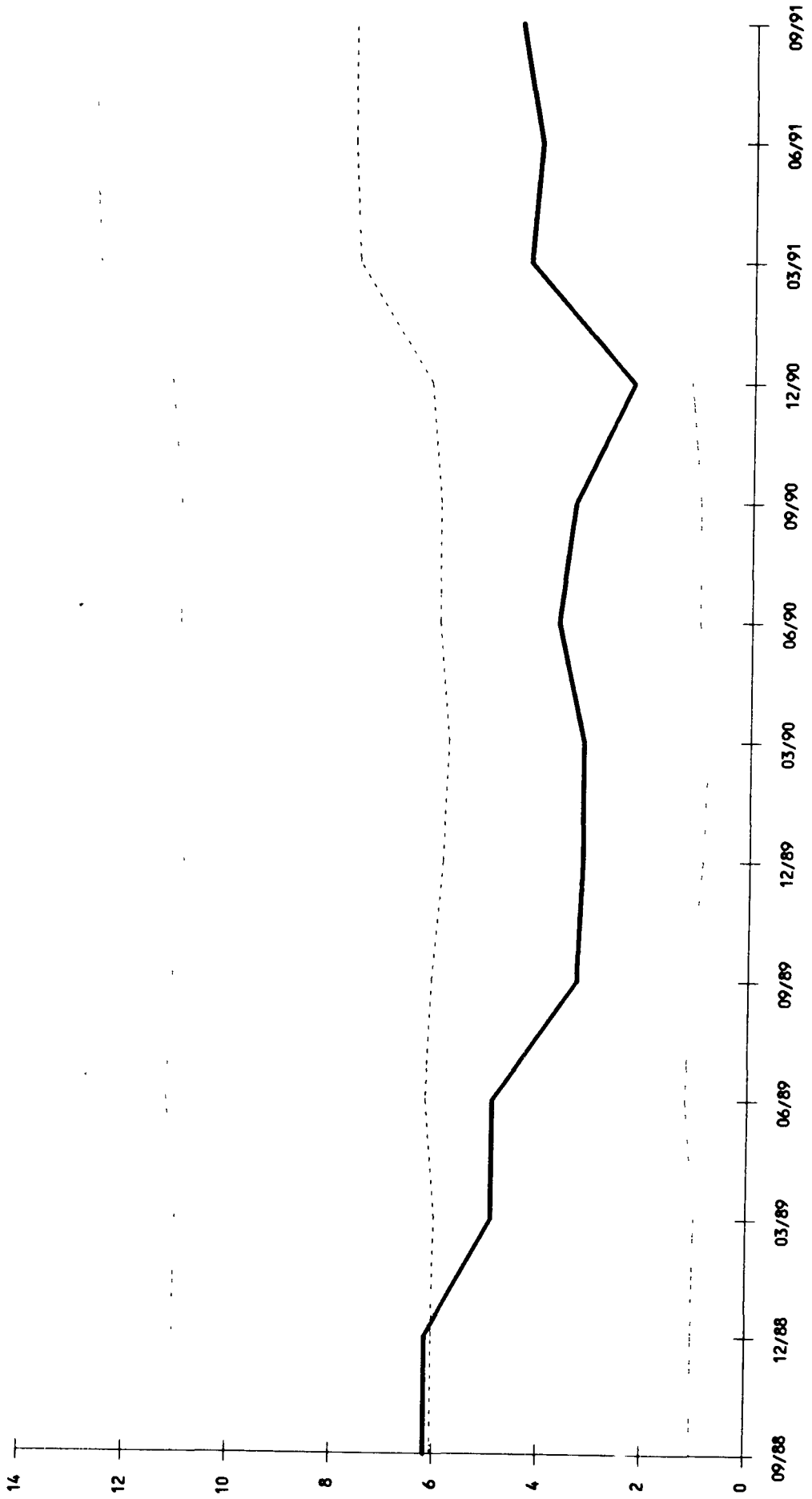
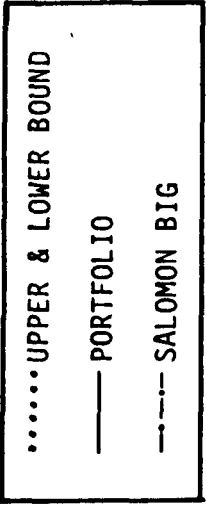


EXHIBIT 12



A Rated Corporates, Actual vs. Guidelines





888 Rated Corporates, Actual vs. Guidelines

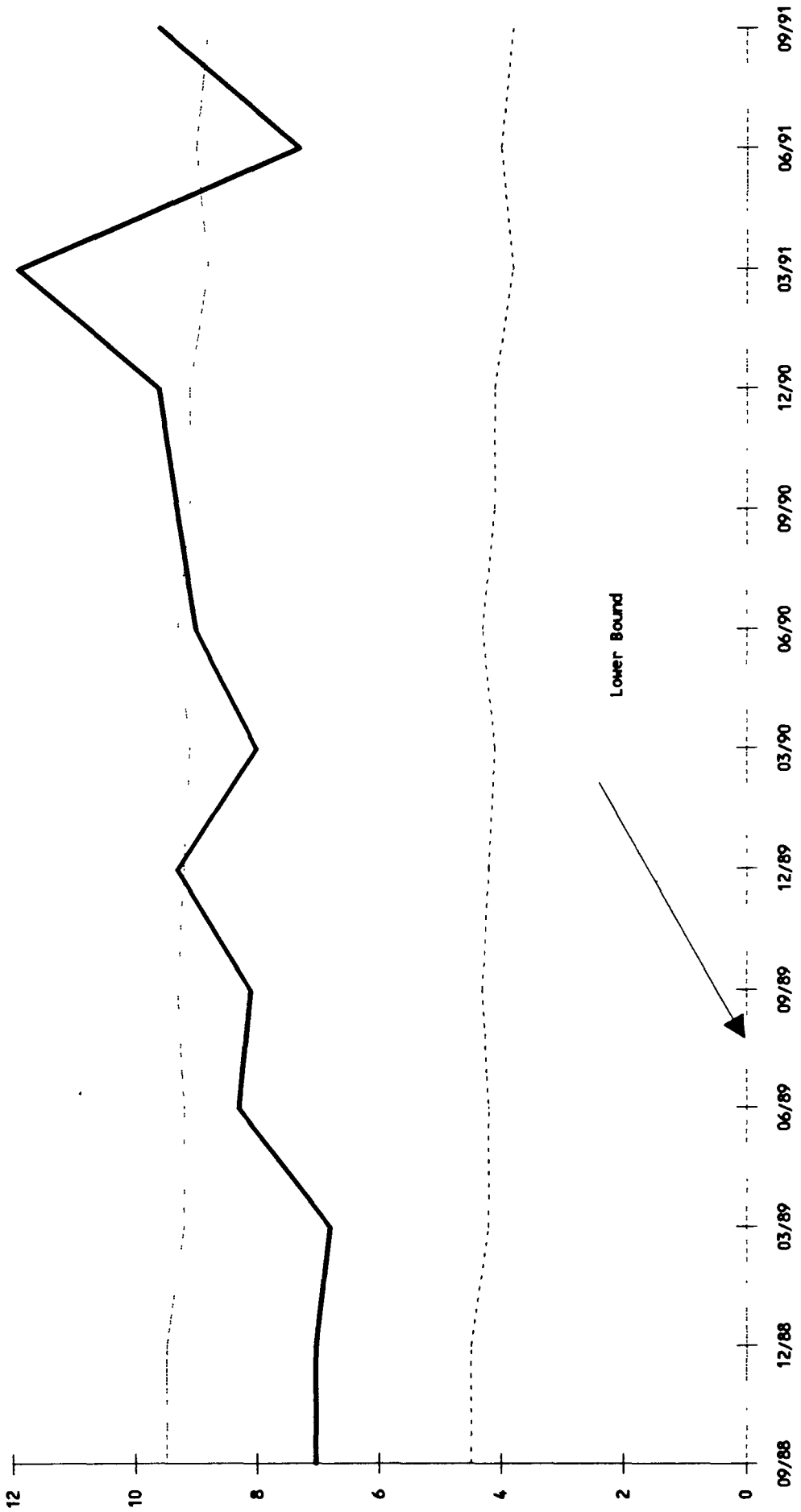
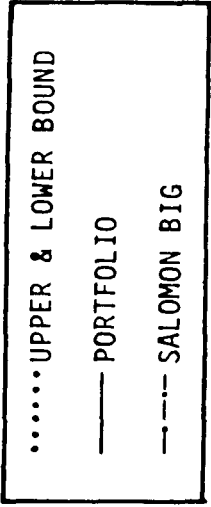


EXHIBIT 14



0-4.99 Year Maturities (Government) Actual vs. Guidelines

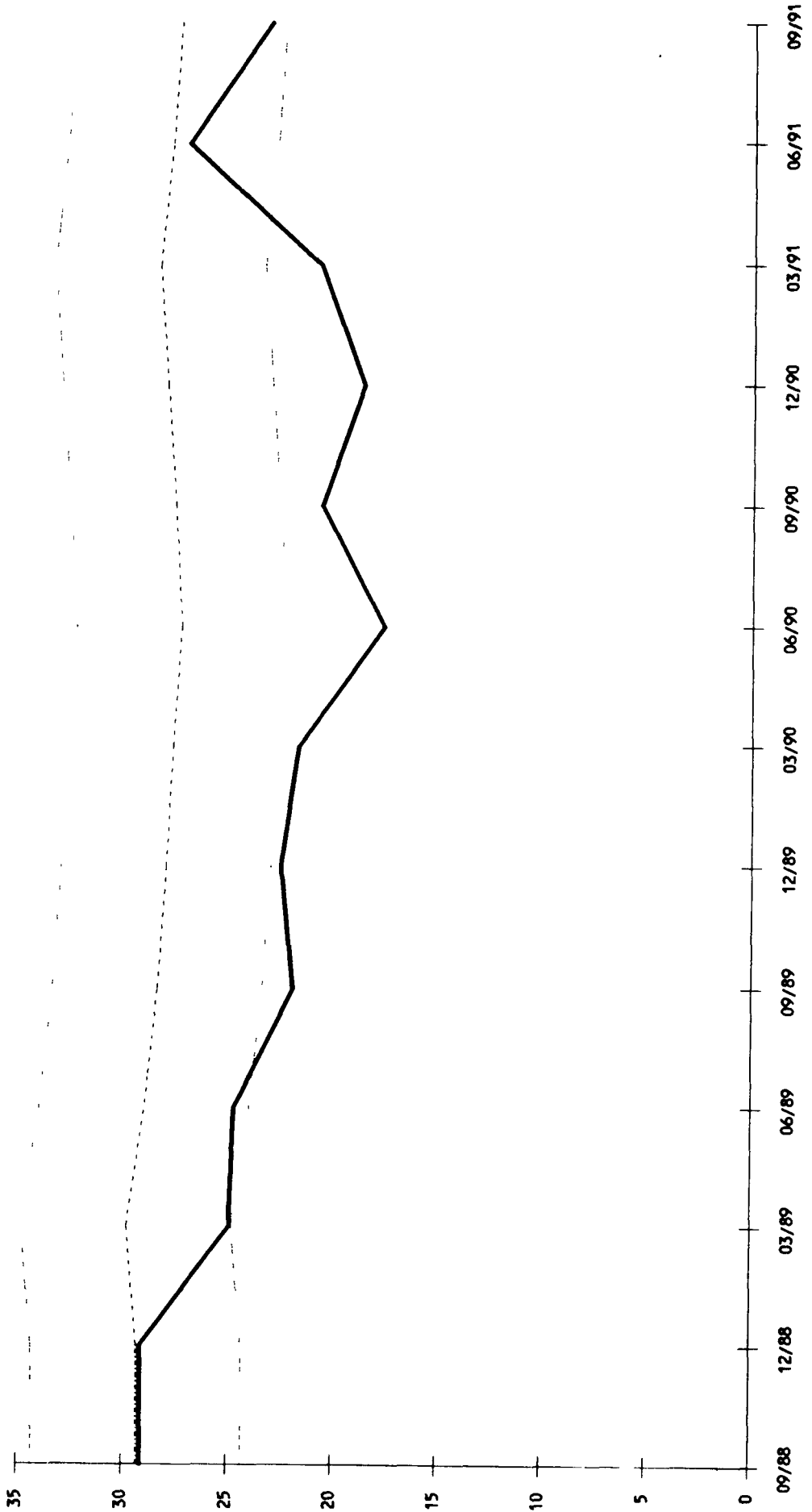
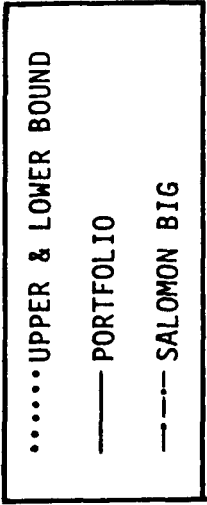


EXHIBIT 15



5-9.99 years Maturity (Governments) Actual vs. Guidelines

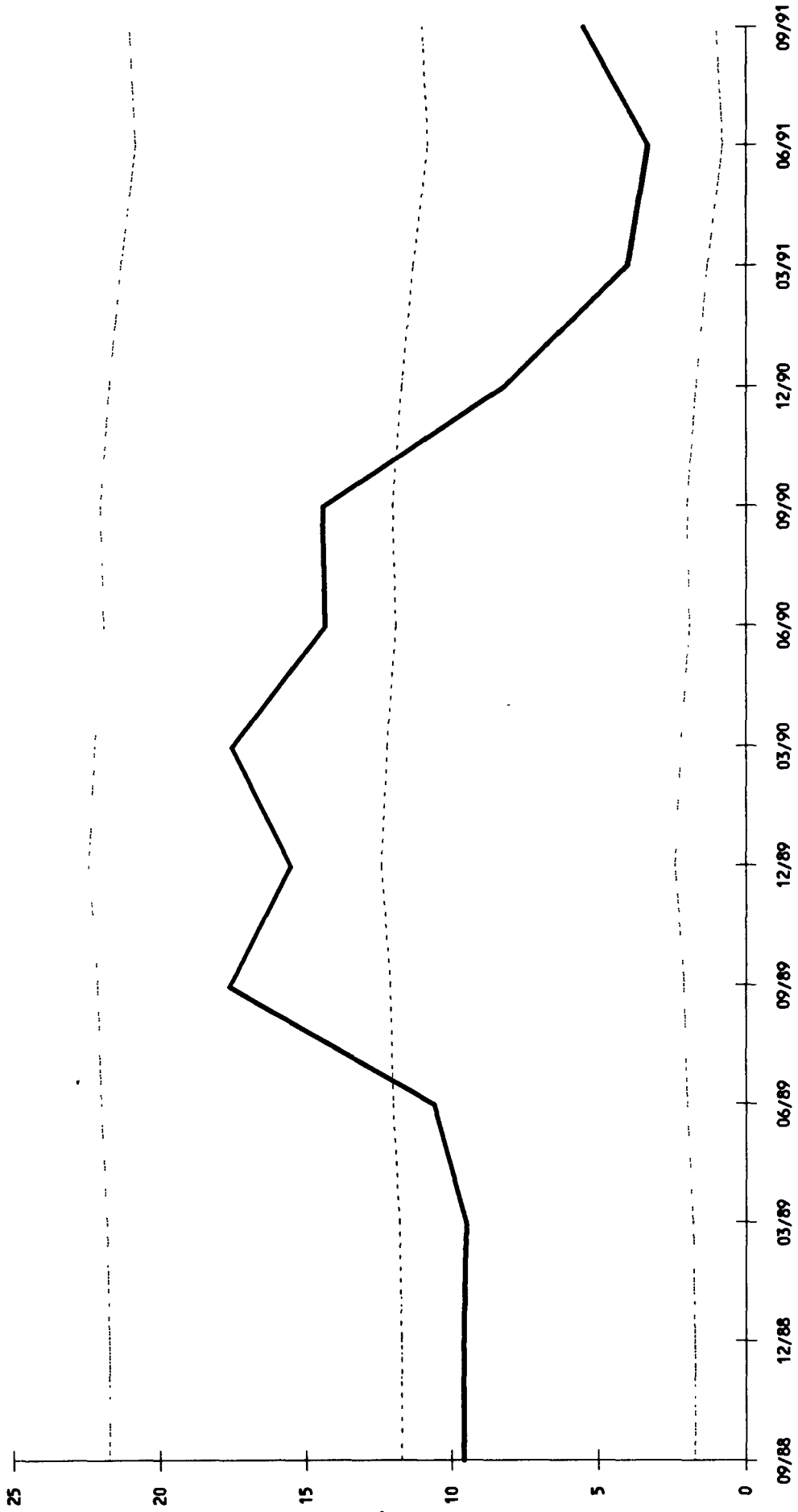
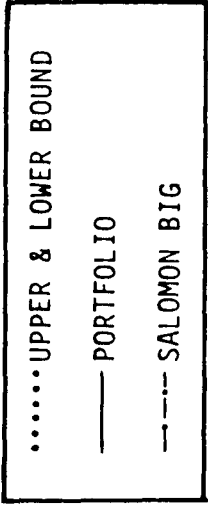


EXHIBIT 16



10+ Maturity (Governments) Actual vs. Guidelines

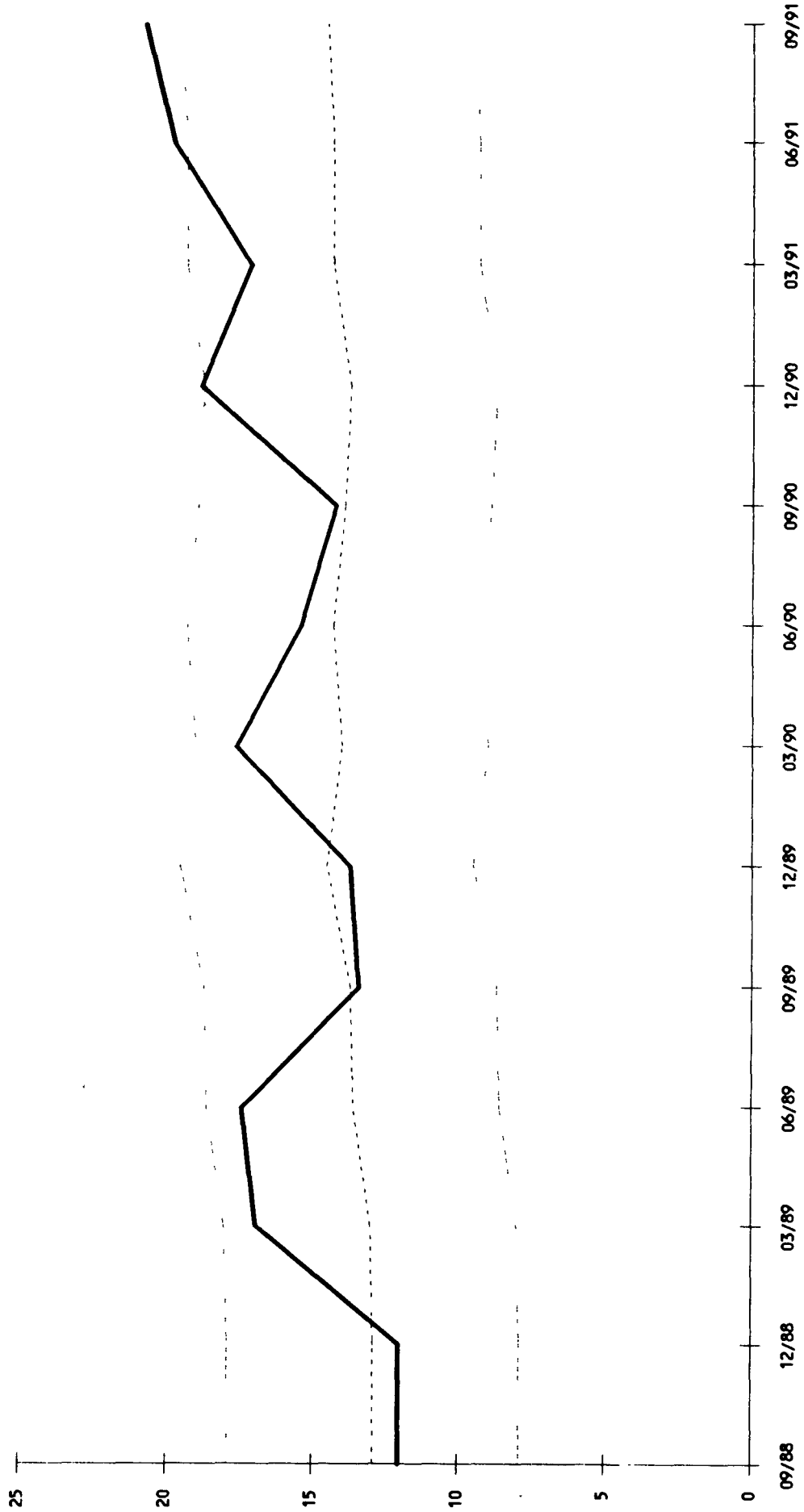


EXHIBIT 17

PERFORMANCE RESULTS

		Portfolio	Salomon BIG
1988	3Q	1.78	1.95
	4Q	0.96	0.76
1989	1Q	1.30	1.20
	2Q	7.63	7.93
	3Q	1.15	1.03
	4Q	3.65	3.69
1990	1Q	-0.63	-0.76
	2Q	3.58	3.62
	3Q	0.84	0.97
	4Q	5.15	5.07
1991	1Q	3.28	2.63
	2Q	1.84	1.80
	3Q	5.68	5.69
through 11/91	4Q	2.06	1.97
Cumulative		45.42	44.38
Annualized		11.58	11.35

EXHIBIT 18

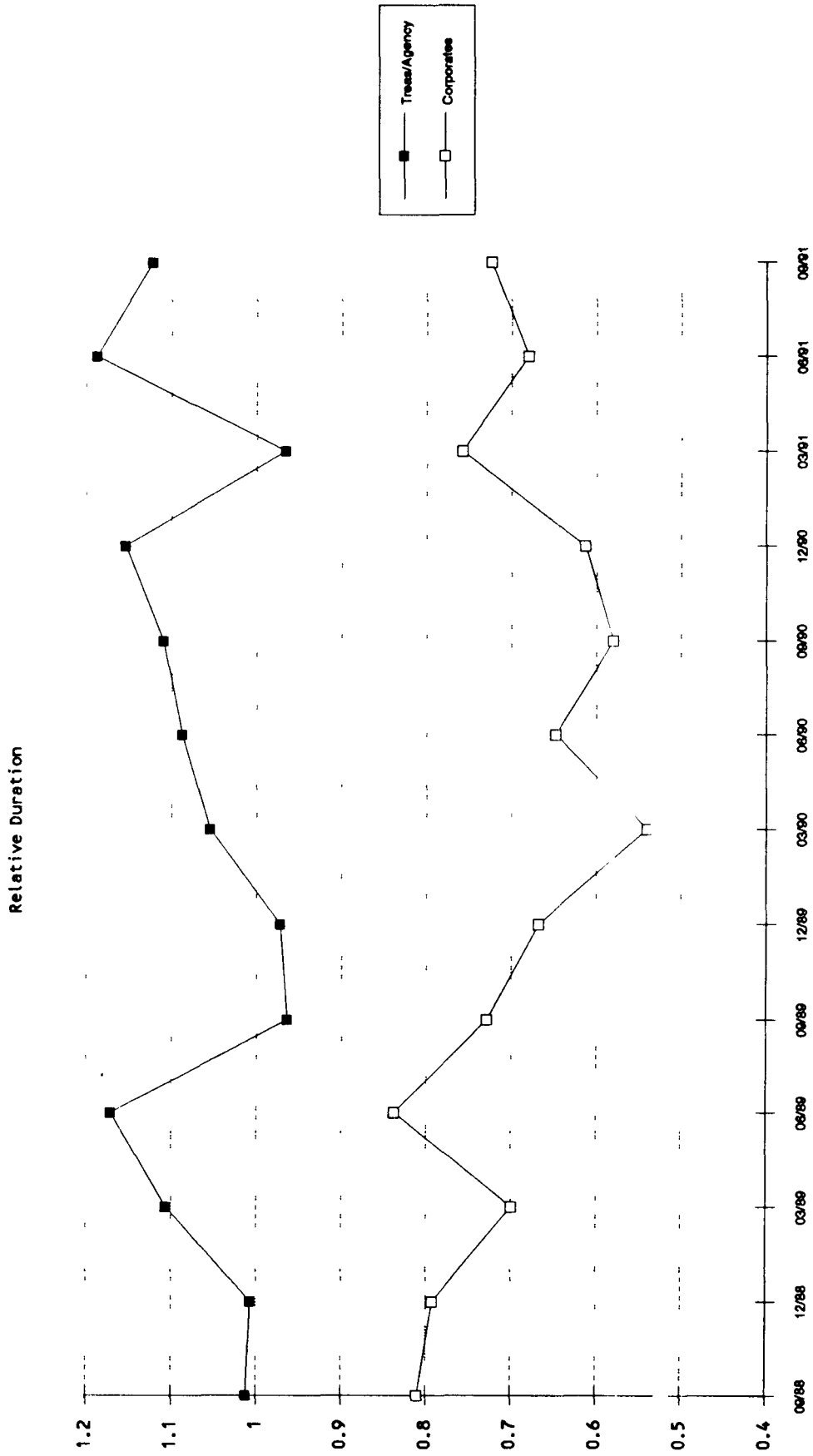


EXHIBIT 19

Finance Holdings Relative to the Market

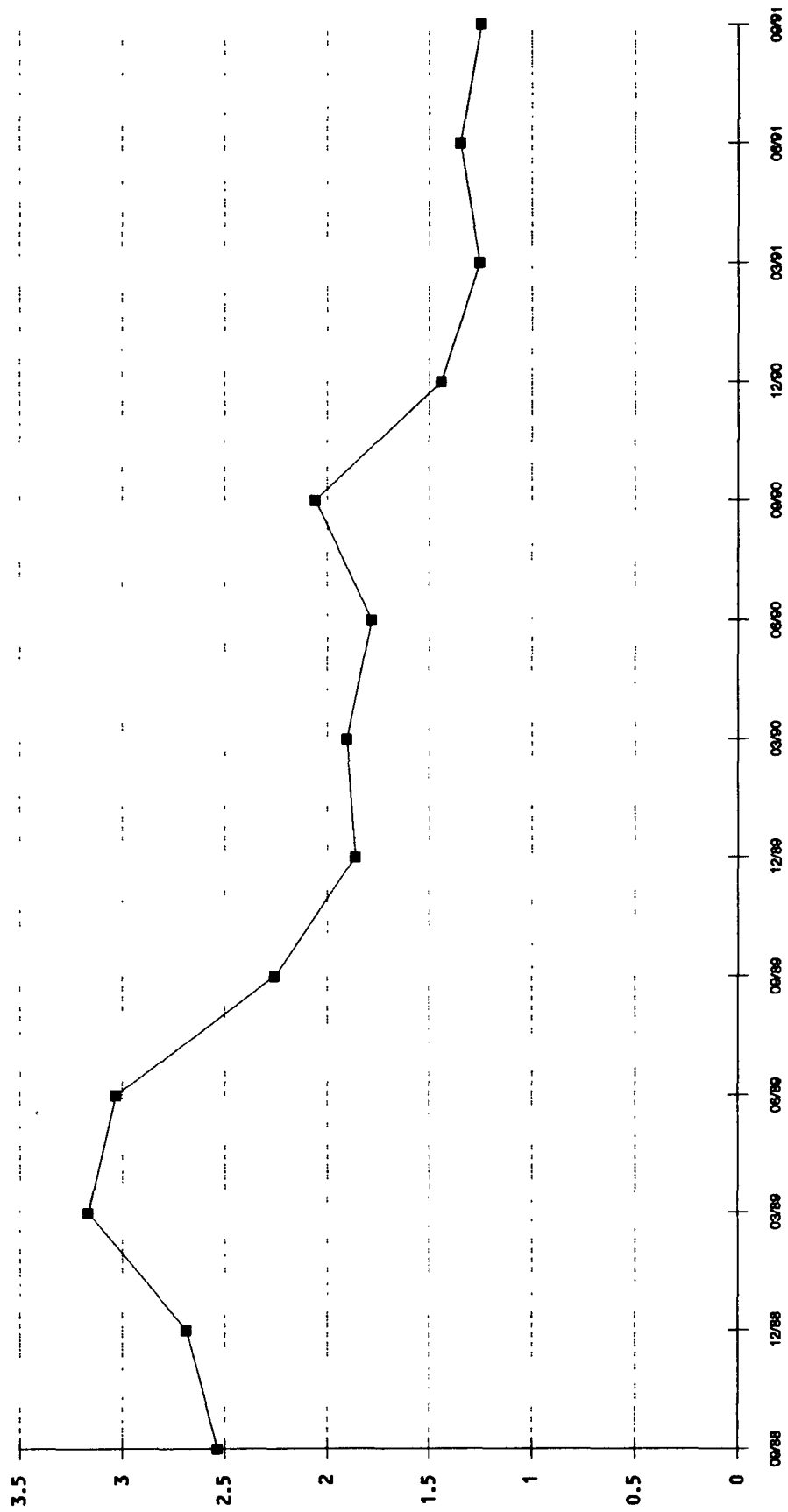
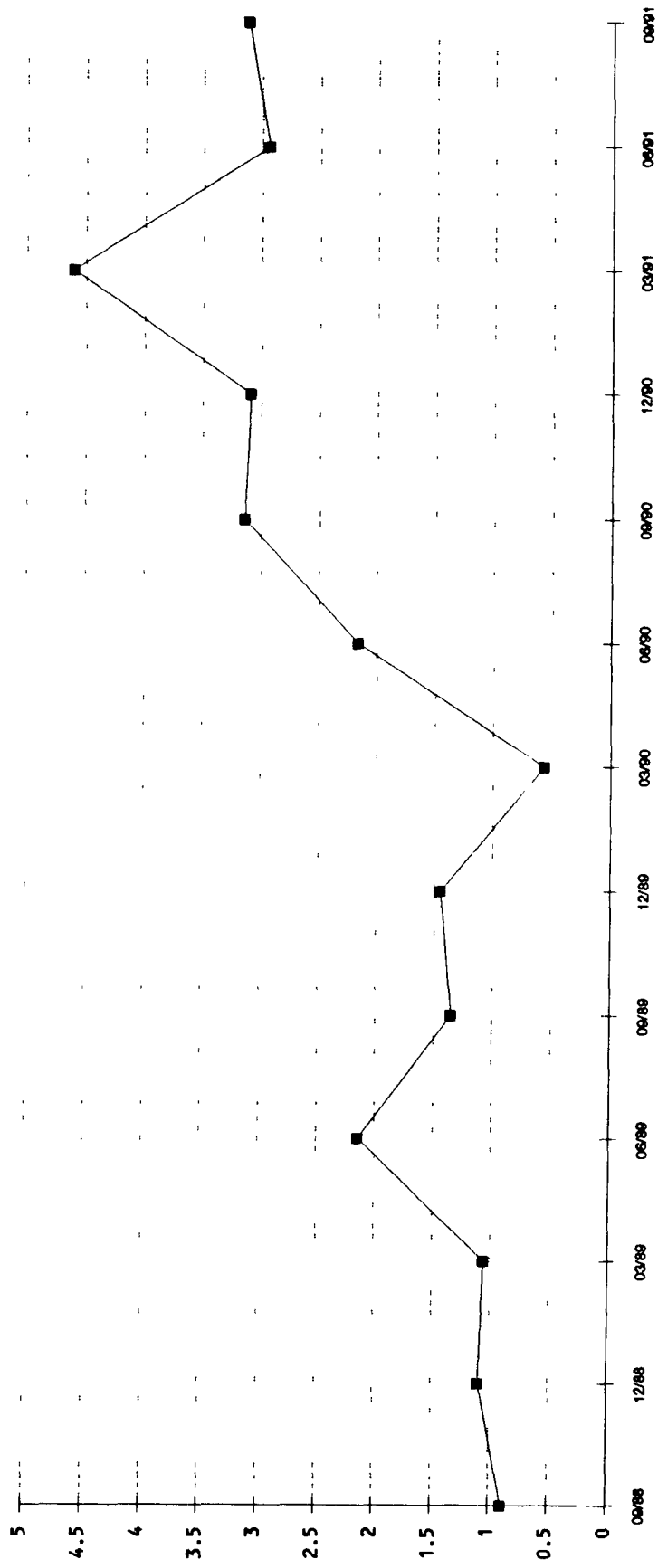


EXHIBIT 20

Bank Holdings Relative to the Market



ANNUAL REVIEW OF BEA ASSOCIATES CONTRACT

- I. Overview
- II. Investment Approach
- III. Performance
- IV. Summary of Board Actions to Date
- V. Conclusions

TABLE I - Comparison of Actual Portfolio Performance with State Street STIF Benchmark

TABLE II - Comparison of Sub-Period Cumulative Performance

TABLE III - Sources of Return by Strategy Cumulative Inception to Date 4/1/89 to 12/31/91

ANNUAL REPORT OF BEA ASSOCIATES CONTRACT

I. Overview

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

II. Investment Approach

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

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

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

- o Hedged Puts
- o Market Spreads
- o Box Spreads
- o Hedged Currency Positions

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

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

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

Hedged Currency Positions are market neutral and similar to the hedged put strategies using stock index options and futures. To implement their strategy, BEA uses listed and/or over-the-counter currency transactions, including forward foreign exchange contracts and currency options and futures. BEA has been using the currency strategy in the SBI's portfolio since 4/1/91.

BEA primarily used the hedged put and hedged currency strategies. The market has become more efficient and therefore BEA rarely finds an opportunity to use the market and box spread strategies.

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

III. Performance

Table I shows BEA's quarterly, calendar year, and cumulative performance relative to its benchmark. For the period April 1, 1987 to November 30, 1991 BEA outperformed its benchmark by 1.43% annualized. This result is within BEA's expected range of 100 to 200 basis points value-added.

Table II breaks the full period into two nonoverlapping sub-periods. The period covering April 1, 1987 to March 31, 1989 (A) represents the period prior to a change in BEA's assignment April 1, 1989. This change, described in the section titled "Summary of Board Actions to Date" below, suggests that these periods be analyzed separately. BEA outperformed its benchmark for the sub-period covering April 1, 1987 to March 31, 1989 by 0.58% annualized. BEA outperformed its benchmark for the sub-period covering April 1, 1989 to November 30, 1991 (B) by a much greater margin. On an annualized basis, performance during this latter sub-period exceeded the benchmark by 2.07%. The higher performance was accomplished with a higher level of active risk (standard deviation) than during the earlier period (0.65% versus 2.10% respectively). The increase in active risk over the latter sub-period is the direct result of the assignment change imposed by the SBI.

TABLE 1

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

		Market Value \$(000)	Total Portfolio	Benchmark	Value of Active Mgmt.
1987	2Q	101,358	1.37%	1.60%	
	3Q	103,525	2.14	1.65	
	4Q	105,867	2.26	1.77	
1987 (9 mos.)			5.87%	5.10%	0.73%
1988	1Q	108,161	2.17	1.73	
	2Q	109,828	1.54	1.72	
	3Q	112,179	2.14	1.90	
	4Q	114,633	2.19	2.05	
1988			8.28%	7.60%	0.63%
1989*	1Q	21,393	2.06	2.26	
	2Q	21,806	1.99	2.36	
	3Q	22,253	2.05	2.18	
	4Q	23,402	5.16	2.11	
			11.71%	9.21%	2.29%
1990	1Q	24,233	3.55	2.04	
	2Q	25,039	3.33	2.03	
	3Q	25,480	1.76	1.98	
	4Q	26,138	2.58	1.95	
1990			11.69%	8.25%	3.18%
1991	1Q	26,738	2.30	1.76	
	2Q	27,058	1.20	1.52	
	3Q	27,398	1.22	1.44	
Through 11/91	4Q	27,604	0.75	0.89	
1991 through 11/91			5.57	5.72	-0.13
Cumulative			51.02	41.34	
Annualized			9.23	7.70	1.43
STD Dev.			1.65	0.31	1.56

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

TABLE II
BEA Associates
Comparison of Sub-Period Cumulative Performance

	Total Portfolio	Benchmark	Value of Active Mgmt.
A. For period 4/1/87 thru 3/31/89 (24 months)			
Cumulative	17.00%	15.65%	
Annualized	8.17	7.54	0.58%
Std. Dev.	0.65	0.25	0.64
B. For period 4/1/89 thru 11/30/91 (32 months)			
Cumulative	29.07%	22.22%	
Annualized	10.04	7.81	2.07%
Std. Dev.	2.10	0.35	1.98

The following table shows how BEA has added value since 4/1/89. BEA provides this performance attribution which is not available prior to 4/1/89.

TABLE III
Sources of Return
4/1/89-12/12/91

	Cumulative	Annualized
Hedged Puts	6.46%	2.30%
Market Spread	0.00	0.00
Currency Straddle	(0.32)	N.A.
Box spread + Cash Management	23.90	8.10

Table III shows that most of the absolute return is from the box spread and cash management (23.90%). This compares to a State Street STIF return of 22.72% over the same period. Most of the value-added during this period was from hedged put positions. During this period, BEA had no market spread positions.

IV. Summary of Board Actions to Date

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

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

V. Conclusions

BEA has added value on an annualized basis since the inception of the account consistent with expectations:

	Annualized	Annualized Basis
4/1/87-3/31/89	8.17%	0.58%
4/1/89-11/30/91	10.04	2.07
Performance Expectation	100-200 basis points	

Staff recommends that BEA's contract be renewed for an additional one year period.

DETAILED REVIEW OF ROSENBERG INSTITUTIONAL MANAGEMENT

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- 1 - Risk Analysis Summary
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- 1 - Risk Factor Exposures
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- 4 - Monthly Attribution Analysis - Summary and Risk Factors
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**EXTERNAL MANAGER REVIEW
ROSENBERG INSTITUTIONAL MANAGEMENT**

I. ORGANIZATIONAL DETAIL

A. Ownership

Rosenberg Institutional Equity Management (RIM), a limited partnership, is owned by its three general partners (Barr Rosenberg, Kenneth Reid, and Marlis Fritz) and one limited partner (Rosenberg Alpha). Mr. Rosenberg is one of three general partners of Rosenberg Alpha and also owns a controlling interest in RIM. RIM's responsibilities include implementing the U.S. domestic equity product and marketing the U.S. and Japanese equity products and any future products that are developed to investors within the U.S.

In 1987 RIM entered into a joint venture arrangement with Nomura Group of Tokyo and formed Rosenberg Asset Management (RAM). RAM markets the current U.S. and Japanese equity products and any future products that are developed to investors in Japan and the far east. RIM owns 51% of RAM with Nomura owning the other 49%.

In addition to being a limited partner in RIM, Rosenberg Alpha also wholly owns Barr Rosenberg Investment Management (BRIM) and Barr Rosenberg European Management (BREM). BRIM, a registered investment advisor in the U.S., was organized in 1989 and concentrates on providing research and development in the area of investment technology. BREM, a registered investment advisor in the United Kingdom, markets the current U.S. and Japanese products and any future products developed to European investors.

B. Portfolio Management Responsibilities

Initially Richard Bartel was the portfolio manager for the SBI account. In June 1989 Mr. Bartel left the firm for personal reasons and Thomas Mead took over and continues to have responsibility for servicing the SBI account. Since RIM's investment decision making process is completely computerized, the change in portfolio manager had no effect on the investment structure of the SBI account. In regards to client servicing, staff feels that the high quality of service has been maintained since the inception of the account.

C. Assets Under Management

Equity Assets Under Management

	Equity only Accounts	Number of Clients	Equity only Market Value (In Millions)
Dec. 1985	3	3	\$189
Dec. 1986	12	10	1037
Dec. 1987	24	21	2091
Dec. 1988	36	30	4222
Dec. 1989	55	37	8020
Dec. 1990	63	43	7279
Dec. 1991	52	38	6437

Through 1990 RIM experience rapid growth in their assets and number of accounts. However, in 1991 RIM suffered a decrease in accounts and assets under management. RIM intends to stop taking new accounts when they reach 60 client relationships.

Staff is concerned about the rapid growth and expansion of RIM's business endeavors. Along with the rapid expansion of its domestic product, they have also grown their Japanese product (RAM) from zero to 6 client relationships and \$441 million of assets under management in the last 3 years. Their Japanese product has had as many as 19 clients and \$1,214 million in assets. RAM claims that their accounts and assets under management tend to be more volatile because their client base historically has been corporate and insurance assets rather than long-term pension assets. Therefore, their client base tends to be determined more by overall market levels and tax considerations than relative performance. In addition, they are currently in the process of starting their European product and they hope to begin marketing that product in the near future. Staff is concerned that their rapid expansion has implications for the firm's ability to manage not only their growth in assets but also the growth in personnel and organizational structure.

D. Personnel Turnover

RIM's turnover among its professional staff has been low. Since inception of the firm, RIM has had only three employees leave the firm. Overall, their staff has grown considerably due to their strong asset growth as shown below:

Year Ending	Total Employees
1985	10
1986	14
1987	18
1988	21
1989	25
1990	27
1991	27

II. INVESTMENT APPROACH

A. Investment Process

Investment Philosophy

RIM believes that the market is inefficient in the relative valuation of individual companies within groups of similar companies. Moderate valuation errors are present in every sector of the market. By applying quantitative analysis to fundamental data, RIM identifies and purchases undervalued stocks in each group and holds them until their prices appreciate relative to their group. RIM typically purchases stocks which are 10 percent cheaper than similar stocks and holds them until the market corrects the relative misvaluation to within 3 percent.

RIM does not try to generate excess return by timing the market or making bets on various factors such as size, growth, or specific industries or sectors. RIM tries to generate a high percentage of their value added through good stock selection.

Stock Selection

RIM's investment strategy focuses on stock selection. Economic, industry, or sector analysis does not apply. Their investment decisions are based entirely upon

the analysis of a company's fundamentals relative to other similar companies' fundamentals.

RIM's quantitative valuation system uses several computer programs to analyze accounting data on 3500 companies. Unlike traditional analysis which typically assigns an entire company to one industry, RIM compares each company's individual business segments with similar business operations of other companies. RIM then integrates these valuations into a single fundamental valuation for the total company.

RIM then looks at the difference between their valuation and the market price and calculates an expected rate of return (alpha) by adjusting the misvaluation for the rate at which the market will correct the error. Stocks with large positive alphas are candidates for purchase. Portfolio holdings with small positive, zero, or negative alphas are sell candidates.

Additionally, RIM uses quantitative techniques to analyze the short term price behavior of a purchase/sale candidate. This analysis helps them to determine the timing of their trades and enables them to purchase stocks from supply and sell stocks into demand which reduces their trading costs.

RIM does not have any formal research groups or investment committees. The computer programs determine the buys and sells for the traders to execute. RIM's investment staff spends the majority of their time monitoring the individual portfolios and researching, checking, and structuring the data so that the models will make the best stock selections possible.

Portfolio Construction

RIM's optimizer sets "targets" for portfolio exposure for various risk factors after analyzing the risk characteristics of the benchmark. It then uses the information developed by the valuation system to maximize the trade-off between obtaining the highest alpha and eliminating unnecessary active risk. Data on each executed trade is "looped back" into the optimizer, which reassesses the portfolio before recommending additional trades. Since the optimizer operates in real time, RIM can respond quickly to investment opportunities and portfolios are reviewed constantly during the day for compliance with the client's benchmark exposures.

B. Prominent Characteristics

An analysis of RIM's past portfolios reveals some risk factor and sector exposures relative to a market universe. The following risk and sector exposure highlights were derived from Exhibits 1 and 2.

Risk Exposure Highlights

RIM's portfolios relative to the BARRA Hicap Universe show a consistent bias towards a higher exposure to book-to-price (B/P) and earnings-to-price (E/P) and lower exposure to size. The tight range between the maximum and minimum positions provides additional confirmation of RIM's stated philosophy in regards to controlling risk exposure.

Sector Exposure Highlights

RIM's portfolios relative to the S&P 500 show an overweighting in utilities and an underweighting in consumer non-durables and energy.

III. BENCHMARK

A. Construction Process

Since inception RIM has constructed its own benchmark. On a quarterly basis the construction process starts with the Russell 3000 stock index after elimination of all the SBI restricted stocks from the index. The index is then reweighted based on the market capitalization of each unrestricted stock. Lastly, the benchmark incorporates a cash weighting of 2.5%.

B. Benchmark Risk Factor and Sector Profile

A valid benchmark should exhibit risk factor and sector exposures similar in direction and magnitude to average historical portfolio exposures. As can be seen from Exhibit 1, RIM's average benchmark risk factor shows a reasonably close similarity to most of the average (mean) SBI portfolio risk factors. Only the B/P and E/P show a significant deviation. Appendix 3 provides more detailed information showing the risk factors for RIM's benchmark on a quarterly basis.

With respect to sector weights, Exhibit 2 also shows a reasonably close similarity between RIM's benchmark and the SBI portfolio. Only the basic material and the financial sectors show a mean deviation that is somewhat large. The range between the maximum and minimum for the sectors is within expectations since RIM allows the industries that make up the sectors to deviate $\pm 3\%$ from the benchmark. Appendix 2 and 3 show the sector weights for the SBI's actual portfolio and RIM's benchmark on a quarterly basis.

RIM's benchmark shows a reasonably close similarity in direction and magnitude to the average historical exposure of the SBI portfolio. However, staff strongly feels that the E/P and B/P risk factors in the benchmark should be adjusted to reflect RIM's permanent bias to those factors. Staff still feels that the risk factor and sector profile provides some evidence that RIM's benchmark should be a reasonable benchmark

C. Benchmark Coverage and Turnover

Benchmark coverage measures the extent to which the benchmark contains securities actually held by the manager. Coverage will vary depending on the level of discipline exhibited in a manager's definition and implementation of its investment process. A valid benchmark should exhibit a coverage ratio of 80% or better.

The stocks that make up the active portfolio imply that the portfolio manager believes that particular stock will do well relative to the other stocks in the manager's benchmark. Therefore, the weighting of each of the holdings in the active portfolio should exceed the corresponding weights assigned to the same securities in the benchmark.

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

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

Table I

4/89 - 9/91 Semi-Annual Data	Benchmark Coverage	Actual Portfolio Weights Greater Than Benchmark Weights	Semi-Annual Benchmark Turnover
Average	93.9%	96.8%	4.4%
Minimum	92.5	91.9	3.5
Maximum	94.8	98.7	6.3

In terms of coverage, RIM's benchmark, on average, captured more than 90% of RIM's actual portfolio since the inception of the account. In addition, RIM's average semi-annual turnover was a very low 4.4%. Both the coverage and turnover analysis support the validity of using RIM's benchmark as a baseline from which to conduct performance analysis.

In regards to actual weights versus benchmark weights, RIM's results show that on average 96.8% of the actual weights were greater than their corresponding benchmark weights with a range of 91.9% to 98.7%. While the minimum result is

somewhat low, on average the results support the validity of using RIM's benchmark as a baseline from which to conduct performance analysis. The less than 100% result could be due to buying into a new position or exiting from a current one.

IV. PERFORMANCE ANALYSIS

A. Benchmark Explanatory Power

Information Ratio Analysis

Because the manager's benchmark more accurately represents the manager's investment style than the broad market, it should do a better job of explaining the returns generated by the manager. Calculating an information ratio (IR) provides a useful analytical measure to determine the benchmark's explanatory power. The IR compares the value of active management (VAM) to the standard deviation of the VAM. Holding VAM constant, a valid benchmark should decrease the amount of noise in the residual returns reducing the VAM standard deviation and produce a larger IR than using a broad market index (e.g. Wilshire 5000). Table II summarizes an IR analysis of RIM's actual returns relative to their benchmark and the Wilshire 5000.

Table II

RIM's For the Time Period 4/1/89 to 9/31/91	Actual vs. RIM's Benchmark	Actual vs. W5000
Cumulative Annualized VAM	-1.61	-2.79
Annualized Standard Deviation of VAM	2.26	2.39
Information Ratio	-.71	-1.17
Information Ratio T-Statistic	-1.15	-1.90

The RIM benchmark achieves only a minimal reduction in the VAM standard deviation relative to using the Wilshire 5000 as a benchmark (2.26 vs. 2.39). Over this time period this analysis indicates that the RIM benchmark did only a marginally better job of explaining the returns generated by RIM than the Wilshire 5000. This is not surprising since RIM's benchmark is very similar to the Wilshire 5000 other than the exclusion of the restricted stocks, staff would expect to see less reduction in the VAM standard deviation for RIM than other managers who have investment universes that are significantly different than a broad market index.

Residual Correlation Analysis

The explanatory power of the manager's benchmark can also be derived from correlation analysis using residual returns based on the manager's actual portfolio returns versus those of the market (EXM), the manager's VAM, and the manager's benchmark returns versus those of the market (MFT). A valid benchmark should exhibit a positive correlation between EXM and MFT. Intuitively the correlation should be positive because when the manager's benchmark (or investment style) performs well relative to the market, one would expect the manager's portfolio will also do well relative to the market. On the other hand, a valid benchmark should over time produce a roughly zero correlation between MFT and VAM, because the manager's ability to add value relative to the benchmark should not be affected by the performance of the benchmark (i.e. style) relative to the market. Table III displays RIM's correlation analysis using the Wilshire 5000 to represent the market.

Table III

	EXM	MFT	VAM
Portfolio vs. Market(EXM)	1.00		
Benchmark vs. Market (MFT)	.33	1.00	
Portfolio vs. Benchmark (VAM)	0.91	-0.08	1.00

RIM's benchmark produces a reasonably strong correlation between EXM and MFT and also generates a zero correlation between MFT and VAM. This provides reasonably good evidence that the RIM benchmark can do a better job of explaining the returns generated by the manager than the Wilshire 5000. The EXM/MFT correlation although reasonable does have room for improvement. Adjusting the benchmark to reflect the E/P and B/P bias in the actual portfolios could potentially improve the correlation results of this analysis.

B. Portfolio Performance Attribution

Risk Factor

Exhibit 3 shows that the risk factor bets were the only area that provided value added since the inception of the account. The largest contributor was the E/P risk factor which contributed approximately half (0.71% annualized) of the total value added (1.39% annualized) contributed by all the risk factors. The other risk factor where there was a significant bet relative to the benchmark, B/P, provided a positive but insignificant value added (0.06% annualized). Other risk factors that provided some value added were size, success, and variability in markets.

Appendix 4 shows the monthly value added contributions for the attribution summary and for each risk factor.

Industry Segments

Exhibit 3 shows that the industry factors over the time frame analyzed are reflective of what staff expected given RIM's risk control philosophy. Overall, they generated a small negative value added (-0.23% annualized) from industry bets but did not deviate significantly from zero at any time during the time period analyzed. In addition, Exhibit 4 shows that none of the individual industries deviated significantly from zero. Appendix 5 shows the monthly value added contribution for each industry.

Stock Selection

Exhibit 3 shows that stock selection was the primary cause of RIM's under performance since the inception of the account. Over the time period analyzed, RIM generated a -2.73% annualized value added through stock selection. Appendix 4 shows that the negative value added occurred quite consistently in that 22 of the 30 months analyzed were negative to some degree.

RIM conducted an analysis to find the underlying reasons for their poor performance in this area. They concluded that the market over the last couple of years has rewarded strong growth companies that have strong consistent growth rates and high return on investments (ROE). They call this a "quality growth" phenomenon. Their research has shown that this also occurred for various lengths of time in the past. Exhibit 5 shows their analysis of how these quality growth companies have performed since 1967. Exhibit 6 shows RIM's simulated performance for 1967-1984 and actual performance after 1984 to present. RIM claims that a fairly high correlation exists between the strong performance by the "quality growth" companies and their poor relative performance. RIM claims that they will underperform when the market focuses on consistent growth, high ROE and other factors that are not consistent with their investment process that focuses on mispricing of asset valuations. They maintain that their approach will show significant value added when the market stops focusing on these characteristics and returns to valuing stocks based on asset valuations.

Attribution Analysis Conclusion

Overall, Exhibit 3 shows that RIM generated a negative value added of -1.57% annualized over the time frame analyzed. In addition, if the benchmark had reflected the constant positive bias that RIM has towards EP and B/P risk factors, the total negative value added would have been significantly greater. Also staff is concerned about the very high ratio of months that generated negative value added due to stock selection. RIM claims that 70% of their value added will be generated by their stock selection ability. Given RIM's "quality growth"

explanation and the relatively short time period (2.75 years), staff still is concerned about RIM's ability to add value over the long run and how that value added will occur. When RIM was initially hired, RIM stated that they would add value by consistently winning in small increments and would not incur any prolong sharp downturns. However, now it appears according to RIM's back testing of their valuation model they can incur three to five year periods where they do underperform their benchmark. Staff believes this represents a significant change in expectations and is concerned that there may be other undesirable factors which may negatively impact future performance.

VAM Analysis

The VAM graph (Exhibit 7) shows that RIM has not been able to add value on a cumulative basis since the inception of the account. In fact, the graph shows that there is a 90% probability that RIM does not have the ability to add value relative to their benchmark.

V. SUMMARY OF BOARD/IAC ACTIONS TO DATE

In March 1989 the Board approved a recommendation to hire RIM to manage an account of \$100 million.

In October 1990 RIM received an additional \$150 million of SBI funds to help reduce the misfit of the active equity program relative to its asset class target (Wilshire 5000).

VI. CONCLUSION

After thorough review, staff does not identify enough evidence to support the retention of RIM and recommends that RIM's contract not be renewed. The following highlights staff's primary reasons for not retaining RIM's services.

Qualitative Concerns

RIM has experienced rapid growth and continues to look for areas in which it can expand and develop new products. This is occurring at a time when there are problems with their domestic equity product relative to the expectations they initially claimed.

RIM's additional back testing on its valuation model indicates that it could easily experience 3 to 5 year periods of negative performance.

Quantitative

RIM has not added value on a cumulative basis relative to the benchmark and would have had a larger negative value added if the benchmark had properly reflected the consistent E/P and B/P price in the actual portfolios.

RIM's primary source of value added (stock selection) has consistently underperformed relative to its benchmark. This is significantly different than the performance expectations presented to the SBI during the selection process.

Exhibit 1

Risk Analysis Summary
Rosenberg

Date	# STKS	% Cash	Beta	VIM	SCS	SIZ	TRA	GRO	EP	BP	EVR	FLV	FOR	LBI	YLD	LCP
8903	522	0.00	1.02	0.04	0.06	-0.17	0.05	0.00	0.28	0.27	0.02	0.04	0.00	-0.05	-0.02	
8906	582	0.00	1.02	0.05	0.00	-0.18	0.06	0.05	0.29	0.33	0.16	0.00	-0.07	-0.10	0.00	
8909	556	0.00	1.03	0.07	-0.06	-0.21	0.06	0.05	0.30	0.31	0.16	-0.03	0.04	-0.02	-0.04	
8912	616	0.00	1.02	0.08	-0.05	-0.26	0.01	0.07	0.24	0.29	0.09	-0.03	0.01	-0.06	-0.06	
9003	637	0.00	1.01	0.05	-0.03	-0.33	0.02	0.04	0.28	0.33	0.07	-0.02	-0.03	-0.08	-0.05	
9006	684	0.00	1.01	0.03	-0.03	-0.33	0.06	0.03	0.30	0.35	0.10	-0.05	-0.03	-0.05	-0.05	
9009	674	1.30	1.02	0.07	-0.16	-0.27	0.08	0.03	0.25	0.31	0.10	-0.06	-0.06	-0.03	-0.02	0.08
9012	792	1.70	1.02	0.15	-0.14	-0.43	0.05	-0.01	0.29	0.35	0.04	-0.07	-0.15	0.03	-0.05	0.09
9103	693	1.44	1.02	0.14	-0.13	-0.47	0.04	-0.04	0.31	0.37	0.03	-0.04	-0.05	0.04	-0.04	0.10
9106	649	0.71	1.02	0.15	-0.11	-0.44	0.08	0.00	0.30	0.42	0.07	-0.03	-0.03	0.07	-0.02	0.09
9109	636	0.83	1.04	0.21	0.06	-0.37	0.06	0.01	0.30	0.42	0.12	-0.01	-0.05	0.08	-0.02	0.09
Mean	640	0.54	1.02	0.09	-0.05	-0.31	0.05	0.02	0.29	0.34	0.09	-0.03	-0.04	-0.02	-0.03	0.09
Min	522	0.00	1.01	0.03	-0.16	-0.47	0.01	-0.04	0.24	0.27	0.02	-0.07	-0.15	-0.10	-0.06	0.08
Max	792	1.70	1.04	0.21	0.06	-0.17	0.08	0.07	0.31	0.42	0.16	0.04	0.04	0.08	0.00	0.10
Std Dev	74	0.68	0.01	0.06	0.07	0.10	0.02	0.03	0.02	0.05	0.05	0.03	0.05	0.06	0.02	0.01
Bmk Avg	2838	1.82	1.02	0.09	-0.05	-0.24	0.04	0.06	0.00	0.06	0.06	0.00	-0.19	-0.01	-0.04	0.06

3/89-9/91

Exhibit 2

**Rosenberg
Sector Weights
Actual Portfolio Weight Less Benchmark Portfolio
April 1989 - September 1991**

	Cons Non-Dur	Cons Dur	Basic Mat	Cap Goods	Energy	Tech	Trans	Util	Fin
Minimum	-0.92	-2.38	0.02	-2.79	-2.34	-1.78	-0.71	-3.60	-5.78
Average	1.41	-0.54	2.45	-1.32	0.50	0.93	0.21	-0.59	-3.04
Maximum	3.44	1.47	5.42	0.11	3.37	4.09	0.85	2.79	0.24
Bmk Average	29.91	4.76	8.90	6.39	8.74	7.84	2.14	17.19	14.13

**Rosenberg
Sector Weights
Actual Portfolio Weight Less S&P 500
April 1989 - September 1991**

	Cons Non-Dur	Cons Dur	Basic Mat	Cap Goods	Energy	Tech	Trans	Util	Fin
Minimum	-5.80	-2.16	-0.95	-3.87	-5.84	-1.17	-0.49	-1.18	-0.65
Average	-3.41	-0.01	1.54	-1.93	-2.85	1.87	0.45	2.85	1.57
Maximum	-1.07	2.10	4.85	0.11	0.00	5.59	1.20	5.62	5.05
S&P 500 Ave.	35.61	4.06	9.63	6.77	11.95	6.94	1.76	13.83	9.43

EXHIBIT 3

**ROSENBERG
ATTRIBUTION ANALYSIS**

Summary

	6/89 - 5/90	6/90 - 5/91	6/91 - 11/91	Total	Annualized
E2 Risk Indices	0.46	2.15	0.88	3.52	1.39
E2 Industry Segments	0.70	-0.82	-0.45	-0.58	-0.23
Stock Selection	<u>0.32</u>	<u>-4.47</u>	<u>-2.64</u>	<u>-6.69</u>	<u>-2.73</u>
Total Alpha	1.48	-3.14	-2.21	-3.88	-1.57

Risk Indices

Risk Indice	6/89 - 5/90	6/90 - 5/91	6/91 - 11/91	Total	Annualized
Variability in Markets	-0.11	0.75	0.06	0.70	0.28
Success	0.04	0.35	-0.01	0.38	0.15
Size	-0.03	0.23	0.38	0.58	0.23
Trading Activity	0.00	0.00	0.01	0.01	0.00
Growth	0.04	-0.06	-0.04	-0.06	-0.02
Earnings/Price	0.93	1.07	-0.14	1.87	0.71
Book/Price	-0.89	0.04	0.70	0.16	0.06
Earnings Variation	0.04	-0.11	-0.10	-0.17	-0.06
Financial Leverage	0.08	-0.02	0.02	0.08	0.03
Foreign Income	0.32	0.21	-0.11	0.42	0.17
Labor Intensity	0.08	0.05	0.20	0.33	0.13
Yield	-0.02	-0.06	-0.07	-0.15	-0.06
Locap	<u>-0.01</u>	<u>-0.29</u>	<u>0.01</u>	<u>-0.29</u>	<u>-0.12</u>
E2 Risk Indices	0.46	2.15	0.88	3.52	1.39

EXHIBIT 4

**ROSENBERG
ATTRIBUTION ANALYSIS**

Industry Breakdown

Industry	6/89-5/90	6/90-5/91	6/91-11/91	Total	Annualized
Aluminum	0.01	0.00	0.01	0.02	0.01
Iron and Steel	-0.06	0.06	0.01	0.01	0.00
Precious Metals	-0.02	0.01	0.01	0.00	0.00
Misc. Mining, Metals	-0.06	-0.11	-0.05	-0.22	-0.09
Coal and Uranium	0.00	0.00	-0.01	-0.01	0.00
International Oil	-0.32	-0.28	-0.01	-0.61	-0.24
Dom Petroleum Reserves	0.11	-0.08	0.04	0.07	0.02
For Petroleum Reserves	0.15	0.00	-0.03	0.12	0.05
Oil Refining, Distribution	0.00	-0.04	0.00	-0.04	-0.02
Oil Service	0.16	-0.02	0.00	0.14	0.06
Forest Products	0.03	0.01	0.00	0.04	0.02
Paper	-0.11	-0.25	0.13	-0.23	-0.09
Agriculture, Food	0.17	0.37	-0.02	0.52	0.21
Beverages	-0.11	0.14	-0.08	-0.05	-0.02
Liquor	-0.01	-0.05	0.01	-0.05	-0.02
Tobacco	0.01	-0.45	-0.04	-0.48	-0.19
Construction	0.00	-0.20	-0.11	-0.31	-0.12
Chemicals	0.07	-0.27	-0.06	-0.26	-0.10
Tire & Rubber	0.02	0.00	-0.02	0.00	0.00
Containers	0.00	0.01	0.02	0.03	0.01
Producers	-0.13	0.23	0.09	0.19	0.08
Pollution Control	-0.10	0.25	0.10	0.25	0.10
Electronics	-0.03	0.34	-0.15	0.16	0.06
Aerospace	0.00	0.07	0.00	0.07	0.02
Business Machines	-0.13	0.67	-0.15	0.39	0.16
Soaps, Houseware	0.29	-0.24	-0.03	0.02	0.01
Cosmetics	0.05	0.21	-0.04	0.22	0.09
Apparel, Textiles	0.01	-0.14	0.03	-0.10	-0.04
Photographic, Optical	0.06	-0.05	0.08	0.09	0.04
Consumer Durables	-0.04	0.15	0.07	0.18	0.07
Motor Vehicles	-0.06	-0.69	0.22	-0.53	-0.21
Leisure, Luxury	-0.02	-0.11	-0.01	-0.14	-0.06
Health Care (Non-Drug)	0.01	-0.36	-0.04	-0.39	-0.16
Drugs, Medicine	-0.07	-0.24	-0.08	-0.39	-0.16
Publishing	-0.04	-0.14	0.10	-0.08	-0.03
Media	0.14	0.04	-0.12	0.06	0.02

EXHIBIT 4

Industry	6/89 - 5/90	6/90 - 5/91	6/91 - 11/91	Total	Annualized
Hotels	0.11	0.34	0.03	0.48	0.19
Trucking, Freight	0.00	0.02	0.00	0.02	0.01
Railroads, Transit	0.09	-0.30	0.00	-0.21	-0.09
Air Transport	0.07	-0.01	0.03	0.09	0.04
Transport by Water	0.02	-0.03	-0.01	-0.02	-0.01
Retail (Food)	0.06	-0.03	-0.02	0.01	0.00
Retail (All Other)	-0.06	0.14	0.05	0.13	0.05
Telephone, Telegraph	0.27	0.00	-0.14	0.13	0.05
Electric Utilities	-0.17	-0.15	-0.22	-0.54	-0.22
Gas Utilities	0.03	-0.09	0.01	-0.05	-0.02
Banks	0.30	-0.66	-0.15	-0.51	-0.21
Thrift Institutions	0.09	0.05	0.07	0.21	0.08
Misc. Finance	0.04	0.41	0.02	0.47	0.19
Life Insurance	-0.02	0.19	0.02	0.19	0.08
Other Insurance	-0.22	0.49	-0.08	0.19	0.08
Real Property	-0.01	0.07	0.05	0.11	0.04
Mortgage Financing	0.13	0.01	0.00	0.14	0.06
Services	-0.04	-0.23	0.07	-0.20	-0.08
Miscellaneous	<u>0.02</u>	<u>0.08</u>	<u>-0.01</u>	<u>0.09</u>	<u>0.04</u>
E2 Industry Segments	0.70	-0.82	-0.45	-0.58	-0.23

EXHIBIT 5

QUALITY GROWTH
January 1, 1967 - December 31, 1991

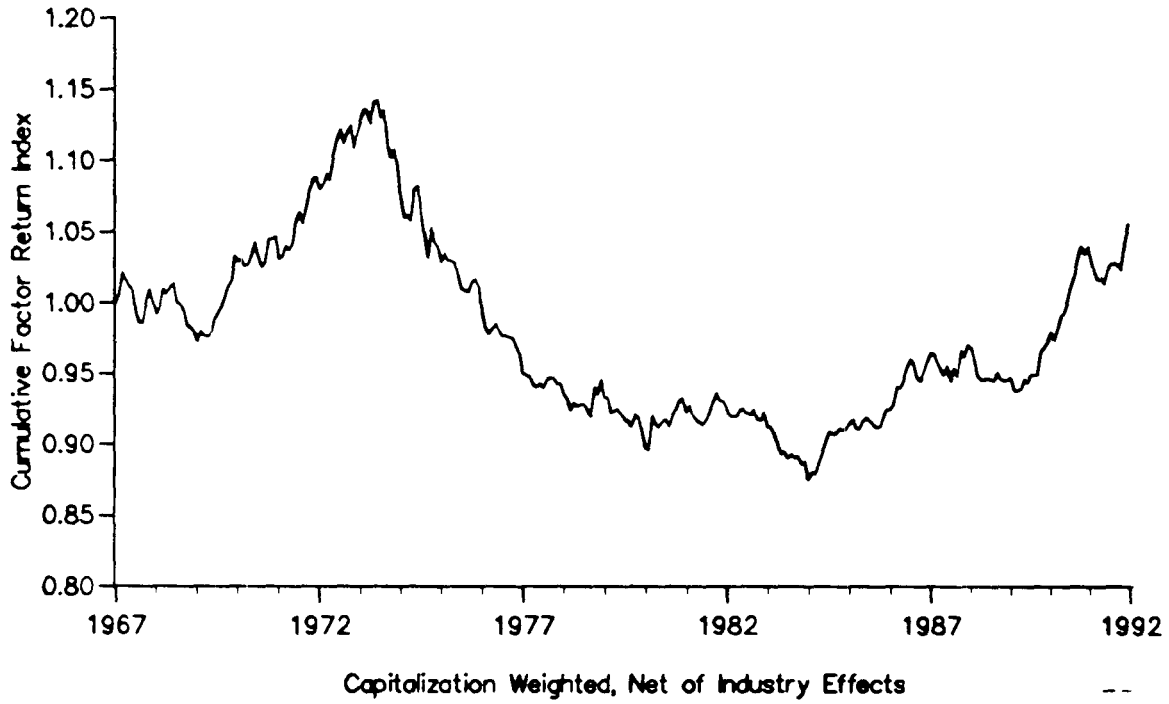
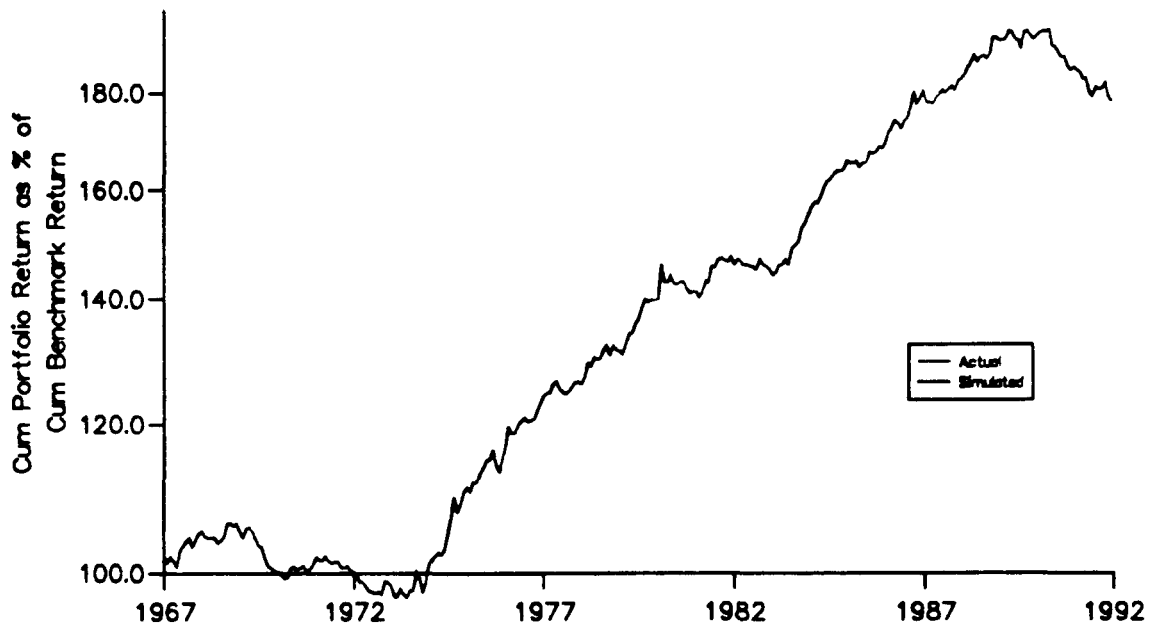
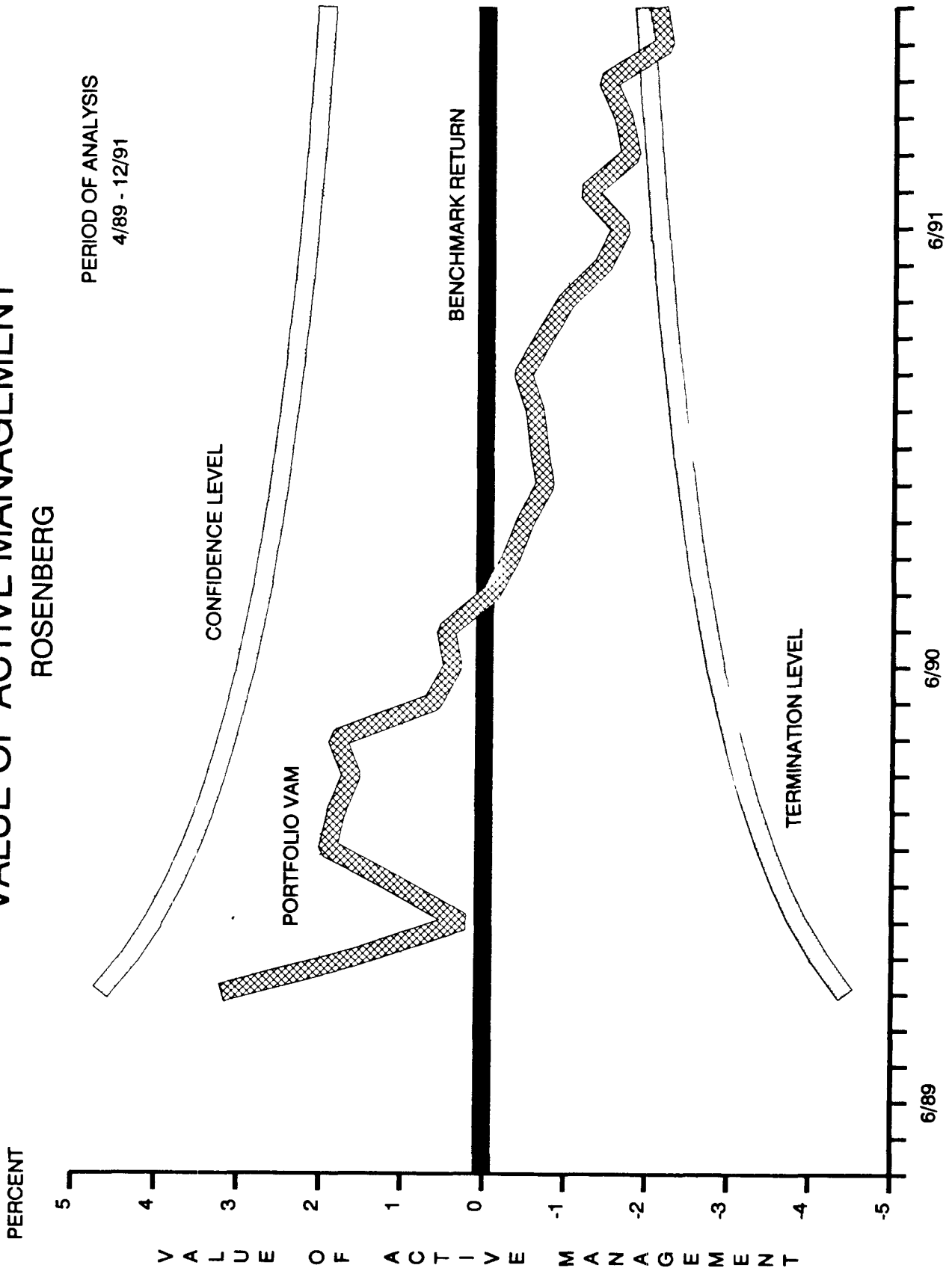


EXHIBIT 6

Full History of Simulated and Actual Strategy Cumulative Alpha



VALUE OF ACTIVE MANAGEMENT ROSENBERG



Appendix 1

Rosenberg Benchmark
Risk Factor Exposures

Date	Beta	VIM	SCS	SIZ	TRA	GRO	EP	BP	EVR	FLV	FPR	LBI	YLD	LCP
8903	1.02	0.07	-0.03	-0.24	0.01	0.06	0.01	0.06	0.04	0.00	-0.15	-0.01	-0.04	
8906	1.01	0.07	-0.03	-0.23	0.03	0.07	-0.01	0.04	0.05	-0.01	-0.11	0.01	-0.06	
8909	1.01	0.05	-0.06	-0.24	0.03	0.06	-0.01	0.04	0.05	0.01	-0.14	0.00	-0.05	
8912	1.01	0.07	-0.05	-0.24	0.05	0.06	0.00	0.05	0.06	0.01	-0.16	-0.01	-0.04	
9003	1.01	0.07	-0.05	-0.25	0.03	0.06	0.00	0.06	0.06	0.00	-0.17	-0.03	-0.03	
9006	1.02	0.08	-0.07	-0.25	0.04	0.05	0.00	0.07	0.06	-0.01	-0.18	-0.02	-0.03	
9009	1.03	0.14	-0.14	-0.30	0.06	0.06	0.02	0.09	0.07	0.00	-0.19	0.00	-0.02	0.07
9012	1.02	0.09	-0.07	-0.21	0.03	0.04	0.01	0.07	0.05	0.01	-0.18	-0.03	-0.01	0.05
9103	1.02	0.09	-0.07	-0.21	0.03	0.05	-0.01	0.07	0.06	0.00	-0.24	-0.03	-0.03	0.05
9106	1.03	0.12	-0.06	-0.23	0.06	0.06	-0.01	0.06	0.07	0.02	-0.25	-0.01	-0.05	0.05
Average	1.02	0.09	-0.06	-0.24	0.04	0.06	0.00	0.06	0.06	0.00	-0.18	-0.01	-0.04	0.06
Actual Avg 4/89-9/91	1.02	0.09	-0.05	-0.31	0.05	0.02	0.29	0.34	0.09	-0.03	-0.04	-0.02	-0.03	0.09

Appendix 2

Rosenberg
Quarterly Sector Weights

Month	Cons Non-Dur	Cons Dur	Basic Mater	Cap Goods	Energy	Tech	Trans	Util	Fin
8903	32.48	4.82	14.53	5.99	10.03	6.90	1.41	15.04	8.81
8906	29.53	4.74	11.84	5.73	9.11	9.97	3.19	14.70	11.19
8909	29.52	4.51	13.78	4.64	9.12	8.49	2.71	13.21	14.02
8912	28.38	5.09	14.66	4.41	12.25	6.30	2.42	15.63	10.86
9003	29.37	6.39	13.49	3.82	10.81	7.10	2.68	17.53	8.81
9006	30.91	6.41	12.43	4.18	9.67	7.37	2.92	16.23	9.88
9009	29.33	5.07	10.99	4.50	10.94	6.97	2.73	20.39	9.09
9012	33.03	2.75	9.41	4.83	9.62	10.17	1.21	19.38	9.60
9103	33.92	2.67	9.36	5.59	5.99	11.27	1.27	18.43	11.50
9106	33.89	2.03	9.04	6.19	7.11	10.78	1.63	17.11	12.22
9109	34.49	2.11	8.53	5.99	7.55	8.59	2.09	15.64	15.01
Average	31.35	4.24	11.64	5.08	9.29	8.54	2.21	16.66	11.00
Minimum	28.38	2.03	8.53	3.82	5.99	6.30	1.21	13.21	8.81
Maximum	34.49	6.41	14.66	6.19	12.25	11.27	3.19	20.39	15.01
Std. Dev	2.25	1.60	2.31	0.84	1.83	1.75	0.72	2.15	2.08
Bmk Avg 3/89-9/91	29.91	4.76	8.90	6.39	8.74	7.84	2.14	17.19	14.13

Appendix 3

**Rosenberg
Benchmark Sector Exposures**

Month	Cons N Dur	Cons Dur	Basic Mat	Cap Goods	Energy	Tech	Trans	Util	Fin
8903	27.35	5.85	9.68	7.12	7.60	8.19	2.56	17.02	14.63
8906	27.72	5.39	9.28	7.04	8.32	7.91	2.44	17.29	14.61
8909	27.28	5.32	9.53	6.17	8.39	8.36	2.40	16.81	15.75
8912	27.51	4.89	9.24	6.14	8.88	7.56	2.09	18.26	15.44
9003	26.97	4.93	9.07	6.39	9.59	8.13	2.14	18.22	14.56
9006	28.60	5.00	8.78	6.60	8.96	8.51	2.07	17.59	13.89
9009	29.55	4.60	8.57	6.61	10.47	7.85	1.97	17.60	12.78
9012	32.07	3.93	8.44	5.99	9.41	7.49	1.89	18.55	12.24
9103	33.04	4.11	8.70	6.23	8.33	8.06	1.99	16.54	13.01
9106	34.20	4.22	8.46	6.08	8.13	7.37	2.05	15.73	13.76
9109	34.72	4.07	8.18	5.88	8.04	6.82	2.00	15.51	14.77
Benchmark Average	29.91	4.76	8.90	6.39	8.74	7.84	2.14	17.19	14.13
Actual 4/89-9/91	30.93	4.30	11.45	5.07	9.38	8.93	2.32	16.71	10.91

APPENDIX 4

	9011	9012	9101	9102	9103	9104	9105	9106	9107	9108	9109	9110	9111	Contrib to alpha in %	Deviation of factor contrib
E2 Risk Indices	0.22	-0.02	0.25	0.14	0.03	-0.05	0.05	-0.02	0.07	0.11	-0.06	0.06	-0.10	0.1163	0.3043
E2 Industry Segments	-0.10	0.09	-0.25	-0.30	0.10	-0.50	-0.52	-0.08	-0.09	-0.15	-0.16	0.06	-0.03	-0.0190	0.2500
Stock Selection	-0.49	-0.14	-0.26	-0.03	-0.59	-0.51	-0.64	-0.94	0.69	-1.29	-0.17	0.32	-1.25	-0.2263	0.5157
Total Alpha	-0.37	0.19	0.01	0.21	-0.38	-0.60	-1.11	-0.58	0.86	-1.27	0.21	0.38	-1.81	-0.1290	0.7197
Variability in Markets	0.22	-0.02	0.25	0.14	0.03	-0.05	0.05	-0.02	0.07	0.11	-0.06	0.06	-0.10	0.0233	0.0783
Success	0.15	0.06	0.02	0.08	-0.06	0.09	-0.02	0.02	-0.12	0.06	0.02	0.06	0.01	0.0127	0.0556
Size	-0.14	0.13	0.04	0.13	0.10	0.08	-0.22	0.21	-0.06	-0.04	0.16	-0.01	0.12	0.0193	0.0844
Trading Activity	0.06	0.00	0.02	-0.01	0.00	0.00	0.00	-0.01	0.02	0.03	-0.01	-0.01	-0.01	0.0003	0.0258
Growth	0.03	0.00	0.00	-0.03	-0.02	0.00	-0.01	-0.04	-0.01	0.00	-0.01	0.04	-0.02	-0.0020	0.0228
Earnings/Price	0.20	0.58	0.23	0.13	-0.21	0.10	0.33	0.18	0.01	-0.05	0.41	-0.38	-0.31	0.0620	0.2210
Book/Price	-0.20	-0.38	0.11	0.18	0.29	0.09	-0.03	0.18	0.34	0.06	0.03	0.12	-0.03	-0.0050	0.1771
Earnings Variation	-0.04	0.00	0.00	-0.02	-0.01	0.01	0.01	0.01	0.01	-0.02	0.00	0.01	-0.11	-0.0057	0.0339
Financial Leverage	0.00	0.03	0.01	-0.03	-0.02	0.00	-0.03	0.02	-0.01	0.01	0.00	0.00	0.00	0.6627	0.0157
Foreign Income	-0.02	0.00	0.00	0.03	-0.10	0.00	0.06	-0.03	-0.02	0.01	0.01	0.01	-0.09	0.0140	0.0499
Labor Intensity	0.12	-0.04	-0.02	0.03	0.05	0.06	-0.10	-0.04	0.08	0.06	-0.02	0.08	0.04	0.0110	0.0454
Yield	-0.01	-0.02	-0.08	-0.06	0.02	0.03	-0.01	-0.01	-0.03	-0.01	-0.01	0.00	-0.01	-0.0050	0.0290
Locap	-0.14	-0.09	-0.06	-0.04	0.03	0.00	0.03	-0.01	-0.03	0.01	0.02	0.03	-0.01	-0.0097	0.0394
E2 Risk Indices	0.22	0.24	0.52	0.54	0.11	0.41	0.05	0.44	0.26	0.17	0.54	0.00	-0.53	0.1163	0.3043

State of Minnesota Portfolio - Monthly Attribution
 Factor contribution to alpha, stated in percent

	8906	8907	8908	8909	8910	8911	8912	9001	9002	9003	9004	9005	9006	9007	9008	9009	9010
E2 Risk Indices	0.12	0.20	0.78	-0.03	-0.34	-0.51	0.37	-0.02	0.10	0.04	0.10	-0.35	-0.13	0.12	-0.10	0.06	0.11
E2 Industry Segments	-0.11	0.27	0.19	-0.34	-0.11	0.03	0.31	0.46	0.04	0.09	0.01	-0.14	0.08	0.09	-0.04	0.66	-0.13
Stock Selection	0.60	-0.28	0.62	-0.04	-0.20	-0.07	0.38	0.00	-0.14	0.03	0.21	-0.79	-0.08	-0.05	-0.34	-1.15	-0.19
Total Alpha	0.61	0.19	1.59	-0.41	-0.65	-0.55	1.06	0.44	0.00	0.16	0.32	-1.28	-0.13	0.16	-0.48	-0.43	-0.21
Variability in Markets	0.03	0.02	0.00	-0.03	-0.07	0.00	-0.01	-0.06	0.00	0.00	0.03	-0.02	0.02	0.09	0.04	-0.02	0.00
Success	0.02	0.06	0.01	0.06	-0.03	-0.14	0.02	0.01	0.02	0.00	0.00	0.01	0.01	0.02	0.02	-0.02	0.00
Size	0.00	0.00	0.01	-0.03	0.01	0.00	-0.01	0.00	0.01	0.02	0.01	-0.05	0.05	0.02	0.03	0.02	-0.01
Trading Activity	0.02	0.00	0.04	-0.03	-0.04	0.01	-0.03	0.01	0.01	0.00	0.00	0.01	0.00	0.00	-0.08	-0.02	0.03
Growth	0.06	-0.02	0.01	-0.01	-0.01	0.00	0.01	0.01	0.00	-0.01	0.00	0.00	0.02	0.02	-0.01	0.00	-0.06
Earnings/Price	-0.07	0.28	0.45	0.07	-0.01	-0.18	0.28	0.07	0.00	0.18	-0.02	-0.12	-0.07	-0.12	-0.07	-0.01	-0.02
Book/Price	0.09	-0.22	0.26	-0.04	-0.21	-0.27	0.02	-0.15	-0.02	-0.22	0.13	-0.26	-0.09	0.01	0.07	0.06	-0.07
Earnings Variation	0.04	0.04	0.06	-0.02	-0.09	-0.02	0.03	0.00	0.00	0.01	0.00	-0.01	0.01	0.01	-0.03	-0.03	0.02
Financial Leverage	0.00	0.00	-0.01	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.03	0.00	-0.01	-0.01	0.04	0.00
Foreign Income	0.00	0.00	0.00	-0.03	0.06	0.08	0.02	0.04	0.05	0.07	-0.02	0.05	0.00	0.08	-0.02	0.03	0.15
Labor Intensity	0.00	0.01	0.02	0.00	0.01	0.00	0.00	0.01	0.04	0.01	-0.05	0.03	-0.06	-0.01	0.02	0.00	0.00
Yield	-0.04	-0.01	0.00	0.00	0.00	0.00	0.03	0.00	-0.01	0.00	0.00	0.01	0.00	0.00	-0.03	0.01	0.09
Locap	-0.03	0.05	-0.07	0.01	0.02	0.00	0.00	0.02	-0.01	0.00	0.01	-0.01	-0.01	0.00	-0.03	0.01	0.01
E2 Risk Indices	0.12	0.20	0.78	-0.03	-0.34	-0.51	0.37	-0.02	0.10	0.04	0.10	-0.35	-0.13	0.12	-0.10	0.06	0.11

APPENDIX 5

	9011	9012	9101	9102	9103	9104	9105	9106	9107	9108	9109	9110	9111	Contrib to alpha in %	Deviation of factor contrib
Aluminum	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.0007	0.0069
Iron and Steel	-0.01	-0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.0003	0.0147
Precious Metals	0.00	0.01	-0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.0000	0.0074
Misc. Mining, Metals	0.01	0.02	0.03	0.05	-0.02	0.02	0.01	-0.01	0.00	0.00	0.00	-0.01	-0.03	-0.0073	0.0400
Coal & Uranium	0.00	0.00	-0.02	0.00	0.01	0.00	0.01	-0.01	0.00	0.01	-0.01	0.01	-0.01	-0.0003	0.0072
International Oil	-0.14	-0.09	0.00	-0.02	-0.04	-0.15	0.13	0.07	-0.10	-0.01	-0.01	-0.05	0.09	-0.0203	0.0766
Dom Petroleum Reserves	-0.01	-0.10	-0.02	0.00	-0.03	0.00	0.01	-0.04	0.03	0.03	0.00	0.00	0.02	0.0023	0.0564
For Petroleum Reserves	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.03	0.0040	0.0262
Oil Refining, Distribution	0.01	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.0013	0.0163
Oil Service	0.00	0.00	0.01	-0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0047	0.0172
Forest Products	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0013	0.0051
Paper	0.01	0.00	-0.01	-0.01	0.00	0.00	-0.05	0.03	0.00	0.00	0.04	-0.03	0.09	-0.0077	0.0401
Agriculture, Food	0.06	0.07	0.05	0.24	0.09	-0.04	0.12	-0.10	0.09	0.15	-0.14	0.02	-0.04	0.0173	0.0848
Beverages	-0.03	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.01	-0.07	-0.01	0.00	-0.0017	0.0424
Liquor	-0.02	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	0.01	-0.01	0.00	0.00	0.00	0.00	-0.0017	0.0075
Tobacco	0.03	-0.17	-0.09	-0.12	0.01	-0.08	-0.04	0.00	0.00	0.00	0.00	0.00	0.00	-0.0160	0.0434
Chemicals	0.03	0.19	0.07	0.08	-0.01	-0.05	0.08	-0.07	0.02	0.00	-0.01	-0.03	0.02	-0.0103	0.0877
Tire & Rubber	-0.01	-0.03	-0.01	0.00	0.00	0.00	0.01	-0.01	0.02	0.01	-0.02	0.00	-0.06	-0.0087	0.0613
Containers	0.00	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	-0.01	0.00	0.0000	0.0064
Producers Goods	0.00	0.01	0.03	0.01	0.00	0.00	0.00	0.01	0.02	0.00	0.01	0.00	0.00	0.0010	0.0103
Pollution Control	-0.04	-0.02	-0.08	-0.05	0.00	0.03	-0.07	0.03	-0.01	0.00	0.03	0.00	0.04	0.0063	0.0736
Electronics	0.06	-0.04	-0.06	-0.02	0.07	0.01	-0.02	0.06	-0.01	-0.01	0.02	0.01	0.03	0.0083	0.0428
Aerospace	0.04	0.01	0.06	0.02	0.04	-0.01	-0.04	-0.07	-0.02	0.02	0.00	0.04	-0.05	0.0053	0.0344
Business Machines	0.00	-0.01	-0.04	0.03	-0.03	0.00	0.02	0.01	-0.02	0.00	0.00	0.01	0.00	0.0023	0.0257
Soaps, Houseware	0.16	0.10	0.29	0.09	0.07	-0.09	0.00	-0.25	0.15	-0.01	-0.02	-0.01	-0.01	0.0130	0.0896
Cosmetics	0.04	0.02	0.01	0.01	0.01	0.00	0.00	0.06	-0.05	0.00	-0.01	-0.02	0.00	0.0073	0.0865
Apparel, Textiles	0.02	0.03	0.03	0.02	0.00	0.00	0.00	0.01	0.04	-0.04	0.02	0.00	0.00	0.0007	0.0268
Photographic, Optical	0.01	-0.01	-0.04	-0.01	-0.05	-0.02	0.01	-0.03	0.03	0.04	-0.03	0.07	0.00	-0.0033	0.0349
Consumer Durables	-0.02	0.01	0.01	0.01	0.01	0.01	-0.07	0.03	0.02	0.00	0.02	-0.01	0.01	0.0060	0.0272
Motor Vehicles	-0.02	-0.07	-0.09	-0.08	0.03	0.05	-0.19	-0.01	0.01	0.07	0.00	0.05	0.10	-0.0177	0.0668
Leisure, Luxury	0.00	-0.01	-0.01	-0.03	0.00	0.01	-0.03	0.01	-0.01	-0.02	0.00	0.00	0.01	-0.0047	0.0107
Health Care (Non-Drug)	-0.06	-0.05	-0.08	-0.09	-0.07	0.02	-0.05	-0.03	0.03	0.01	-0.04	0.03	-0.04	-0.0130	0.0399
Drugs, Medicine	-0.12	-0.02	-0.06	-0.13	-0.01	0.01	-0.05	0.04	-0.09	-0.03	-0.01	-0.10	0.11	-0.0130	0.0575
Publishing	0.05	0.02	0.03	-0.01	0.00	0.00	0.04	0.05	-0.01	0.00	0.02	0.00	0.04	-0.0027	0.0378
Media	0.15	0.22	0.09	0.03	-0.04	0.02	0.04	-0.11	0.05	0.01	0.02	0.01	-0.10	0.0020	0.0837
Hotels, Restaurants	-0.01	0.01	0.00	0.00	0.02	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.0160	0.0583
Trucking, Freight	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	-0.01	0.0007	0.0069
Railroads, Transit	0.03	0.02	-0.02	0.00	0.00	-0.01	-0.01	0.01	-0.01	0.00	0.00	0.02	-0.02	-0.0070	0.0536
Air Transport	0.03	-0.03	-0.09	-0.04	0.04	0.01	-0.02	0.01	-0.01	0.02	0.02	-0.02	0.01	0.0030	0.0273
Transport by Water	0.00	0.00	0.00	0.01	0.00	0.00	-0.01	-0.01	0.01	0.00	0.00	0.01	-0.02	-0.0007	0.0098
Retail (Food)	0.05	0.02	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	-0.01	0.0003	0.0499
Retail (All Other)	-0.11	-0.03	-0.06	-0.04	-0.07	-0.01	-0.12	0.10	-0.05	-0.04	0.00	0.00	0.00	0.0043	0.0043
Telephone, Telegraph	0.11	0.04	0.04	0.11	0.06	0.00	0.04	-0.18	0.13	0.04	0.00	0.06	-0.19	0.0043	0.1040
Electric Utilities	-0.17	0.00	0.00	-0.05	-0.02	0.00	0.05	-0.07	-0.07	-0.12	0.03	-0.03	-0.02	-0.0180	0.0808
Gas Utilities	-0.13	0.04	0.03	-0.06	0.00	0.00	-0.05	0.13	-0.05	-0.05	-0.02	-0.03	0.03	-0.0017	0.0444
Banks	-0.28	-0.06	-0.16	-0.43	-0.14	-0.32	-0.23	-0.24	-0.36	-0.27	0.18	-0.14	0.20	-0.0170	0.2089
Thrift Institutions	-0.03	-0.01	0.00	-0.04	-0.02	0.00	0.00	0.03	-0.01	-0.01	0.01	0.02	0.03	0.0070	0.0277
Misc. Finance	0.04	0.04	0.07	0.15	0.20	0.05	-0.15	-0.17	0.23	0.05	-0.03	0.15	-0.21	0.0157	0.0981
Life Insurance	-0.03	0.00	-0.03	-0.02	-0.03	0.01	-0.02	0.02	0.02	-0.01	0.00	-0.02	0.01	0.0063	0.0522
Other Insurance	0.10	0.03	0.02	0.08	0.03	-0.02	0.03	-0.07	-0.02	-0.02	-0.01	0.04	-0.02	0.0063	0.0556
Real Property	0.00	0.00	-0.05	-0.01	-0.04	0.01	0.01	0.02	0.00	0.01	0.01	0.01	0.02	0.0037	0.0203
Mortgage Financing	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.01	0.0047	0.0205
Services	-0.06	-0.04	-0.09	-0.07	-0.03	0.02	-0.05	0.07	0.00	0.00	0.00	0.00	0.00	-0.0067	0.0424
Miscellaneous	0.07	0.02	0.01	0.01	0.00	0.00	0.01	-0.04	0.03	0.03	-0.02	0.02	-0.03	0.0030	0.0202
E2 Industry Segments	-0.10	0.09	-0.25	-0.30	0.10	-0.50	-0.52	-0.08	-0.09	-0.15	-0.16	0.06	-0.03	-0.0190	0.2500

APPENDIX 5

	8906	8907	8908	8909	8910	8911	8912	9001	9002	9003	9004	9005	9006	9007	9008	9009	9010
Aluminum	0.00	0.00	-0.01	0.01	0.01	-0.01	0.00	0.02	0.00	0.00	0.00	-0.01	0.00	-0.01	0.01	0.01	0.00
Iron and Steel	-0.02	0.03	-0.01	-0.01	-0.01	0.00	-0.01	-0.02	0.00	0.00	0.00	-0.01	0.00	0.00	0.05	0.03	0.00
Precious Metals	0.00	0.00	0.00	0.00	0.00	-0.02	0.00	-0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Misc. Mining, Metals	-0.03	0.03	0.05	-0.04	-0.09	0.00	0.00	-0.04	0.00	0.05	-0.05	0.06	-0.02	0.01	-0.10	-0.07	-0.05
Coal & Uranium	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.01	0.00	-0.01
International Oil	0.03	0.00	-0.02	-0.15	-0.09	-0.05	-0.08	0.11	-0.03	0.01	0.02	-0.07	-0.01	-0.13	0.08	0.07	0.02
Dom Petroleum Reserves	-0.04	0.13	0.01	-0.02	-0.08	0.06	0.09	-0.08	0.06	-0.03	-0.09	0.10	-0.06	0.08	0.02	0.01	0.02
For Petroleum Reserves	0.00	0.02	0.01	0.05	-0.01	0.04	0.09	-0.06	0.00	0.00	-0.01	0.02	0.00	0.03	-0.01	-0.02	0.00
Oil Refining, Distribution	-0.04	-0.01	0.02	0.00	-0.02	0.03	0.04	0.02	-0.01	0.00	-0.02	0.01	-0.02	-0.01	-0.01	-0.01	-0.01
Oil Service	0.03	0.06	0.02	0.00	-0.02	0.02	0.03	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02
Forest Products	0.00	0.01	0.00	0.00	0.00	0.00	0.01	-0.01	0.01	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.00
Paper	-0.01	0.01	0.00	-0.02	-0.02	0.01	0.01	-0.11	-0.01	0.03	-0.04	-0.04	0.01	0.01	-0.09	-0.09	-0.01
Agriculture, Food	0.02	0.12	-0.03	-0.02	-0.03	0.03	0.02	0.05	0.00	0.03	0.00	0.08	0.01	-0.01	0.10	0.11	-0.05
Beverages	0.00	-0.05	0.04	-0.02	0.01	-0.02	0.00	0.01	0.00	0.00	0.00	-0.01	0.00	0.00	0.01	0.01	0.00
Liquor	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
Tobacco	0.00	-0.02	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
Construction	0.00	0.08	-0.02	-0.02	-0.06	0.04	-0.04	-0.07	0.05	-0.01	-0.08	0.13	-0.06	-0.04	0.31	-0.10	-0.08
Chemicals	-0.01	0.08	0.06	-0.05	-0.11	0.02	0.07	-0.15	0.02	0.03	-0.04	0.15	-0.01	-0.03	-0.15	-0.06	0.02
Tire & Rubber	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	-0.01	0.01	0.00	0.01	0.01	0.00
Containers	0.01	-0.01	-0.01	0.01	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	0.00	0.01	-0.01	-0.02	-0.01	0.00
Producers Goods	0.03	-0.07	-0.03	0.03	0.09	-0.03	-0.02	0.07	-0.04	-0.05	0.07	-0.18	0.04	0.06	0.24	0.11	0.01
Pollution Control	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.08	-0.01	0.02	0.07	0.15	0.02
Electronics	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.00	-0.01	0.02	-0.07	0.04	0.04	0.05	0.01	0.00
Aerospace	0.01	0.02	0.00	0.00	0.00	-0.01	0.00	0.01	0.00	-0.03	0.05	-0.05	0.04	0.04	0.07	0.00	-0.01
Business Machines	0.00	0.02	-0.02	-0.07	-0.02	0.00	0.00	0.02	-0.01	-0.02	0.02	-0.05	0.00	0.00	0.01	0.00	0.04
Soaps, Houseware	0.01	0.16	0.05	-0.03	-0.01	-0.02	0.06	-0.15	0.02	0.07	-0.11	0.24	0.04	-0.01	-0.23	-0.15	0.02
Cosmetics	-0.01	0.03	0.02	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02
Apparel, Textiles	0.01	-0.07	-0.01	0.00	0.04	0.00	0.00	0.01	0.00	0.01	-0.04	0.06	-0.02	-0.02	-0.12	-0.07	-0.01
Photographic, Optical	0.02	-0.06	0.00	0.02	0.01	0.01	0.01	0.03	0.01	0.00	0.02	-0.01	0.00	0.02	0.01	0.03	0.01
Consumer Durables	0.01	-0.06	0.00	0.03	0.02	-0.02	-0.01	0.03	0.00	-0.03	0.02	-0.03	0.03	0.01	0.06	0.04	0.01
Motor Vehicles	-0.03	0.03	0.02	-0.08	-0.06	0.00	0.01	-0.07	0.04	0.04	-0.03	0.08	-0.01	-0.04	-0.14	-0.11	0.00
Leisure, Luxury	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	-0.02	0.01	-0.01	0.00	-0.02	-0.01	0.00
Health Care (Non-Drug)	0.01	-0.04	-0.01	0.01	0.02	-0.02	-0.05	0.10	0.02	-0.03	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Drugs, Medicine	-0.01	0.02	0.00	0.00	0.01	-0.01	0.00	0.00	0.00	0.01	0.01	-0.10	0.02	-0.02	0.08	0.11	-0.01
Publishing	0.00	0.10	-0.01	-0.03	-0.06	0.02	0.02	-0.05	0.01	0.00	-0.04	0.04	0.00	-0.05	-0.07	-0.05	-0.02
Media	-0.04	-0.06	0.01	0.01	0.03	0.00	0.00	0.04	0.01	0.00	-0.01	0.15	-0.08	-0.14	-0.19	-0.02	-0.04
Hotels, Restaurants	-0.03	-0.11	0.01	0.06	0.05	-0.01	0.05	0.17	0.02	-0.01	0.04	-0.13	0.00	0.04	0.13	0.13	0.01
Trucking, Freight	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	-0.01	0.02	0.00	0.02	0.00	0.00
Railroads, Transit	0.00	0.00	0.00	0.00	0.01	0.02	0.03	-0.04	0.02	0.01	-0.05	0.11	0.03	0.00	-0.23	0.10	-0.01
Air Transport	0.00	0.01	0.01	0.00	0.03	0.01	0.00	0.03	-0.02	-0.01	0.02	-0.01	0.03	0.01	0.05	0.01	-0.01
Transport by Water	0.01	0.02	0.02	-0.01	-0.02	0.00	0.00	0.00	0.00	0.00	-0.01	0.01	-0.01	-0.01	-0.01	0.00	0.00
Retail (Food)	0.00	0.12	0.00	-0.05	-0.03	0.02	-0.01	-0.13	0.00	0.03	-0.01	0.12	0.01	0.00	-0.11	-0.06	-0.01
Retail (All Other)	0.00	0.09	0.03	-0.03	-0.08	-0.01	0.00	-0.04	0.00	0.03	-0.04	0.03	-0.03	-0.03	-0.23	0.02	0.03
Telephone, Telegraph	0.00	-0.04	-0.05	0.00	0.19	-0.03	-0.11	0.28	0.01	0.00	0.06	-0.07	0.02	-0.01	0.19	0.09	-0.16
Electric Utilities	-0.02	-0.17	0.08	0.02	0.00	-0.04	-0.13	0.10	0.00	0.00	0.06	-0.07	0.02	-0.01	0.08	-0.01	-0.01
Gas Utilities	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.01	0.00	0.02	0.08	-0.01	-0.01
Banks	0.00	0.00	-0.01	0.01	0.04	0.03	0.09	0.21	-0.05	0.11	0.18	-0.31	0.12	0.16	0.28	0.37	0.03
Thrift Institutions	0.00	-0.01	-0.03	-0.01	0.08	0.03	0.03	0.04	0.03	0.01	0.01	-0.03	0.02	0.04	0.04	0.04	0.01
Misc. Finance	-0.01	0.06	0.03	0.01	0.00	0.01	0.00	-0.06	0.00	0.00	-0.02	0.05	0.00	-0.04	-0.11	-0.12	-0.02
Life Insurance	0.00	-0.07	0.03	0.01	0.02	-0.05	0.02	0.13	-0.04	-0.04	0.04	-0.10	0.02	0.01	0.13	0.11	0.04
Other Insurance	-0.03	-0.17	-0.04	0.02	-0.02	-0.01	0.01	0.06	-0.01	-0.01	0.06	-0.08	0.00	0.01	0.09	0.09	0.03
Real Property	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.05	0.05	0.03
Mortgage Financing	0.00	0.00	0.00	0.00	-0.01	0.04	0.10	0.01	0.00	0.00	0.01	-0.02	0.00	0.00	0.01	0.01	0.00
Services	-0.01	0.01	0.00	0.00	0.03	0.00	-0.02	0.08	-0.01	-0.03	0.03	-0.12	0.01	0.03	0.03	0.02	0.00
Miscellaneous	0.01	0.01	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	0.01	0.00	-0.01	-0.03	0.00	0.00
E2 Industry Segments	-0.11	0.27	0.19	-0.34	-0.11	0.03	0.31	0.46	0.04	0.09	0.01	-0.14	0.08	0.09	-0.04	0.66	-0.13

MANAGER MONITORING PROGRAM

Description

The purpose of the Equity Manager Monitoring Program is to maintain up-to-date, relevant information about investment firms which the Board, IAC, Consultant or Staff feels are likely to be serious candidates in future domestic equity manager searches.

The program will track quantitative and qualitative information regarding the firms. Quantitative data will include items such as historical returns and benchmark returns. The qualitative data will include information such as investment approach, organizational structure and client profiles.

Managers to be Monitored

As determined by the Equity Search Committee during the recent manager search process, the following firms initially are to be included in the Equity Manager Monitoring Program:

- Brandywine Asset Management
- Fayez Sarofim
- Fisher Investments
- IAI Small Cap Regional
- Mitchell Hutchins (UnCommon Value)

Additional candidates may be suggested by Board members, IAC members, Staff or the Consultant. While candidates can be added or deleted at any time, Staff will solicit suggestions on at least an annual basis. Staff will review all suggested candidates with the IAC Stock and Bond Manager Committee. Due to the quantity of data collected, the Stock and Bond Manager Committee recommends the number of managers in the system at one time should be no more than 10.

Components of the System

The monitoring program will consist of the following components:

1. **Basic Manager Information**

This information is to be gathered when coverage of a manager is initiated. For the current group of managers, this information will be gathered from the questionnaire used in the last equity manager search. See the attached Exhibit 1 for the questionnaire to be sent to future managers added to the program.

2. **Quarterly Updates**

On a quarterly basis, the managers will be sent a brief questionnaire (Exhibit 2). This questionnaire is intended to inform Staff of any changes in the organization

or its investment process. The manager will also submit quarterly performance data for actual and benchmark results.

3. Annual Updates

On an annual basis, the manager will be sent a more detailed questionnaire (Exhibit 3). This includes all topics covered in the quarterly questionnaire as well as providing details of the manager's client and asset relationships.

4. Manager Meetings

Staff will conduct annual meetings with the managers in order to gain further insight into the managers' performance and organizational status.

Applications of the Monitoring System

The information gathered from the above sources will be input into a database. Periodic reviews of the data will be provided to the IAC Stock and Bond Manager Committee.

A Search Committee would be reconvened as necessary to formally consider candidates and recommend that one or more firms from the Manager Monitoring Program be retained by the Board.

**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?

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: _____
- 7. Number of portfolio managers and investment analysts who have left in the past three years: _____
- 8. Elaboration on answers to questions #6 and #7.

9. Experience of Investment Personnel

		<u>Number of Years</u>		
		<u>Average</u>	<u>Low</u>	<u>High</u>
	Portfolio Managers	_____	_____	_____
	Investment Analysts	_____	_____	_____

10. Dollars under management per portfolio manager:

<u>Average</u>	<u>Low</u>	<u>High</u>
_____	_____	_____

11. Number of accounts per portfolio manager:

<u>Average</u>	<u>Low</u>	<u>High</u>
_____	_____	_____

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

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

B. Assets/Client Relationships

1. For all assets under management as of the end of last quarter, provide the following information:

<u>Accounts</u>	<u>Number</u>	<u>Assets (\$ in millions)</u>			<u>Percent of Assets Fully Discretionary</u>
		<u>Total</u>	<u>Stocks</u>	<u>Bonds</u>	
Total					
Tax Exempt					

2. Account Breakdown for the stated discipline/style:

	<u>Number of Tax-exempt accounts</u>				
	<u>Last qtr</u>	<u>12/31/91</u>	<u>12/31/90</u>	<u>12/31/89</u>	<u>12/31/88</u>
Under \$10 million					
\$10 - \$25 million					
\$25 - \$50 million					
\$50 - \$100 million					
Over \$100 million					
Total #					
Total (in \$)					
Largest Account (in \$)					
Smallest Account (in \$)					

3. Describe any limitations the firm currently imposes or plans to impose for the stated discipline/style 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 gained during the last five years for the stated discipline/style.

6. Provide the names and sizes of all tax exempt accounts lost during the last five years for the stated discipline/style.

7. Does the firm utilize performance-based fees for any of its current clients? If no, would the firm consider a performance-based fee arrangement with the SBI?

C. Financial Viability and Ethics

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

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

3. 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. Describe the firm's overall investment philosophy regarding equities.
2. Does the firm utilize any customized benchmarks (normal portfolios) that differ in some way from the broad market indices? If yes, please provide a description of the benchmark construction process. If no, would you be willing to construct one?

B. Investment Management Process

1. Describe the firm's portfolio construction process.
2. Describe the allocation to cash during the past five years.
3. Describe the firm's stock selection process.
4. Describe the firm's trading operations and techniques.
5. What is the average annual level of portfolio turnover experienced during the past five years?
6. The SBI's Investment Guidelines (i.e., restrictions concerning allowable investments and target risk-return parameters) are enclosed. How would these guidelines affect the firm's investment approach.

C. Miscellaneous

1. Will the SBI's account be managed on a separate basis? If not, explain.
2. What does the firm perceive its weakness(es) to be, if any, in its organization and/or investment approach?

IV. Return History and Asset Listings

- A. Detailed performance history requirements are specified in Attachment A accompanying this questionnaire. Please complete the data sheet for actual and benchmark portfolios according to those requirements. Please specify which benchmark you are using. If you are using a market index, you do not need to submit benchmark return data.

- B. Please submit actual and benchmark asset listings as described in Attachment B. If you are using a market index, you do not need to submit benchmark asset listings.

Attachment A
Actual and Benchmark Returns

1. Please note that return data 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. You must provide returns for this same account in the future.
6. Monthly returns are preferred. 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.

Historical Data Entry Form

Firm: _____

Style: _____

Benchmark/Actual: _____

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	_____

Make additional copies of this form as needed.

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.
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. You must provide asset listings for this same account in the future.
3. Monthly returns are preferred. If monthly data is not available, please substitute quarterly returns.
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 listings must be provided on a 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:
 - a. The files should be sequential ASCII ("flat") files (for example, .PRN files generated by Lotus 1-2-3) on computer diskette compatible with IBM PC hardware.
 - b. Each security's record should be placed on a separate line in the file.
 - c. Unique identifiers, either CUSIPs or IDC (not exchange) tickers, should be provided for each security.
 - d. The name of each security should be contained in the file or provided in an accompanying hard copy version of the file.
 - e. The amount held of each security should be provided in the file.
 - f. Security data fields should be placed in consistent locations for every record in the file.

g. Please follow the following format:

1) Four header lines describing the file (e.g., manager, date of the portfolio), with each line no more than 26 columns wide.

2) 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 - 35	Security price, right-justified (carried out to three decimal places)
Columns 36 -	Security name

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

**MINNESOTA STATE BOARD OF INVESTMENT
EQUITY INVESTMENT MANAGER QUARTERLY UPDATE**

Organization/Staff

1. Describe any ownership changes during the past quarter.
2. Describe any turnover in your investment staff in the past quarter.
3. Provide the names and sizes of all tax exempt accounts gained during the last quarter for the appropriate discipline/style and also for the firm as a whole.
4. Provide the names and sizes of all tax exempt accounts lost during the last quarter for the appropriate discipline/style and also for the firm as a whole.
5. What is the amount of client relationships and total dollars under management as of the end of last quarter? Please provide for both the appropriate discipline/style and for the firm as a whole.

Investment Approach

1. Were there any changes to the firm's investment management process, equity research process or trading operations during the last quarter? If so, please describe.
2. Were there any changes to the benchmark construction process? If so, please describe.

Return History

1. Please provide quarterly return data below. Actual returns should be calculated before fee payments are deducted. Please see Attachment A for details on performance history requirements.

	<u>Actual</u>	<u>Benchmark</u>
Month 1	_____	_____
Month 2	_____	_____
Month 3	_____	_____
Quarter	_____	_____
Year	_____	_____

2. Please provide actual and benchmark asset listings for the last quarter on diskette. Submit asset listings for customized benchmarks only. If the benchmark is a market index, please specify which index you are using. Please see Attachment B for format requirements.

Miscellaneous

1. Describe any censure by the SEC or any litigation pending against the firm.
2. Describe any recent event or issue not included above that you believe is pertinent in evaluating your firm.

**MINNESOTA STATE BOARD OF INVESTMENT
EQUITY INVESTMENT MANAGER ANNUAL UPDATE**

I. Background Data

Please note any changes in the firm's address, phone number, contact individual, or ownership status.

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 quarter: _____
7. Number of portfolio managers and investment analysts who have left in the past quarter: _____

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

9. Experience of Investment Personnel

		<u>Number of Years</u>		
		<u>Average</u>	<u>Low</u>	<u>High</u>
	Portfolio Managers	_____	_____	_____
	Investment Analysts	_____	_____	_____
10.	Dollars under management per portfolio manager:	<u>Average</u>	<u>Low</u>	<u>High</u>
		_____	_____	_____
11.	Number of accounts per portfolio manager:	<u>Average</u>	<u>Low</u>	<u>High</u>
		_____	_____	_____

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

B. Assets/Client Relationships

1. For all assets under management as of 12/31/19XX, provide the following information:

<u>Accounts</u>	<u>Number</u>	<u>Assets (\$ in millions)</u>			<u>Percent of Assets Fully Discretionary</u>
		<u>Total</u>	<u>Stocks</u>	<u>Bonds</u>	
Total					
Tax Exempt					

2. Account Breakdown for the stated discipline/style as of 12/31/19xx:

	<u>Number of Tax-exempt accounts</u>
Under \$10 million	
\$10 - \$25 million	
\$25 - \$50 million	
\$50 - \$100 million	
Over \$100 million	
Total #	
Total (in \$)	

Largest Account (in \$) as of 12/31/19xx
Smallest Account (in \$) as of 12/31/19xx

3. Describe any limitations the firm currently imposes or intends to impose regarding:
- Number of client relationships
 - Total assets under management
 - Maximum account size
 - 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 gained during the last quarter.
6. Provide the names and sizes of all tax-exempt accounts lost during the last quarter.

C. Other

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

III. Investment Approach

- A. Describe any changes made to the firm's investment management process during the past quarter.
- B. Describe any changes made in the firm's equity research process during the past quarter.
- C. Describe any changes to the firm's trading operations which occurred during the past quarter.
- D. Describe any changes to the benchmark during the past quarter.

IV. Return History

- A. Please provide quarterly return data below. Actual returns should be calculated before fee payments are deducted. Please see Attachment A for details on performance history requirements.

	<u>Actual</u>	<u>Benchmark</u>
Month 1	_____	_____
Month 2	_____	_____
Month 3	_____	_____
Quarter	_____	_____
Year	_____	_____

- B. Please provide actual and benchmark asset listings for the last quarter on diskette. Submit asset listings for customized benchmarks only. If the benchmark is a market index, please specify which index you are using. Please see Attachment B for format requirements.

DOMESTIC EXTERNAL EQUITY PROGRAM ALLOCATION TARGETS AND REBALANCING GUIDELINES

Overview

The Minnesota State Board of Investment instituted its external domestic equity manager program in March 1983 and its external domestic equity index program in November 1983. In 1987 the Board approved a policy position paper specifying the active/passive allocation guidelines for the Basic Retirement Funds. Specifically, the Board implemented a flexible approach to setting the active/passive policy mix. The policy stipulates that the passively managed domestic equity assets must be at least 50% of the total domestic equity assets. The active equity manager program may be no more than 50% of the total domestic equity assets.

This paper will recommend guidelines to determine the target allocation weights for each individual manager within the active domestic equity program. In addition, this paper will recommend a rebalancing policy to control deviations from the target weights over time.

Policy Benefits

Establishing allocation guidelines to determine target weights for the active managers provides several benefits:

- 1) It provides a structure to control the amount of active risk that can be taken within the external domestic equity program.
- 2) It provides a systematic process to determine the most appropriate manager mix within the active manager group.
- 3) It provides a baseline to calculate attribution analysis within the domestic equity program.
- 4) It provides a systematic process to control deviations from the target weights to maintain the desired risk return ratio.

Active risk can be measured by calculating the volatility of the excess return for the total active domestic equity manager program. By calculating the potential active risk and excess return or value added generated by various allocation mixes allowed by the policy guidelines, the target weights that provide a favorable risk/return trade-off can be determined.

Setting target weights also provides a baseline to calculate an attribution analysis. An attribution analysis will delineate the effect of the various allocation decisions and help to evaluate the effects of past decisions so that improvements can be made going forward. It will show the impact due to deviations from the target weights as well as the value added by each manager.

Guidelines for Target Weights

Staff will recommend target weights for the individual active managers within the domestic equity program using the boundaries and criteria shown below. The IAC Stock and Bond Manager Committee will review the target weights and any subsequent changes.

Both quantitative and qualitative criteria be used to determine the targets. The difficulty of statistically confirming investment skill makes an absolute reliance on return numbers inadvisable. Qualitative aspects of a manager's operation should also be considered.

Upper and Lower Boundaries

- 1) An active manager will not have more than 10% of the total domestic equity assets or 20% of the active domestic equity manager assets. This implies that the SBI will have a minimum of 5 active managers.
- 2) An active manager will have at least 2% of the total domestic equity assets or 4% of the active domestic equity manager assets.
- 3) Assets remaining after allocation to the active equity managers will go to the domestic equity index manager. However, the allocation to the index manager will not be less than 50% of the total domestic equity assets.

These boundaries limit the amount of assets a particular external equity manager will have. By making sure that no one or two active managers become responsible for a large proportion of the external domestic equity assets, the active risk for the program can be maintained at a prudent level.

Allocation Criteria

Staff will recommend target weights for each individual active domestic equity manager using the quantitative and qualitative criteria listed below.

- 1) The maximum individual account size that the manager can effectively manage.
- 2) The manager's ability to accept new contributions.
- 3) The level of excess returns that the manager can consistently generate.

- 4) The volatility of the manager's excess returns.
- 5) The manager's ability to maintain sufficient, high quality resources to implement its investment process efficiently and effectively.
 - o Has turnover been extraordinary in terms of either numbers of people or reasons for their departure?
 - o Has there been a noticeable gain or loss of accounts in recent years?
 - o Does the firm have strong support staff and systems to provide client servicing?
 - o Has there been any change in the business emphasis by the manager?
 - o Is the account load reasonable for the firm's portfolio managers?

These above criteria outline the information that will be used to determine the target weight for each active manager within the entire domestic equity segment of the Basic Funds. The first two consider the manager's limitations as to how large an individual account and total assets they can manage effectively (e.g., a small capitalization manager cannot manage as large an asset base as a large capitalization manager due to liquidity and other constraints inherent in the part of the equity market they invest). The next two guidelines provide the quantitative data needed to determine the optimal trade-off between maximizing the value added and the volatility of that value added for each manager. The last guideline incorporates various qualitative aspects of a manager's investment operation that can not be expressed as measurable targets but are also important in determining a manager's target weight.

Guidelines for Rebalancing to Target Weights

After target weights have been set, a rebalancing policy should be implemented to prevent the external active equity managers from deviating too far from their target weights. The target weights are established to provide an optimal trade-off between potential excess return and the active risk incurred to obtain that return. Excessive deviations could produce lower long term value added or expose the program to more active risk.

Staff recommends that the Board adopt a constant rebalancing approach for the external domestic equity program similar to the rebalancing guidelines used for the total Basic Funds. That is, the allocations among the active external equity managers will be rebalanced when they deviate more than 10% from their policy weights. For example, an equity manager with a 5% target weight would have to be rebalanced if its actual weight was 5.5% or 4.5%. Staff would have discretion to rebalance a manager when they have deviated within a range of 5-10%. A manager would not be rebalanced when their

deviations from policy are less than 5%.

In determining the appropriate rebalancing range a trade-off exists between controlling deviations from the target weights and the cost due to the actual rebalancing. If rebalancing is done too often, the cost incurred will be greater than the benefit derived in controlling the deviations from the target weights. The following table shows the effects of implementing a rebalancing program with different upper limits over a eight year period using actual SBI equity manager return data.

TABLE I

<u>1984 - 1991</u>	5% Upper Limit	10% Upper Limit
Average # of Rebalancings Per Manager	6.5	1.3
Average \$ Amount Rebalanced	\$7,581,282	\$13,694,413

The table shows that using the proposed 10% upper limit greatly reduces the number of rebalancings. It should be noted that only an eight year time frame was available to run the simulation. From a statistical perspective, this time frame does not provide enough data to produce a high level of confidence in the results generated. However, the results do reflect the direction that is expected from an intuitive standpoint.

Conclusion

Staff recommends that the Board adopt the above allocation guidelines and rebalancing proposal for domestic equity program in the Basic Funds. Application of these guidelines will assist the SBI in maintaining appropriate allocations among its active managers.

Staff further recommends that the rebalancing guidelines be reviewed periodically to ensure that transaction costs and asset transfers remain prudent.

EQUITY MANAGERS

Fourth 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 Lieber & Co.
- Renew annual contracts for Franklin Portfolio Associates and GeoCapital Corporation.
- Do not renew the annual contract with Rosenberg Institutional Equity Management.

Current Managers	Total Market Value 12/31/91 (Thousands)	Quarter Ending 12/31/91 Actual Bmrk		Year Ending 12/31/91 Actual Bmrk		Annualized Five Years Ending 12/31/91 Actual Bmrk		Percent of Stock Segment 12/31/91 Basic Funds
Alliance	\$ 582,569	15.0%	10.6%	42.0%	36.4%	20.5%	13.4%	10.4%
Forstmann	266,376	6.6	6.4	39.6	29.1	13.3	12.0	4.8
Franklin	168,996	9.0	7.9	32.0	35.1			3.0
GeoCapital	196,695	16.7	12.0	72.3	50.6			3.5
IDS	226,918	10.9	8.1	38.2	28.5	13.6	13.3	4.1
IAI	113,115	8.9	6.8	26.0	26.9	12.5	13.9	2.0
Lieber & Co.	173,595	7.7	6.7	37.1	42.1	10.6	10.1	3.1
Rosenberg	343,602	6.3	8.1	26.7	32.9			6.1
Waddell & Reed	209,965	5.3	5.4	26.5	31.9	11.4	12.0	3.7
Wilshire Assoc.*	3,317,551	8.2	8.0	32.3	32.3	13.9	14.1	59.3
Aggregate **		9.4	8.2	34.9	33.4	14.2	13.7	100.0
Wilshire 5000		8.7%		34.2%		14.4%		

* 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: \$582,569,324

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:

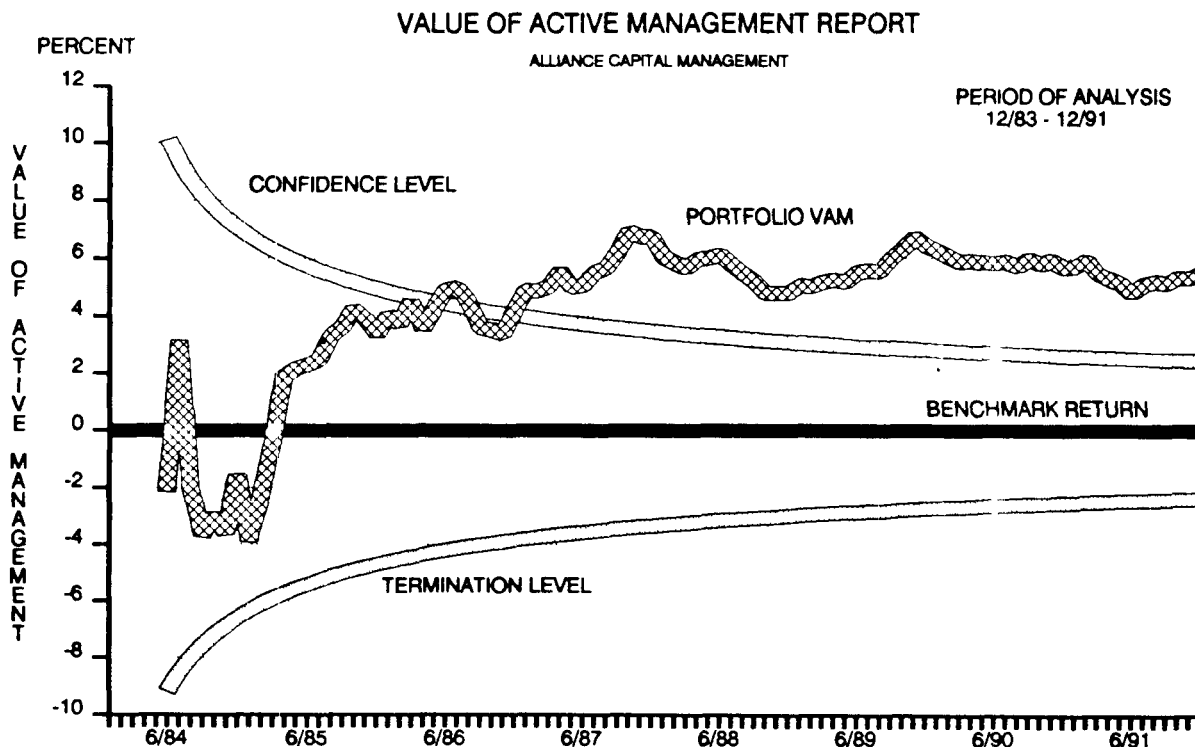
- Highly successful and experienced professionals.
- Organizational continuity and strong leadership.
- Well-acquainted with needs of large clients.
- Investment style consistently and successfully applied over a variety of market environments.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	15.0%	42.0%	20.5%	19.6%
Benchmark	10.6	36.4	13.4	13.4

STAFF RECOMMENDATIONS

No action required.



FORSTMANN LEFF ASSOCIATES

PORTFOLIO MANAGER: Joel Leff

ASSETS UNDER MANAGEMENT: \$266,376,498

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:

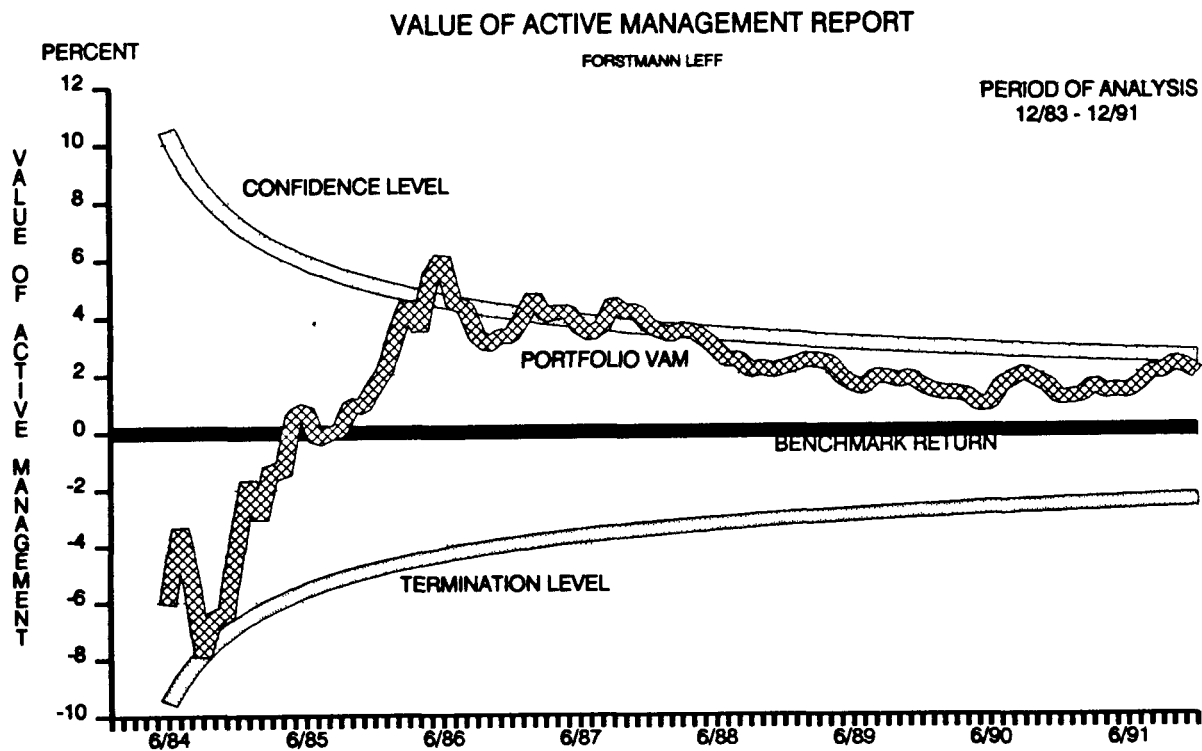
- Highly successful and experienced professionals.
- Investment style consistently and successfully applied over a variety of market environments.
- Well-acquainted with needs of large clients.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	6.6%	39.6%	13.3%	14.6%
Benchmark	6.4	29.1	12.0	12.4

STAFF RECOMMENDATIONS

No action required.



FRANKLIN PORTFOLIO ASSOCIATES

PORTFOLIO MANAGER: John Nagorniak

ASSETS UNDER MANAGEMENT: \$168,996,411

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:

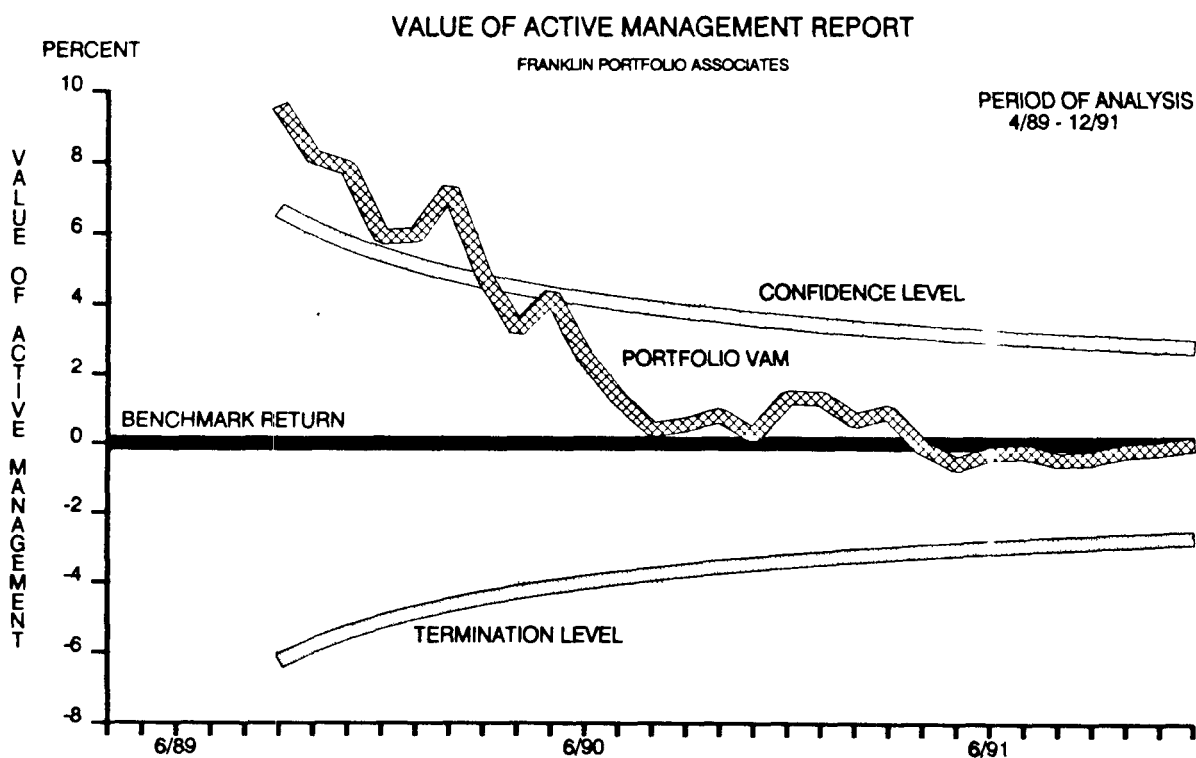
- Familiar with the needs of large institutional clients.
- Firm's investment approach has been consistently applied over a number of market cycles.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 4/1/89
Actual Return	9.0%	32.0	N.A.	13.3%
Benchmark	7.9	35.1	N.A.	13.3

STAFF RECOMMENDATIONS

Renew annual contract for period beginning April 1, 1992.



GEOCAPITAL CORP.

PORTFOLIO MANAGER: Barry Fingerhut

ASSETS UNDER MANAGEMENT: \$196,695,127

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:

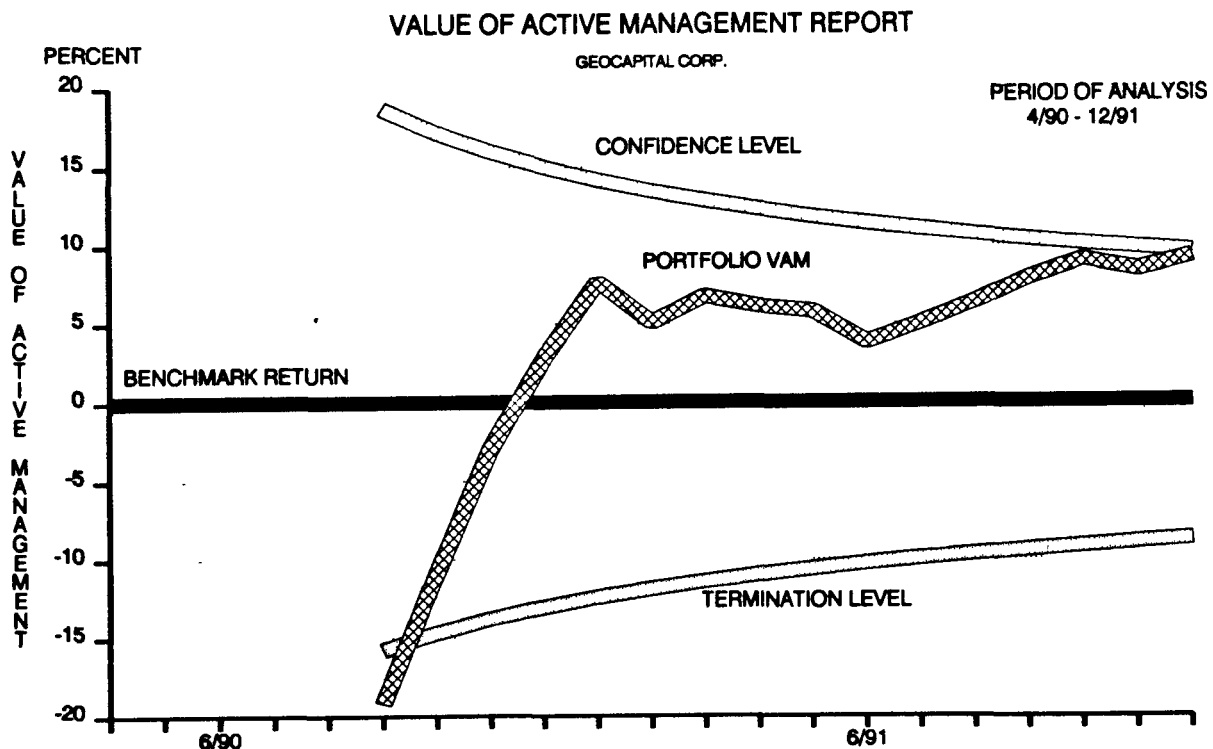
- Investment style consistently and successfully applied over a variety of market environments.
- Attractive, unique investment approach.
- Highly successful and experienced professionals.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 4/1/90
Actual Return	16.7%	72.3%	N.A.	31.1%
Benchmark	12.0	50.6	N.A.	20.0

STAFF RECOMMENDATIONS

Renew annual contract for period beginning April 1, 1992.



IDS ADVISORY

PORTFOLIO MANAGER: Pete Anderson

ASSETS UNDER MANAGEMENT: \$226,917,802

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 IDS's investment style.

Exceptional strengths are:

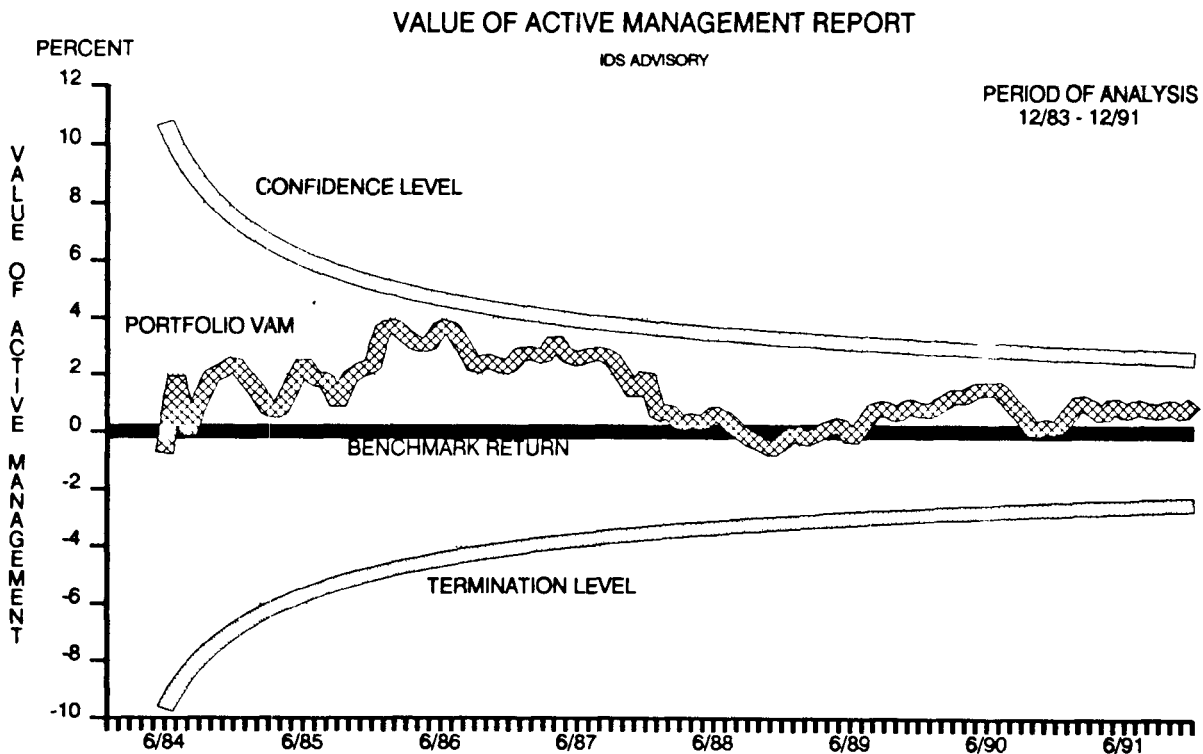
- Investment style consistently and successfully applied over a variety of market environments.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	10.9%	38.2%	13.6%	15.6%
Benchmark	8.1	28.5	13.3	14.4

STAFF RECOMMENDATIONS

No action required.



INVESTMENT ADVISERS

PORTFOLIO MANAGER: Charles Webster

ASSETS UNDER MANAGEMENT: \$113,114,747

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.

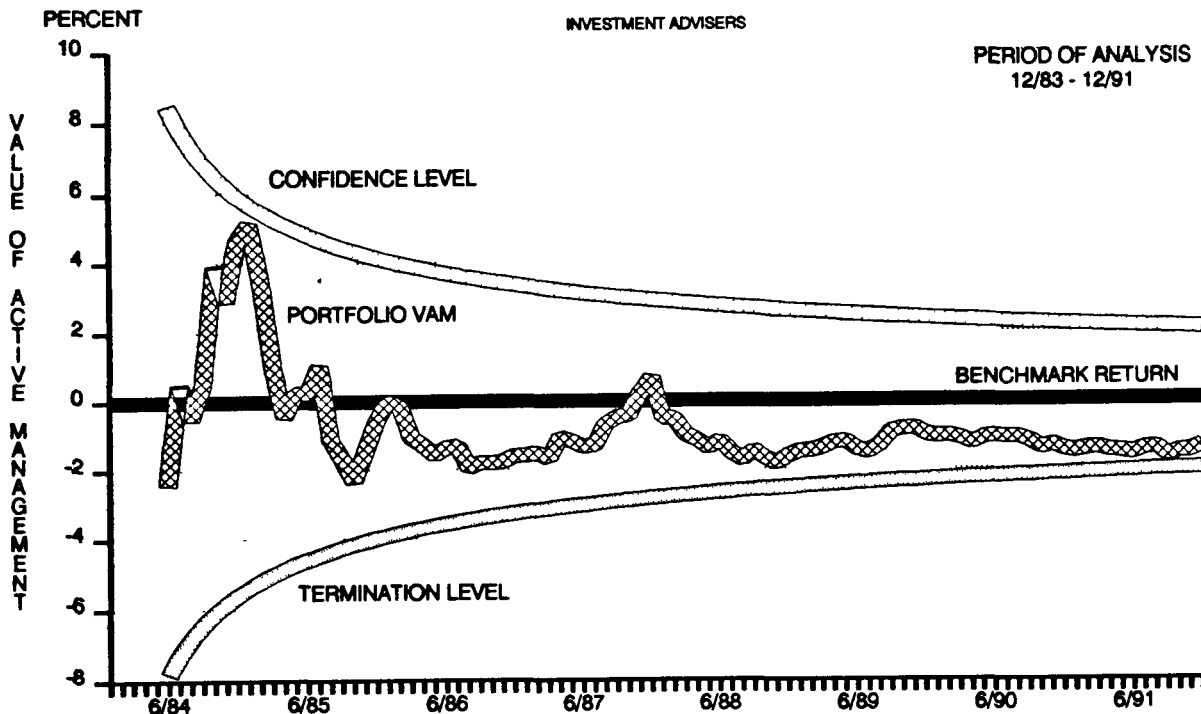
QUANTITATIVE EVALUATION

STAFF RECOMMENDATIONS

Manager was terminated as of January 31, 1992.

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	8.9%	26.0%	12.5%	13.3%
Benchmark	6.8	26.9	13.9	14.8

VALUE OF ACTIVE MANAGEMENT REPORT



LIEBER & COMPANY

PORTFOLIO MANAGER: Stephen Lieber, Nola Falcone

ASSETS UNDER MANAGEMENT: \$173,595,428

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:

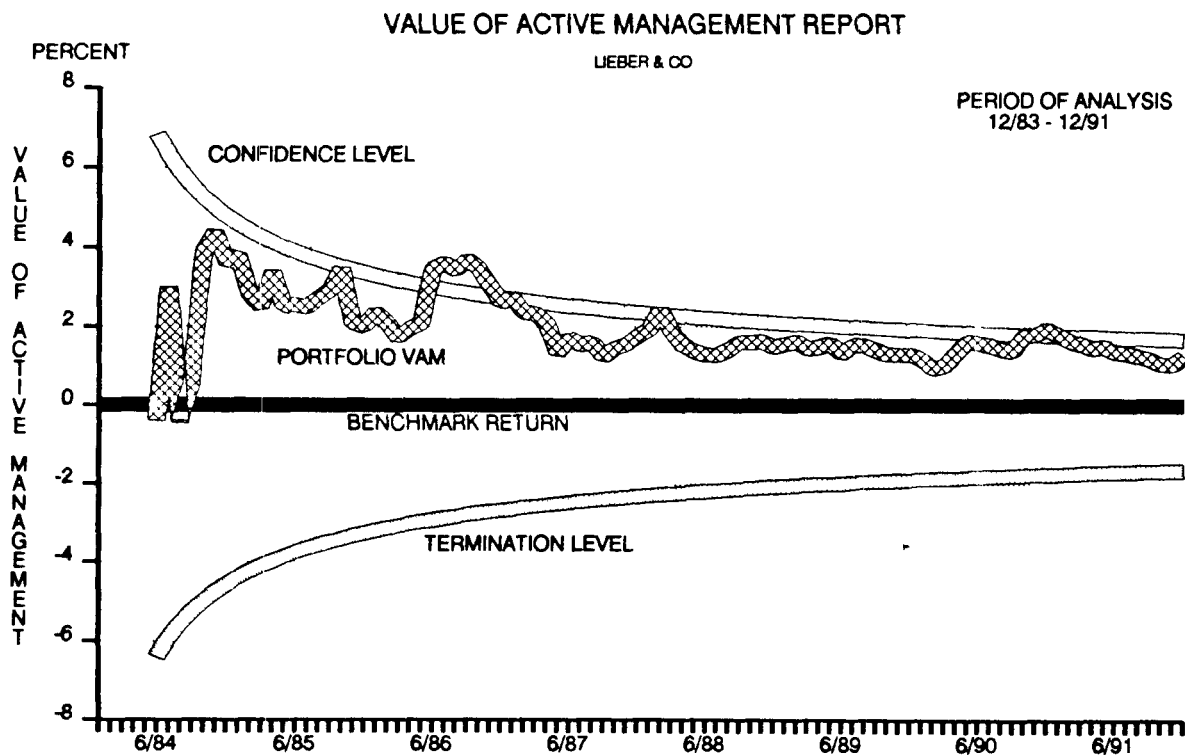
- Organizational continuity and strong leadership.
- Attractive, unique investment approach.
- Investment style consistently and successfully applied over a variety of market environments.
- Extensive securities research process.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	7.7%	37.1%	10.6%	12.4%
Benchmark	6.7	42.1	10.1	11.0

STAFF RECOMMENDATIONS

A review will be prepared for the next quarterly meeting.



ROSENBERG INSTITUTIONAL EQUITY MANAGEMENT

PORTFOLIO MANAGER: Ken Reid

ASSETS UNDER MANAGEMENT: \$343,602,136

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)**

Current concerns are:

- Rosenberg's rapid growth and expansion plans.
- Changing expectations on how their investment process will perform over time.

Exceptional strengths are:

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

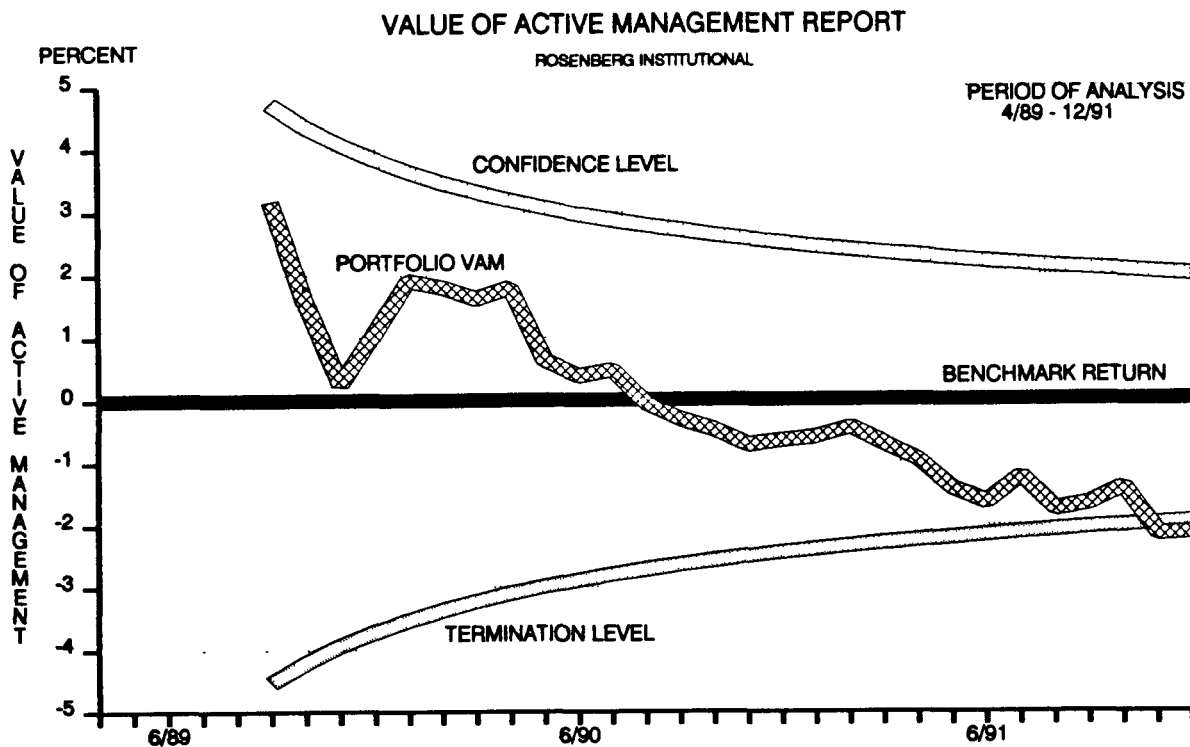
QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 4/1/89
Actual Return	6.3%	26.7%	N.A.	12.3%
Benchmark	8.1	32.9	N.A.	14.7

STAFF RECOMMENDATIONS

Rosenberg's contract period expires March 31, 1992. Staff recommends that the SBI not renew the manager's contract.

An in-depth review of Rosenberg was conducted during the quarter.



WADDELL & REED

PORTFOLIO MANAGER: Henry Herrman

ASSETS UNDER MANAGEMENT: \$209,965,169

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:

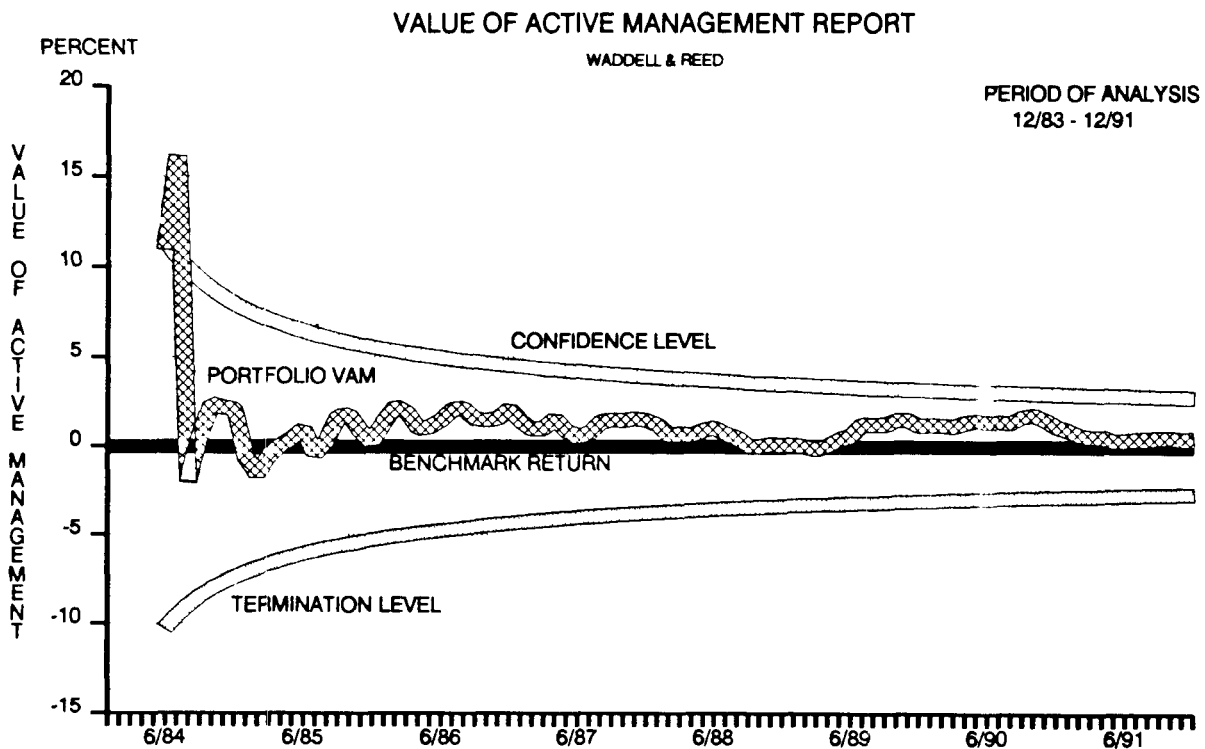
- Highly successful and experienced professionals.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 1/1/84
Actual Return	5.3%	26.5%	11.4%	11.7%
Benchmark	5.4	31.9	12.0	11.2

STAFF RECOMMENDATIONS

In-depth review was conducted for the December 1989 Board meeting.



POST FUND STOCK SEGMENT

POR1FOLIO MANAGER: SBI Staff

ASSETS UNDER MANAGEMENT: \$586,005,209

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:

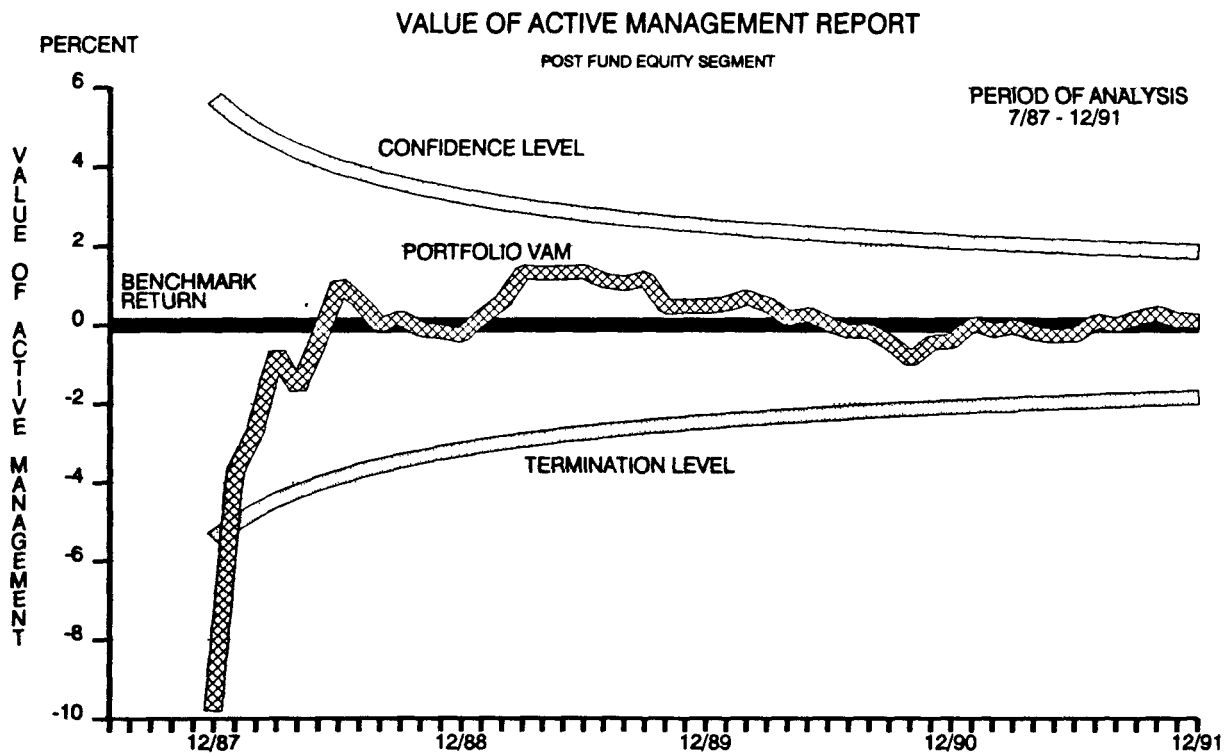
- The investment methodologies used in the portfolio have been applied successfully over various market environments.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 7/1/87
Actual Return	6.0%	35.7%	12.2%	8.5%
Benchmark	6.3	34.0	N.A.	8.5

STAFF RECOMMENDATIONS

No action required.



BOND MANAGERS

Fourth Quarter 1991

Fixed income manager returns are evaluated against the performance of the Salomon Brothers Broad Investment Grade Index (BIG). The Salomon BIG represents most investment grade bonds (BBB or better). The bond managers initially had customized indices. However, since all the managers add value to their portfolio by using the entire bond market, their benchmarks were changed to the Salomon BIG on 10/1/91.

Staff Recommendations:

Staff recommends the following actions concerning manager status:

- No action necessary.

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

Current Managers	Total Market Value 12/31/91 (Thousands)	Quarter Ending 12/31/91 Actual Bmrk		Year Ending 12/31/91 Actual Bmrk		Annualized Five Years Ending 12/31/91 Actual Bmrk		Percent of Bond Segment 12/31/91 Basic Funds
IAI	\$ 144,299	6.0%	5.0%	17.6%	15.8%	10.2%	9.9%	6.8%
Lehman Ark	123,658	4.7	5.0	14.9	15.0	9.4	9.6	5.8
Miller Anderson	232,129	7.2	5.0	20.7	16.0	10.2	9.9	10.9
Western Asset	449,739	5.4	5.0	18.0	16.7	10.7	10.2	21.1
Fidelity*	606,784	5.1	5.0	16.8	16.0			28.4
Lincoln*	577,949	5.3	5.0	15.9	16.0			27.1
Aggregate **		5.5	5.0	17.1	16.1	10.1	9.9	100.0
Salomon Broad Investment Grade Index		5.0%		16.0%		9.9%		

* Semi-passive manager

** Historical performance reflects composite of current managers only.

INVESTMENT ADVISERS

PORTFOLIO MANAGER: Larry Hill

ASSETS UNDER MANAGEMENT: \$144,298,672

INVESTMENT PHILOSOPHY

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

QUALITATIVE EVALUATION
(Reported By Exception)

The current evaluation notes the following:

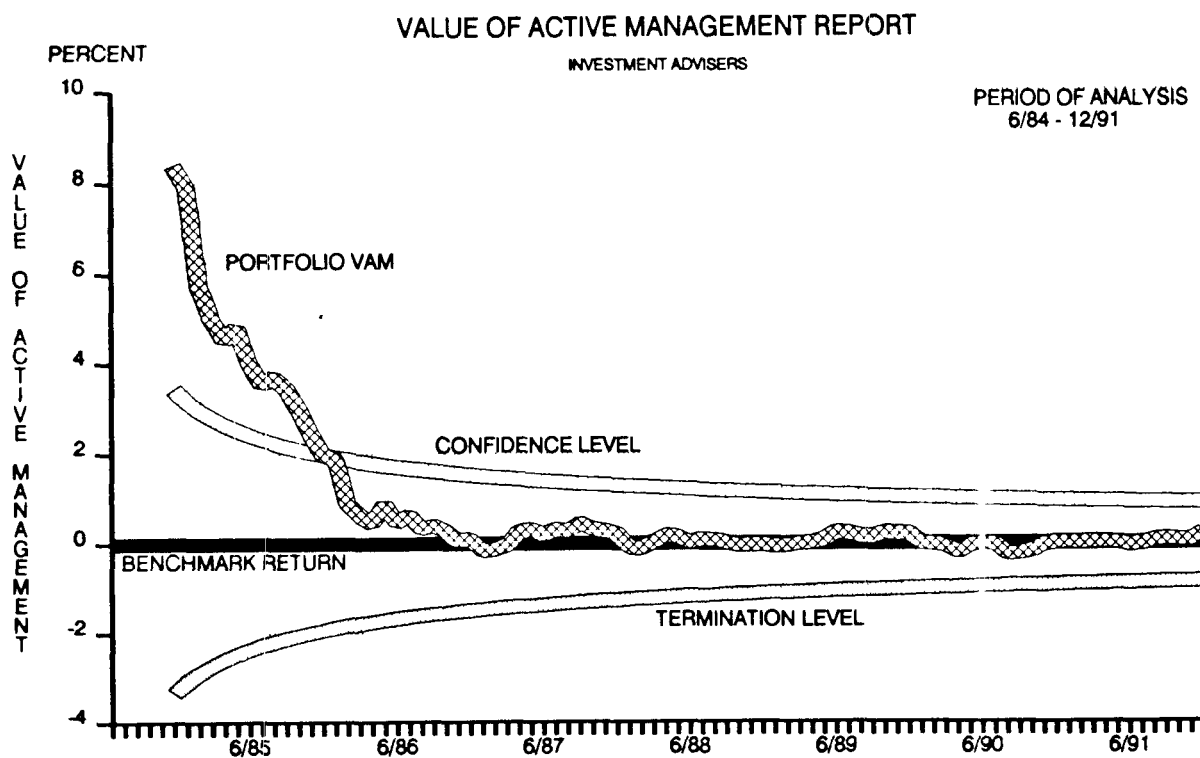
- The manager's duration decisions have not added significant value.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 7/1/84
Actual Return	6.0%	17.6%	10.2%	14.1%
Benchmark	5.0	15.8	9.9	13.8

STAFF RECOMMENDATIONS

No action required.



LEHMAN ARK MANAGEMENT

PORTFOLIO MANAGER: Kevin Hurley

ASSETS UNDER MANAGEMENT: \$123,657,717

INVESTMENT PHILOSOPHY

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

QUALITATIVE EVALUATION
(Reported By Exception)

The current evaluation notes the following:

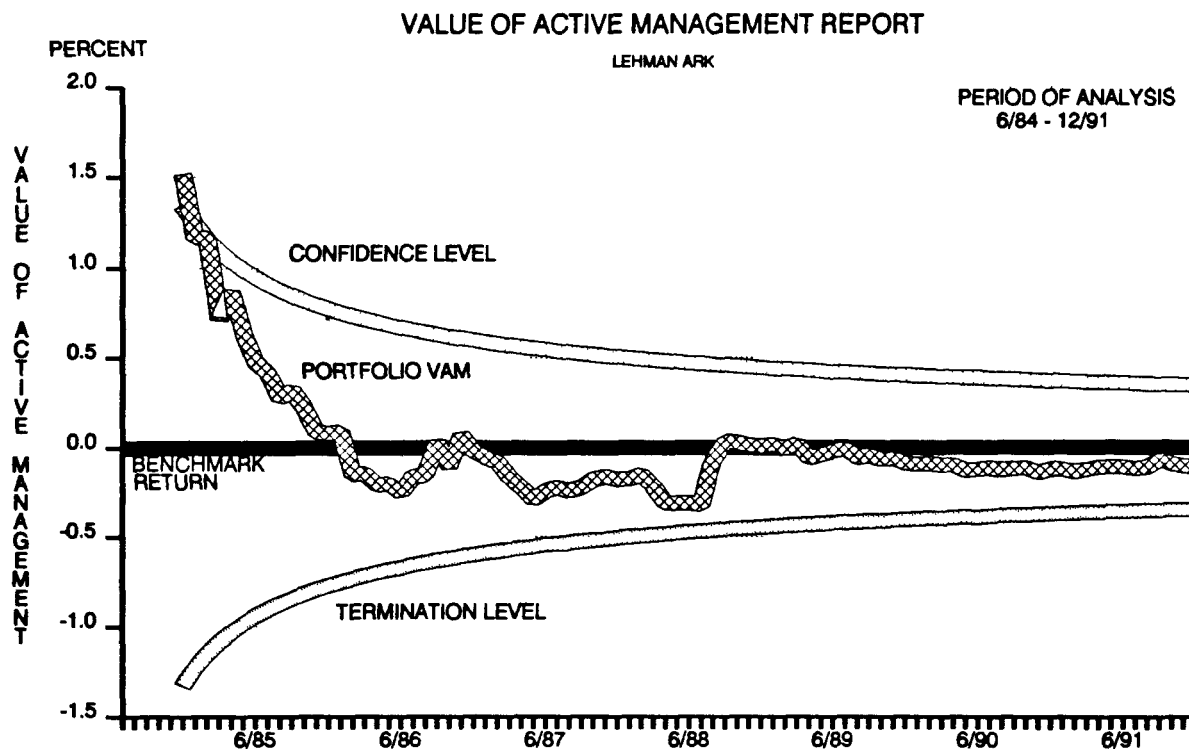
- The firm has used an index-like approach in its management of the portfolio and has made relatively few active bets.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 7/1/84
Actual Return	4.7%	14.9%	9.4%	12.8%
Benchmark	5.0	15.0	9.6	12.9

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: \$232,129,070

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:

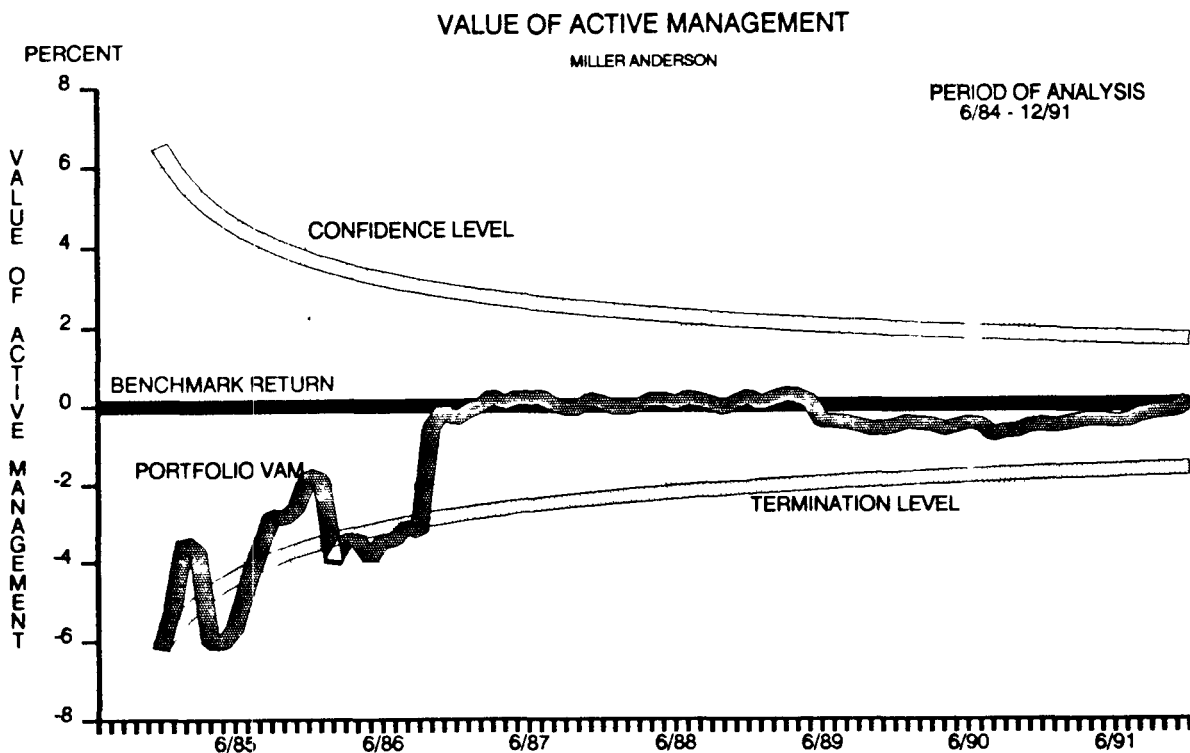
- Highly successful and experienced professionals.
- Extensive securities research process.

QUANTITATIVE EVALUATION

	Latest Qtr.	Latest 1 Yr.	Latest 5 Yrs.	Since 7/1/84
Actual Return	7.2%	20.7%	10.2%	14.0%
Benchmark	5.0	16.0	9.9	13.8

STAFF RECOMMENDATIONS

No action required.



Tab F

COMMITTEE REPORT

DATE: March 3, 1992

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.

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 (15) 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 (20) 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 (9) commingled oil and gas funds.

2) Results of Annual Review Sessions with Existing Managers

During February the Alternative Investment Committee and staff attended annual review sessions with three of the SBI's venture capital managers, Northwest, Summit and IAI. 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. The Alternative Investment Committee and staff have been satisfied with the performance and operation of Summit and IAI. Additional investments with Summit and IAI would be considered, if appropriate. Northwest's performance has been disappointing. Northwest will not be taking additional commitments for the foreseeable future.

ATTACHMENT A

SUMMARY OF ALTERNATIVE INVESTMENTS AS OF 12/31/91

	<u>MARKET VALUE</u>	<u>UNFUNDED COMMITMENT</u>	<u>TOTALS</u>
REAL ESTATE % OF BASIC FUNDS	\$376,930,690 4.36%	\$76,276,656 0.88%	\$453,207,346 5.25%
VENTURE CAPITAL % OF BASIC FUNDS	\$440,778,756 5.10%	\$232,723,019 2.69%	\$673,501,775 7.80%
RESOURCE % OF BASIC FUNDS	\$99,080,558 1.15%	\$25,639,366 0.30%	\$124,719,924 1.44%
TOTAL % OF BASIC FUNDS	\$916,790,004 10.61%	\$334,639,041 3.87%	\$1,251,429,045 14.49%

* Market value of Basic Retirement Fund at 12/31/91 = \$8,638,977,277.84

See next page for additional detail.

The market value information for alternative investments shown in this Attachment has been revised based on updated information obtained during January and February 1992.

ATTACHMENT A CON'T

ALTERNATIVE EQUITY INVESTMENTS

	INCEPT DATE	FUNDED COMMITMENT	MKT VALUE OF FUNDED COMMIT	CASH DISTRIBUTIONS	UNFUNDED COMMIT	IRR	MEASUREMENT PERIOD	
REAL ESTATE:								
AETNA	4/82	\$40,000,000	\$40,000,000	\$56,553,435	\$0	\$0	4.1%	9.7 (Yrs.)
EQUITABLE	10/81	\$40,000,000	\$40,000,000	\$73,403,824	\$0	\$0	6.9%	10.2
HEITMAN I	8/84	\$20,000,000	\$20,000,000	\$16,399,875	\$11,689,979	\$0	6.7%	7.4
HEITMAN II	11/85	\$30,000,000	\$30,000,000	\$30,389,069	\$9,927,587	\$0	6.1%	6.1
HEITMAN III	1/87	\$20,000,000	\$20,000,000	\$17,729,381	\$4,485,006	\$0	2.8%	4.9
HEITMAN V	7/91	\$20,000,000	\$5,000,000	\$5,000,000	\$0	\$15,000,000	0.0%	0.4
LASALLE	9/91	\$15,000,000	\$1,801,982	\$1,802,387	\$0	\$13,198,018	0.1%	0.3
PAINE WEBBER *	2/90	\$500,000	\$500,000	\$377,650	\$22,424	\$0	-11.1%	1.9
RREEF	5/84	\$75,000,000	\$75,000,000	\$70,753,833	\$18,401,061	\$0	3.2%	7.6
AEW III	9/85	\$20,000,000	\$20,000,000	\$21,060,076	\$0	\$0	0.8%	6.3
AEW IV	9/86	\$15,000,000	\$15,000,000	\$4,769,670	\$829	\$0	-20.3%	5.3
AEW V	12/87	\$15,000,000	\$15,000,000	\$11,934,527	\$65,593	\$0	-5.9%	4.0
TCW III	8/85	\$40,000,000	\$40,000,000	\$36,657,216	\$10,900,071	\$0	3.3%	6.4
TCW IV	11/86	\$30,000,000	\$30,000,000	\$28,309,346	\$2,399,403	\$0	0.6%	5.2
ZELL	7/91	\$50,000,000	\$1,921,362	\$1,790,401	\$0	\$48,078,638	-51.9%	0.5
TOTAL R.E. PORTFOLIO		\$430,500,000	\$354,223,344	\$376,930,690	\$57,891,952	\$76,276,656		
VENTURE CAPITAL:								
ALLIED	9/85	\$5,000,000	\$5,000,000	\$4,484,761	\$1,769,643	\$0	5.8%	6.3
DSV	4/85	\$10,000,000	\$10,000,000	\$12,382,745	\$0	\$0	3.6%	6.7
FIRST CENTURY	12/84	\$10,000,000	\$8,500,000	\$7,487,384	\$3,757,398	\$1,500,000	9.2%	7.0
BRINSON	5/88	\$5,000,000	\$4,798,186	\$4,036,478	\$1,433,286	\$201,814	6.8%	3.6
BRINSON II	7/90	\$20,000,000	\$8,000,000	\$8,363,381	\$1,464,818	\$12,000,000	36.7%	1.4
GOLDER THOMA	10/87	\$14,000,000	\$8,405,000	\$11,080,285	\$190,070	\$5,595,000	13.2%	4.2
IAI VENTURES I *	3/91	\$500,000	\$493,788	\$425,105	\$51,101	\$6,212	-4.6%	0.8
IAI VENTURES II	7/90	\$10,000,000	\$2,580,137	\$2,904,876	\$304	\$7,419,863	12.5%	1.4
INMAN/BOWMAN	6/85	\$7,500,000	\$6,750,000	\$4,591,027	\$0	\$750,000	-9.8%	6.6
KKR I	3/84	\$25,000,000	\$25,000,000	\$45,363,286	\$55,433,600	\$0	32.2%	7.8
KKR II	12/85	\$18,365,339	\$18,365,339	\$40,128,694	\$19,402,006	\$0	27.9%	6.0
KKR III	10/87	\$146,634,660	\$132,161,723	\$236,647,638	\$20,054,870	\$14,472,937	27.3%	4.2
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	\$7,493,680	\$7,707,101	\$0	10.1%	6.4
MATRIX II	5/90	\$10,000,000	\$2,125,000	\$2,016,645	\$1,052	\$7,875,000	-4.3%	1.7
NORWEST	1/84	\$10,000,000	\$10,000,000	\$7,791,886	\$3,808,066	\$0	2.7%	8.0
SUMMIT I	12/84	\$10,000,000	\$10,000,000	\$6,444,234	\$9,884,163	\$0	11.6%	6.8
SUMMIT II	5/88	\$30,000,000	\$19,500,000	\$21,738,361	\$4,512,095	\$10,500,000	18.0%	3.6
SUPERIOR	6/86	\$6,645,000	\$5,149,875	\$6,250,074	\$0	\$1,495,125	5.8%	5.5
T ROWE PRICE	11/87	\$8,914,947	\$8,914,947	\$4,028,376	\$7,096,780	\$0	44.2%	4.1
ZELL/CHILMARK	7/90	\$30,000,000	\$9,092,932	\$7,119,840	\$1,187,438	\$20,907,068	-30.9%	1.5
TOTAL V.C. PORTFOLIO		\$537,559,946	\$304,836,927	\$440,778,756	\$137,753,790	\$232,723,019		
RESOURCES:								
AMGO I	9/81	\$15,000,000	\$15,000,000	\$5,654,122	\$3,412,248	\$0	-6.2%	10.3
AMGO II	2/83	\$7,000,000	\$7,000,000	\$7,367,887	\$2,277,100	\$0	4.8%	8.9
AMGO IV	7/88	\$12,300,000	\$12,300,000	\$15,227,725	\$1,508,552	\$0	13.1%	3.5
AMGO V	5/90	\$16,800,000	\$14,535,147	\$13,373,040	\$3,210,793	\$2,264,853	11.7%	1.7
APACHE I	5/84	\$1,840,196	\$1,840,196	\$0	\$2,964,904	\$0	21.3%	7.6
APACHE III	12/86	\$30,000,000	\$30,000,000	\$16,332,000	\$29,925,170	\$0	14.6%	5.0
MORGAN O&G	8/88	\$15,000,000	\$11,400,000	\$12,775,297	\$0	\$3,600,000	4.8%	3.4
B P ROYALTY	2/89	\$25,000,000	\$25,000,000	\$28,125,000	\$9,510,921	\$0	18.0%	2.8
SIMMONS OFS	7/91	\$20,000,000	\$225,487	\$225,487	\$0	\$19,774,513	0.0%	0.4
TOTAL RES. PORTFOLIO:		\$142,940,196	\$117,300,830	\$99,080,558	\$52,809,688	\$25,639,366		
TOTAL ALT. INV. PORTFOLIO:		\$1,111,000,142	\$776,361,101	\$916,790,004	\$248,455,431	\$334,639,041		

ATTACHMENT B

**ANNUAL REPORT SUMMARY
NORWEST VENTURE PARTNERS
February 18, 1992**

MANAGER REPRESENTATIVES: Daniel J. Haggerty, John Whaley

SBI ASSETS UNDER MANAGEMENT: \$10,000,000

BACKGROUND AND DESCRIPTION:

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

QUALITATIVE EVALUATION:

- o The partnership has been fully funded for several years. Last year, the decision was made to return pro-rata \$8 million of unexpended capital because no new investments were expected.
- o During the past year, performance has improved to raise the return since inception from a negative 3% to positive 2.7%. The General Partner believes the total return will be 6-10% upon final liquidation of the partnership. This is substantially less than original expectations.
- o Returns have been hampered, in part, by the poor performance of computer hardware companies, an area where Norwest has concentrated a significant portion of its portfolio. Several of the later investments were in medical related companies, which will account for much of a anticipated improvement in performance.
- o Norwest has positioned the fund for timely liquidation to help ensure gains realized to date. Several of the portfolio companies are currently being readied for the public markets, while others are being positioned for acquisition by other entities within their respective industry.

ATTACHMENT B CONT.

QUANTITATIVE EVALUATION: (through December 31, 1991)

COMMITMENT:	\$10,000,000
FUNDED COMMITMENT:	\$10,000,000
MARKET VALUE OF FUNDED COMMITMENT:	\$7,791,886
CASH DISTRIBUTION:	\$3,808,066
INCEPTION DATE(S):	January 1984
INTERNAL RATE OF RETURN (IRR): (annualized, since inception)	2.7%

DIVERSIFICATION PROFILE

LOCATION	PERCENTAGE
West	37.7%
East	35.1
Midwest	<u>27.2</u>
	100.0%

STAGE OF DEVELOPMENT	PERCENTAGE
Seed/Startup	43.2%
Second Stage	16.1
Expansion	<u>40.7</u>
	100.0%

INDUSTRY	PERCENTAGE
Computer Related	35.4%
Medical Related	22.3
Industrial Products & Svcs.	15.4
Environmental Related	7.4
Consumer Related	4.5
Other	<u>15.0</u>
	100.0%

STAFF COMMENTS AND RECOMMENDATIONS:

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

ATTACHMENT C

**ANNUAL REPORT SUMMARY
IAI VENTURE CAPITAL GROUP
February 25, 1992**

MANAGER REPRESENTATIVES: Yuval Almog, Linda Watchmaker

SBI ASSETS UNDER MANAGEMENT:	IAI I	\$ 493,788
	Superior	5,149,875
	IAI II	<u>2,580,137</u>
	TOTAL	\$ 8,223,800

BACKGROUND AND DESCRIPTION:

The SBI has investments in three funds managed by the IAI Venture Capital Group, a subsidiary of Investment Advisors, Inc. The first, Superior Ventures is a Minnesota-based venture capital limited partnership. It was formed in June 1986 and has an eleven year term. Superior Ventures can invest up to 15% of the fund in other Minnesota-based venture capital limited partnerships. The remainder of the fund will be invested in operating companies located within the state. IAI Venture Partners II, the second fund, was formed in July 1990. Half of the fund is slated for Minnesota-based investments. In February 1991, the SBI acquired a small interest in IAI Venture Partners I from the Rochester Fire and Police Fund. This fund is 60% invested in other limited partnerships with the remainder of the fund invested in portfolio companies located primarily in Minnesota and California.

QUALITATIVE EVALUATION:

Each of the IAI/Superior funds have several portfolio companies which are potential emerging winners. The fund manager has adopted a strategy of reinvesting in those companies which have the most promising prospects as opposed to seeking new investment partners in the latter stages of development.

The IAI group has invested 65% of the available investment capital in Minnesota ventures, and believes such opportunities continue to exist.

The fund manager is positioning the IAI I and Superior portfolios for liquidation of the assets. Fund I is currently in the liquidation phase and the manager expects that 80-90% of the value expected from Superior will be realized by 1995. IAI II should be fully invested by 1993 and should realize most of its value by 1997.

The manager expected that IAI I will achieve a 12-15% return for limited partners over the life of the fund. It is anticipated that Superior and IAI II will achieve returns of 20% and 25%, respectively.

ATTACHMENT C CONT.

QUANTITATIVE EVALUATION: (through December 31, 1991)

	IAI I	SUPERIOR	IAI II
COMMITMENT:	\$500,000	\$6,645,000	\$10,000,000
FUNDED COMMITMENT:	493,788	5,149,875	2,580,137
MARKET VALUE OF FUNDED COMMITMENT:	425,105	6,250,074	2,904,876
CASH DISTRIBUTION:	51,101	0	304
INCEPTION DATE(S):	March 1991*	June 1986	July 1990
INTERNAL RATE OF RETURN (IRR): (annualized, since inception)	0.8%	1.4%	5.5%

* Received from police and fire consolidations

DIVERSIFICATION PROFILE

LOCATION	PERCENTAGE
Minnesota	64.68%
West	29.25
East	<u>6.07</u>
	100.00%

STAGE OF DEVELOPMENT	PERCENTAGE
Seed	3.34%
Development	28.02
Initial Market Penetration	38.67
Expansion	15.89
Public	9.74
Other	<u>4.34</u>
	100.00%

INDUSTRY	PERCENTAGE
Technical	56.68%
Healthcare	18.39
Consumer	<u>24.93</u>
	100.00%

STAFF COMMENTS AND RECOMMENDATIONS:

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

ATTACHMENT D

**ANNUAL REPORT SUMMARY
SUMMIT PARTNERS
February 25, 1992**

MANAGER REPRESENTATIVES: Roe Stamps, Steve Woodsum

SBI ASSETS UNDER MANAGEMENT:	Summit Ventures I	\$10,000,000
	Summit Ventures II	<u>19,500,000</u>
	TOTAL	\$29,500,000

BACKGROUND AND DESCRIPTION:

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

QUALITATIVE EVALUATION:

Summit Partners has successfully deployed their investment strategy seeking deals where they are the lead and first professional investor, owners of senior securities, and directors of the board. They have invested primarily in later stage companies that have businesses in computer realized technology, communications, health care and environmental services.

Summit I has returned 98% of the SBI's investment and the remaining value is currently at 65% of the SBI's investment. Several portfolio companies are preparing for initial public offerings which the manager believes will further enhance investment values. The SBI received more than \$2.3 million in distributions during 1991. The manager anticipates further distributions in 1992. They plan to continue to invest in companies in later stages of development, which will serve to shorten the average holding period of individual investments. The anticipated return over the life of the fund is 15-20%.

In less than four years, Summit II has already distributed approximately one-quarter of its investment back to the SBI. In 1991, distributions to the SBI from Summit II totaled \$3.3 million. Several public offerings and mergers are contemplated for 1992. The fund's portfolio has several emerging winners and the manager expects that the return over the life of the fund will be in excess of 20%.

ATTACHMENT D CONT.

QUANTITATIVE EVALUATION: (through December 31, 1991)

COMMITMENT:	SUMMIT I \$10,000,000	SUMMIT II \$30,000,000
FUNDED COMMITMENT:	10,000,000	19,500,000
MARKET VALUE OF FUNDED COMMITMENT:	6,444,234	21,738,361
CASH DISTRIBUTION:	9,884,163	4,512,095
INCEPTION DATE(S):	December 1984	May 1988
INTERNAL RATE OF RETURN (IRR): (annualized, since inception)	11.6%	18.0%

DIVERSIFICATION PROFILE

LOCATION	PERCENTAGE
Northeast	31.13%
Midwest	9.43
South	13.21
West	<u>46.23</u>
	100.00%

STAGE OF DEVELOPMENT	PERCENTAGE
Early Stage	6.60%
Emerging Growth	85.85
Lev. Investments	<u>7.55</u>
	100.00%

INDUSTRY	PERCENTAGE
Communications	12.26%
Env. Services	11.32
Fin. Services	7.55
Med./Healthcare	13.21
Electronics	21.70
Software	24.53
Other	<u>9.43</u>
	100.00%

STAFF COMMENTS AND RECOMMENDATIONS:

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