MINNESOTA STATE BOARD OF INVESTMENT MEETING

OCTOBER 2, 1985

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INVESTMENT ADVISORY COUNCIL MEETING

OCTOBER 1, 1985

AGENDA

STATE BOARD OF INVESTMENT
MEETING

Wednesday, October 2, 1985
8:30 A.M.
Room 112

State Capitol
Saint Paul

		TAB
1.	Approval of Minutes of June 5, 1985 meeting	
2.	Executive Director's Report:	
	A. Quarterly Investment Review	A
	1. Basic Retirement Funds	
	2. Post Retirement Fund and Other Investment Funds	
	B. Portfolio Statistics	B
3.	Report from Investment Advisory Council Committees:	
	A. Administrative Committee	C
	1) Repurchase Agreement Guidelines	
	B. Asset Allocation Committee	D
	1) Permanent School Fund	
	C. Equity Manager Committee	E
	1) Review of equity managers	
	2) Equity manager rebalancing	
	3) Normal portfolios	
	D. Alternative Investment Committee	F
	1) Report on progress of the implementation of the alternative investment program and request for approval to participate in two venture capital partnerships, one resource fund, and three real estate partnerships	
4.	Discussion of Board Investment Policy relating to companies doing business in South Africa	

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT

Room 105, MEA Building
55 Sherburne Avenue
Saint Paul 55155
296-3328

MINUTES
STATE BOARD OF INVESTMENT
JUNE 5, 1985

The State Board of Investment met on Wednesday, June 5, 1985 at 8:30 A.M. in the Veterans Service Building. Governor Rudy Perpich, Chair, Secretary of State Joan Anderson Growe, State Treasurer Robert W. Mattson, State Auditor Arne H. Carlson and Attorney General Hubert H. Humphrey III were present.

The minutes of the March 21, 1985 meeting were unanimously approved.

EXECUTIVE DIRECTOR'S REPORT

Howard Bicker, Executive Director, reviewed the asset allocation and investment performance of the Basic Retirement Funds. He reported that the total rate of return for the first quarter was 6.5%. The positive performance was due largely to the strong performance of the common stock market. In response to a request from Mr. Carlson, Judith Mares, Chair of the Investment Advisory Council, stated that the Council would evaluate the asset allocation before the next Board meeting. Mr. Bicker reported that in aggregate, the external equity money managers slightly underperformed the Wilshire 5000. The external bond managers closely tracked the performance of the Merrill Lynch Master Bond Index.

Mr. Bicker discussed the growth of the Post Retirement Fund due in part to retirements under the Rule of 85. He anticipates a positive cash flow of $150 million during the current quarter. Mr. Bicker discussed the implementation of the dedicated bond portfolio in the Fund.

Mr. Bicker briefly reviewed the portfolio statistics, and noted that total assets approached $8.5 billion.

LEGISLATIVE REVIEW

Mr. Bicker briefly discussed the passage of bills which affect Board operations: the SBI-sponsored housekeeping bill and the Moorhead Police and Fire Fund merger with the statewide PERA Police and Fire Fund. He stated that the treatment of Moorhead assets will set a precedent for the future merger of local police and fire funds in the statewide fund. In response to questions from Mr. Carlson, Mr. Bicker stated that any disagreement with Moorhead in the valuation of assets will be discussed with the Legislative Commission on Pensions and Retirement. He stated he has not yet seen a list of the Moorhead holdings.

EVALUATION ASSOCIATES CONTRACT

Mr. Bicker reviewed the contract with Evaluation Associates. He stated that the Investment Advisory Council has voted unanimously to recommend extension of the contract for one year. In response to a question from Mr. Carlson, Mr. Bicker stated that the Board could issue a Request For Proposals if desired. He noted that the process takes 5-6 months. Mr. Carlson recommended that the Board conduct a bid process at the end of the next contract period. Mr. Carlson moved approval of a one year extension of the Evaluation Associates contract. Mr. Humphrey concurred with Mr. Carlson's recommendation to use the bid process in the future to learn what other services are available. The motion passed unanimously.

INVESTMENT ADVISORY COUNCIL REPORTS

ADMINISTRATIVE COMMITTEE

Ms. Mares stated that during the next quarter, the Administrative Committee will review two subjects: the performance of the Executive Director and the policy on repurchase agreements.

ASSET ALLOCATION COMMITTEE

Ms. Mares outlined the committee's recommendation to invest the Permanent School Fund completely in intermediate to long-term investment grade bonds. The committee also recommends a review of the procedures by which income from the fund is allocated to schools. She stated that as a result of current procedures, high yield investments make the best sense in the short run. However, she stated that in the long-run, equity investments would result in growth of the principal and higher income. In response to a question from Mr. Humphrey, Mr. Bicker stated that it appears a Constitutional Amendment would be required to change the accounting procedure. In response to a question from the Governor, Mr. Bicker said the accounting issue was overlooked by the investment staff and legislative committee during discussions of the previous constitutional amendment. In response to a question from Ms. Growe, Mr. Bicker said an amendment would potentially be drafted for the 1986 ballot.

EQUITY MANAGER COMMITTEE

Deborah Veverka, Committee Chair, presented the committee report. She stated that approximately 50% of the current equity managers have a growth bias, an unintentional result of the original selection of aggressive managers. She stated that this growth bias has hurt the performance of the active equity manager group as a whole over the last 18 months. The committee recommends a reduction in the growth bias to give a balance within the equity sector. The committee recommends the active equity portfolio have a 35% growth orientation, 30% rotational orientation and 35% value orientation.

The committee recommended the termination of Herbert Smith, Loomis Sayles, Siebel Capital, and Trustee and Investors. The committee also recommended that the portfolio managed by Norwest be changed from the growth to the value orientation. Mr. Bicker noted that there have been problems at IDS, which if not rectified may result in its replacement. Ms. Veverka stated that the suggested terminations of managers were not based on performance, as two years is too short a time to make decisions on that basis. She said the committee analyzed which managers it would not hire today due largely to organizational changes.

Ms. Veverka stated that these recommendations involve $200 million in assets which would be split among the remaining growth and value managers. An additional value manager would be hired at a later date. She outlined the implementation procedures. The committee also recommended that incentive fees be incorporated into the manager agreements once approved by the SEC. In response to questions from Mr. Carlson, Ms. Veverka stated that rotational managers will be evaluated relative to the Wilshire 5000.

In response to a question from Mr. Carlson, Mr. Bicker stated that one to two new managers would be hired over the next 12 months. In response to a question from Mr. Carlson, Ms. Mares stated that the goal is to minimize the number of managers while not becoming too dominant in any one firm. She stated that reducing the number by 2-3 managers was both reasonable and feasible. Mr. Carlson stated that the Board may miss excellent performers due to the decision to reduce the total number.

In response to a question from Mr. Carlson, Ms. Veverka stated manager performance evaluations could be conducted after three years. Ms. Growe moved approval of the committee report. At Mr. Carlson's request, Ms. Veverka reviewed the committee's recommendations: reduce the growth bias of the fund by reducing the number of managers; terminate four managers; change the orientation of the Norwest portfolio; split assets among the growth and value managers; and implement the program by offering stocks to existing managers, liquidating the remaining portfolio, and giving assets to internal staff to be managed on a value basis during the interim before a new value manager is hired. Ms. Veverka said the liquidation would be designed to minimize both transaction costs and the impact on the market. Mr. Bicker stated that any stocks not accepted by the external managers, internal managers, or index fund would be traded in a block by an advisor to minimize market impact. He stated that Wilshire Associates would be hired due to their experience trading the index fund. Mr. Bicker also stated that the managers must be willing to accept incentive fees if approved by the SEC. Mr.

Bicker stated that once approved, the staff would bring the incentive fee proposal to the board for final review. Ms. Veverka also stated that the contracts of the existing managers must be approved for one year. The motion passed unanimously.

FIXED INCOME MANAGER COMMITTEE

Ms. Mares reviewed the construction of the dedicated bond portfolio in the Post Retirement Investment Fund. She stated that the committee found the implementation was accomplished efficiently and effectively. She stated that the external bond managers are functioning according to expectations. Mr. Carlson moved to extend the manager contracts for one year. The motion passed unanimously.

ALTERNATIVE INVESTMENT COMMITTEE

Ken Gudorf, Committee Chair, presented the committee report. The committee recommended Board investment in three venture capital partnerships: Matrix Partners II ($10 million), Inman and Bowman ($7.5 million), and Allied Ventures ($5 million). The committee also recommended investment in two real estate funds: $40 million in TCW Fund III and $20 million with State Street Fund III. He stated that with these investments, the Board will have committed approximately $275 million of its targeted $300 million to real estate, and $87.5 million to venture capital, slightly above it $75 million target. He stated that venture capital commitments exceed the target because the takedown of assets is slow and the resource area is not fully invested. In response to a question from Mr. Carlson, Mr. Bicker stated at the next meeting the committee would discuss its plans for Minnesota-based real estate and venture capital funds. In response to a question from the Governor, Mr. Gudorf stated that real estate is probably the most logical alternative investment for the Board due to the ability to provide a hedge against inflation. Mr. Bicker also noted that the size of the venture capital market limits the Board's ability to make a large percentage allocation to that area.

Mr. Carlson moved to approve the Alternative Investment Committee Report and to authorize the Board to delegate approval of investment in the Minnesota Medical Seed Fund to the Council and staff due to its August closing date. Mr. Humphrey stated concern with delegating the Board's authority to make the decision. Mr. Carlson stated that the Board doesn't have a process for review of all the proposals that come to the members. He stated that review of this proposal stopped at the staff level. Mr. Bicker stated that this proposal was submitted after the most recent IAC Committee venture capital interviews had taken place, and that he had discussed proposed participation in the Minnesota venture capital fund with the sponsors.

Mr. Humphrey stated he would like to see the proposal go through the normal process. Mr. Carlson stated that all proposals that come in should be reviewed by the Council. Ms. Mares outlined the process used to screen venture capital investments, and stated that Council does not have the time to review each specific proposal received by the staff. In response to a question from Mr. Carlson, Ms. Mares stated that there are always future opportunities to participate in partnerships with successful venture capitalists. Mr. Carlson stated that there should be a bias in favor of proposals that could create jobs in Minnesota.

Mr. Humphrey requested that the motion be divided. Mr. Humphrey moved approval of the committee report. The motion passed unanimously. Mr. Carlson moved that the Minnesota Medical Seed Fund be resubmitted to the staff and Council for review, and they be authorized to commit the Board if it is deemed a prudent investment in accordance with Board criteria. Ms. Growe stated that part of the reason for establishing the process was to provide distance between the Board members and the range of investment opportunities available. Mr. Bicker stated that the proposal would have been brought to the Council if staff had been contacted by the sponsor prior to the final interviews by the Council committee. He also stated he has yet to see a venture capital partnership close on time. Mr. Bicker stated that he would like to meet again with the sponsors and have the Council meet with them as well as other Minnesota venture capitalists regarding the pooled fund proposal. Mr. Carlson withdrew his motion.

Mr. Carlson thanked the Council and staff for their work.

The meeting adjourned at 9:40 A.M.

Respectfully submitted,

Howard J. Bicker
Executive Director

AGENDA

INVESTMENT ADVISORY COUNCIL
MEETING

Tuesday, October 1, 1985

2:30 P.M.
MEA Building - Conference Room "A"
41 Sherburne Avenue
Saint Paul

		TAB
1.	Approval of Minutes of June 4, 1985 meeting	
2.	Executive Director's Report:	
	A. Quarterly Investment Review 1) Basic Retirement Funds 2) Post Retirement Fund and Other Investment Funds	A
	B. Portfolio Statistics	B
3.	Report from Investment Advisory Council Committees:	
	A. Administrative Committee 1) Repurchase Agreement Guidelines	C
	B. Asset Allocation Committee 1) Permanent School Fund	D
	C. Equity Manager Committee 1) Review of equity managers 2) Equity manager rebalancing 3) Normal portfolios	E
	D. Alternative Investment Committee 1) Report on progress of the implementation of the alternative investment program and request for approval to participate in two venture capital partnerships, one resource fund, and three real estate partnerships	F

EXECUTIVE DIRECTOR
HOWARD J. BICKER

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT

Room 105, MEA Building
55 Sherburne Avenue
Saint Paul 55155
296-3328

MINUTES
INVESTMENT ADVISORY COUNCIL
JUNE 4, 1985

The Investment Advisory Council met on Tuesday, June 4, 1985 at 2:00 P.M. in the MEA Conference Room.

Members Present: Judith Mares, Malcolm McDonald, Henry Adams Jr., Allen Eldridge, Richard Hume, Jay Kiedrowski, Gary Norstrem, Mike Rosen, Joe Rukavina, Ray Vecellio, Deborah Veverka

Members Absent: Verona Burton, James Eckmann, Paul Groschen, Ken Gudorf, Harvey Schmidt, Jan Yeomans

SBI Staff: Howard Bicker, Jeff Bailey, John Griebenow, Teresa Myers, Daralyn Peifer

Others Attending: Karen Dudley, Elton Erdahl, Arvin Herman, Andrea Kircher, Jim Ryan, Peter Sausen, Robert Whitaker

The minutes of the March 20, 1985 meeting were unanimously approved.

EXECUTIVE DIRECTOR'S REPORT

Howard Bicker, Executive Director, reviewed the asset allocation and investment performance of the Basic Retirement Funds. He reported that the total rate of return for the first quarter was 6.5%. The positive performance was due largely to the strong performance of the common stock market. Mr. Bicker reported that in aggregate, the external equity money managers slightly underperformed the Wilshire 5000. The external bond managers closely tracked the performance of the Merrill Lynch Master Bond Index.

Mr. Bicker discussed the growth of the Post Retirement Fund due in part to retirements under the Rule of 85. He anticipates a positive cash flow of $150 million during the current quarter. Mr. Bicker discussed the implementation of the dedicated bond portfolio in the Fund.

Mr. Bicker briefly reviewed the portfolio statistics, and noted that total assets approached $8.5 billion.

LEGISLATIVE REVIEW

Mr. Bicker reviewed the impact of the passage of the Board's housekeeping bill, and legislation to merge Moorhead Police & Fire Fund into the PERA Police and Fire Fund. Mr. Bicker stressed that the valuation of Moorhead's assets is an important issue as it will set precedent for future police and fire fund mergers. In response to a question from Mr. McDonald, Ms. Dudley, Executive Secretary of the Legislative Commission on Pensions & Retirement, stated that there are fifty-one police and fire funds with approximately $500 million in combined assets. Mr. Bicker stated the Moorhead transfer would take place after August 1, 1985 if approved by the City Council.

EAI CONTRACT

Mr. Adams moved to recommend a one-year extension of the Board's contract with Evaluation Associates. Ms. Mares noted the active participation of Evaluation Associates in the work of the Equity Manager Committee and the real estate program. The motion passed unanimously.

COMMITTEE REPORTS

ADMINISTRATIVE COMMITTEE

Ms. Mares stated that the committee will focus on two areas in the coming months: 1) an evaluation of the Executive Director and 2) an analysis of the repurchase agreement policy. She noted that current repurchase agreement practices do not cause concern.

ASSET ALLOCATION COMMITTEE

Mr. McDonald reviewed the report of the Asset Allocation Committee on the Permanent School Fund. The committee recommends the fund be completely invested in intermediate to long-term investment grade bonds. However, the committee would also recommend investment in equities for long term growth in principal and income if the procedures for allocating income among schools are changed. Mr. Norstrem moved approval of the report. The motion passed unanimously.

EQUITY MANAGER COMMITTEE

Ms. Veverka presented the report of the Equity Manager Committee. She stated that the current manager configuration resulted in a growth bias, which had hurt fund performance over the last two year period. She stated that while the committee believes this style will perform well again in the future, it recommends a more diversified balance of external managers within the context of aggressive equity management. Ms. Veverka also stated the committee wants to reduce the number of external managers.

The committee recommended the dismissal of Loomis Sayles, Siebel Capital, Herbert R. Smith, and Trustee & Investor. Ms. Veverka stated that performance was not the principal criteria leading to the recommendation. She stated the committee evaluated recent changes in the organizations, and determined which firms would be hired today. The committee recommended $275 million be allocated to growth managers, $240 million to rotational managers, and $275 million to value managers. Ms. Veverka anticipated that an additional value manager would be retained by the end of the year.

Ms. Veverka outlined the implementation plan for the proposed changes. In response to a question from Mr. McDonald, Mr. Bicker stated that inclusion of the assets in the index fund would require significant fund rebalancing for a short time period. In response to a question from Mr. Vecellio, Ms. Veverka stated that Siebel would be dismissed due to concerns resulting from its recent sale to Equitec, such as the possible diversion into the mutual fund business and current disagreements among the internal staff of Siebel.

Mr. Adams recommended the addition of a value manager with a contrarian style, and noted that managers should not be dismissed in two years based strictly on performance. Mr. Ryan stated that the value approach is not necessarily less risky, but offers a different course to the Board. Mr. Vecellio moved approval of the committee report.

Mr. Bicker stated that the committee has some concerns about IDS Advisory due to recent organizational problems, and will continue to monitor it closely. Ms. Mares stated the committee will also continue to evaluate the manager classifications. Mr. Vecellio amended his motion to include renewal of the contracts with the remaining equity managers for a one year period. The motion passed unanimously.

FIXED INCOME MANAGER COMMITTEE

Mr. Norstrem presented the report of the Fixed Income Manager Committee. He reviewed the structuring of the dedicated bond portfolio. Mr. McDonald moved to accept the committee report, including the recommendation to renew the contracts with the managers for a one year period. The motion passed unanimously. Mssrs. Norstrem and Vecellio complimented Mr. Bailey on his work.

ALTERNATIVE INVESTMENT COMMITTEE

Ms. Mares presented the report of the Alternative Investment Committee. Ms. Peifer and Mr. Griebenow of the Investment Staff reviewed the details of the venture capital partnerships recommended by the committee, Matrix Partners II, Allied Venture Partnership, and Inman & Bowman.

Mr. McDonald stated that the Board may delegate the authority to invest in the Minnesota Medical Seed Capital Fund to the Council and staff. Ms. Mares recommended that all investments go through the established process. Mr. Adams stated he is impressed by the staff's due diligence in both venture capital and real estate. In response to a question from Mr. Rosen, Mr. Griebenow stated that the staff had evaluated over 100 venture capital managers in the last two years.

Ms. Mares reviewed the real estate manager search. The committee recommended $40 million be invested with TCW Realty Fund III and $20 million with State Street Fund III. Ms. Veverka moved approval of the committee report. The motion passed unanimously.

Mr. Bicker stated that the committee would explore the development of pooled funds for investment in Minnesota real estate and Minnesota venture capital. He also stated that the committee would review the oil and gas program particularly due to the fact that Apache has not taken down the Board's commitment.

SOUTH AFRICA DIVESTITURE

Mr. Norstrem moved the council reaffirm its policy in opposition to divestiture of the stock of companies doing business in South Africa. The motion passed unanimously. The Council authorized the chair to communicate the Council position at her discretion.

The meeting adjourned at 3:30 P.M.

Respectfully submitted,

Howard Bicker

Howard J. Bicker
Executive Director

Tab A

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MINNESOTA STATE BOARD OF INVESTMENT

QUARTERLY INVESTMENT REVIEW

BASIC RETIREMENT FUNDS

June 30, 1985

MINNESOTA STATE BOARD OF INVESTMENT

BASIC RETIREMENT FUNDS

SECOND QUARTER 1985

Summary

ASSETS

Outstanding performances by the capital markets led to a 6.1% increase in the market value of the Basic Retirement Funds' assets in the second quarter of 1985. The strong second quarter asset growth brought the total increase in asset value for fiscal year 1985 to 22.1%. The anticipated June "bulge" of negative contributions due to early teacher retirements under the "Rule of 85" was not as large as expected. Although a significant number of early teacher retirements did take place, positive contributions to the Basic Funds partially offset withdrawals, limiting negative net contributions for the quarter to -$29 million. Although the majority of early retirements appear to have occurred, the number of retirements that will take place over the coming year remains uncertain. End-of-period market values for the most recent two quarters and five calendar years are displayed below.

Calendar Year		Market Value (millions)	Percent Change from Previous Period
1980		$1,962	+ 20.6%
1981		2,148	+ 9.5
1982		2,806	+ 30.6
1983		3,129	+ 11.5
1984		3,265	+ 4.4
1985	1Q	3,479	+ 6.6
	2Q	3,691	+ 6.1

ASSET MIX

The comparative weightings of the Basic Retirement Funds' various asset classes changed only slightly during the second quarter. The minor shifts in asset mix reflected both the relative performance of the capital markets and a continued gradual move toward the long-term target allocations for the respective asset classes.

ASSET MIX

	3/31/85	6/30/85
Common Stocks	59.1%	59.9%
Bonds	24.3	23.4
Cash Equivalents*	9.6	9.6
Alternative Equity Assets	7.0	7.1
	100.0%	100.0%

*Includes cash uncommitted to long-term assets plus cash held by all external managers.

INVESTMENT RETURNS

Benefitting from an extremely favorable environment for both common stocks and bonds, the Basic Retirement Funds' portfolio produced a 7.0% total rate of return in the second quarter of 1985. Excluding the weak performance of the Alternative Equity Assets segment, the Basic Funds earned a 7.4% return. The strong second quarter returns boosted the performance of the Basic Funds' total portfolio for the fiscal year 1985 to an outstanding 26.8%. (Excluding Alternative Equity Assets the return was 28.4%). The fiscal year 1985 returns compare favorably with the returns generated by the portfolio during the difficult fiscal year 1984.

The Basic Funds' outperformed the median of a universe of balanced funds during the second quarter as well as the fiscal year. The Basic Funds' returns were also well in excess of the inflation rates of 1.1% for the quarter and 3.7% for the year. The Basic Funds underperformed their target stock/bond composite during both periods, however, due to the underperformance of the bond segment relative to that of the strong bond market. Total portfolio and asset segment returns for the latest quarter and the most recent year are presented below.

	Total Rate of Return	
	Second Quarter 1985	Year Ending 6/30/85
Common Stocks	7.8%	30.9%
Bonds	7.7	26.4
Cash	2.1	10.0
Alternative Equity Assets	1.4	7.6
Total Fund	7.0	26.8

EQUITY PERFORMANCE

While unable to match its exceptional first quarter performance, the common stock market, as represented by the Wilshire 5000, turned in a strong quarter, producing a 7.5% total return and bringing returns for the most recent year to 31.2%. As a group, the Basic Retirement Funds' active equity managers outperformed the stock market during the second quarter, although their performance fell slightly below that of the market for the year. The performance of the index fund again closely tracked that of the Wilshire 5000, its target.

At the end of the quarter, the contracts of four of the eleven Basic Funds' active equity managers were not renewed for the next fiscal year: Loomis Sayles, Siebel, Herbert Smith, and Trustee and Investors. As discussed in the IAC's Equity Manager Committee's report to the State Board of Investment, the primary rationale for the terminations was to bring about a better balance of styles within the active equity component of the Basic Funds' portfolio. The bias towards the growth style was reduced, while the allocation to the value style was increased. In addition, questions had been raised concerning the effectiveness of several of the terminated managers' investment organizations.

With the terminations, the active equity component has been restructured to include the four active managers previously associated solely with the Supplemental Retirement and Variable Annuity Funds: BMI; Lieber; Norwest; and Waddell and Reed. During third quarter 1985, both the Basic Funds and the Supplemental and Annuity Funds will purchase units in the new common pool comprised of the remaining eleven active equity managers.

The Basic Retirement Funds' equity manager returns for the latest quarter, year, and since-inception are presented below.

Total Portfolio Returns

	Second Quarter 1985	Year Ending 6/30/85	Since Inception 3/1/83 (Annualized)
Fred Alger	9.1%	26.4%	10.5%
Alliance Capital	10.8	34.3	11.9
Beutel Goodman	7.5	36.5	19.3
Forstmann Leff	8.1	29.6	12.9
Hellman Jordan	7.4	33.9	11.3
IDS	10.1	35.9	14.3
Investment Advisers	6.5	32.5	13.2
Loomis Sayles	11.3	25.7	4.0
Siebel Capital	6.5	27.2	10.4
Herbert R. Smith	9.1	20.2	1.3
Trustee & Investors	4.1	18.4	1.9
Total - External Active Managers	8.2	29.3	10.3
Wilshire Associates (Index Fund)	7.7	31.6	NA
Wilshire 5000	7.5	31.2	15.7

BOND PERFORMANCE

Interest rates, particularly at the short-term end of the spectrum, declined steadily throughout the second quarter of 1985, reaching their lowest levels in recent years. Responding to the positive interest rate climate, the bond market as represented by the Merrill Lynch Master Bond Index produced an 8.6% total return for the second quarter. A 29.0% total return for fiscal year 1985 was in pleasant contrast to the meager 1.7% return generated in fiscal year 1984.

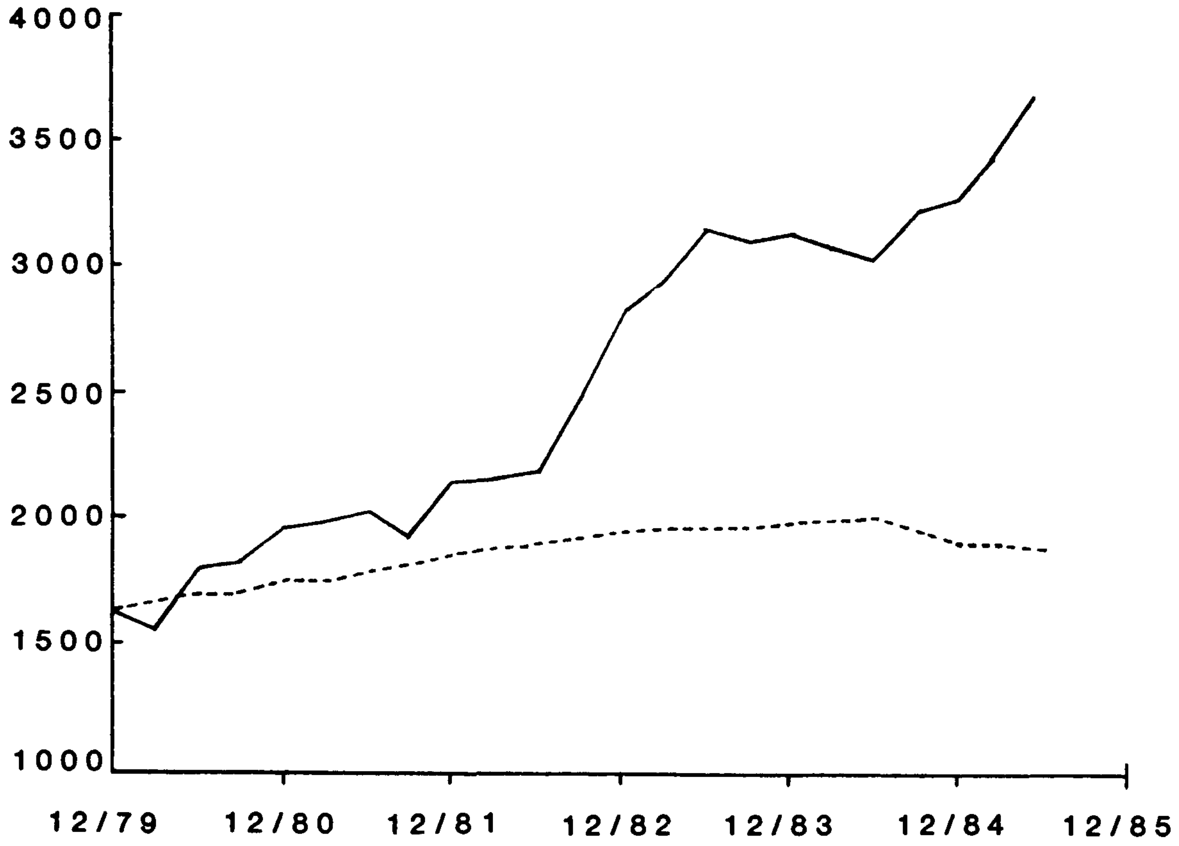
Although the majority of the individual active bond managers outperformed the market during the second quarter, as a group the Basic Funds' managers produced a 7.8% second quarter return, slightly underperforming the market. With a combined annual return of 27.1%, the active bond managers underperformed the market during fiscal year 1985, their first full year of operation, as well. The Basic Retirement Funds' bond manager returns for the latest quarter and year are shown below.

	Total Portfolio Returns	
	Second Quarter 1985	Since Inception 6/30/84
Investment Advisers	9.2%	35.2%
Lehman Management	7.6	27.5
Miller Anderson	5.7	22.9
Morgan Stanley	9.1	26.2
Norwest Bank Minneapolis	7.1	23.7
Western Asset	9.1	32.2
Total - External Managers	7.8	27.1
Merrill Lynch Master Bond Index	8.6	29.0

FIGURE 1

BASIC RETIREMENT FUNDS

ASSET GROWTH



BEGINNING VALUE PLUS NET CONTRIBUTIONS ---
TOTAL PORTFOLIO MARKET VALUE ——

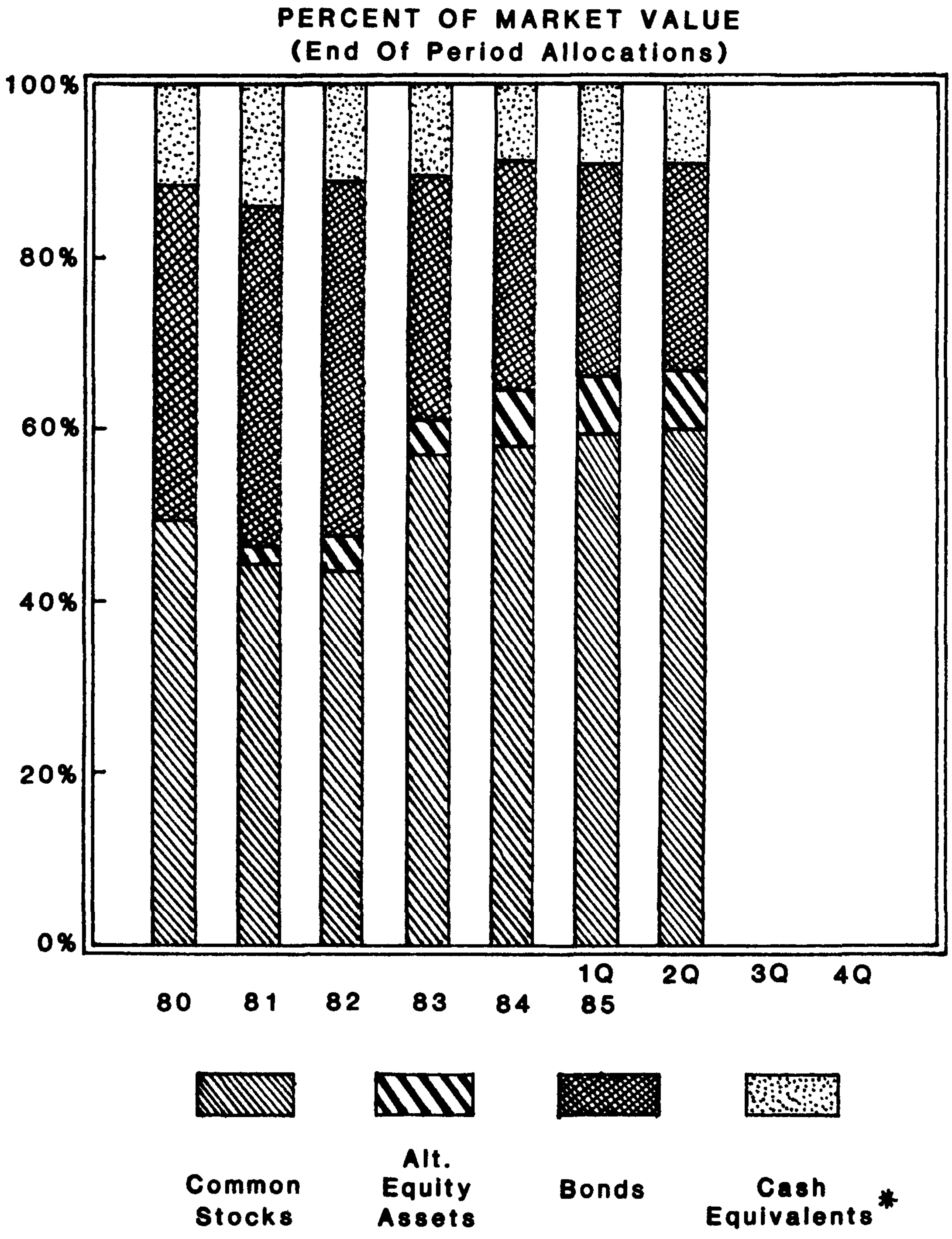
	PERIOD ENDING					
	12/80	12/81	12/82	12/83	12/84	6/85
BEGINNING VALUE	1627.1	1962.0	2148.8	2806.2	3129.0	3265.0
NET CONTRIBUTIONS	122.7	114.9	91.0	40.0	- 77.6	-27.4
INVESTMENT RETURN	212.2	71.9	566.4	282.8	213.6	453.5
ENDING VALUE	1962.0	2148.8	2806.2	3129.0	3265.0	3691.1

(MILLIONS OF DOLLARS)

FIGURE 2

BASIC RETIREMENT FUNDS

ASSET MIX



* Includes cash uncommitted to long-term assets plus cash held by all external managers.

TABLE 1

BASIC RETIREMENT FUNDS

ASSET MIX

PERCENT OF MARKET VALUE
(End of Period Allocations)

		Common Stocks		Bonds		Cash*		Real Estate		Resource Funds		Venture Capital	
		$Million	Percent	$Million	Percent	$Million	Percent	$Million	Percent	$Million	Percent	$Million	Percent
1980		964	49.1	767	39.1	231	11.8	-	-	-	-	-	-
1981		959	44.6	865	40.3	297	13.8	20	0.9	8	0.4	-	-
1982		1,212	43.2	1,165	41.5	317	11.3	93	3.3	17	0.7	-	-
1983		1,773	56.7	892	28.5	342	10.9	101	3.2	21	0.7	-	-
1984		1,887	57.8	847	25.9	308	9.4	178	5.5	23	0.7	22	0.7
1985	1Q	2,055	59.1	845	24.3	335	9.6	194	5.6	25	0.7	26	0.7
	2Q	2,209	59.9	865	23.4	355	9.6	203	5.5	25	0.7	34	0.9

*Includes cash uncommitted to long-term assets plus cash held by all external managers.

TABLE 2

BASIC RETIREMENT FUNDS

ASSET MIX - ACTUAL vs. POLICY

PERCENT OF MARKET VALUE
(End of Period Allocations)

		Common Stocks*						Fixed Income** *			Real Estate*			Resource Funds Venture Capital*		
		Passive Management			Active Management											
		Actual	Policy	Diff.	Actual	Policy	Diff.	Actual	Policy	Diff.	Actual	Policy	Diff.	Actual	Policy	Diff.
1983	1Q	0	40	-40	57.9	20	+37.9	38.3	25	+13.3	3.2	10	-6.8	0.6	5	-4.4
	2Q	0	40	-40	61.9	20	+41.9	34.5	25	+ 9.5	3.0	10	-7.0	0.6	5	-4.4
	3Q	0	40	-40	63.4	20	+43.4	32.8	25	+ 7.8	3.2	10	-6.8	0.6	5	-4.4
	4Q	43.5	40	+ 3.5	18.5	20	- 1.5	34.1	25	+ 9.1	3.2	10	-6.8	0.7	5	-4.3
1984	1Q	42.2	40	+ 2.2	17.8	20	- 2.2	35.7	25	+10.7	3.5	10	-6.5	0.8	5	-4.2
	2Q	41.7	40	+ 1.7	17.7	20	- 2.3	33.3	25	+ 8.3	5.5	10	-4.5	1.8	5	-3.2
	3Q	42.5	40	+ 2.5	17.9	20	- 2.1	32.6	25	+ 7.6	5.3	10	-4.7	1.7	5	-3.3
	4Q	42.1	40	+ 2.1	18.0	20	- 2.0	32.7	25	+ 7.7	5.5	10	-4.5	1.7	5	-3.3
1985	1Q	43.0	40	+ 3.0	18.3	20	- 1.7	31.4	25	+ 6.4	5.7	10	-4.3	1.6	5	-3.4
	2Q	43.2	40	+ 3.2	18.7	20	- 1.3	30.7	25	+ 5.7	5.6	10	-4.4	1.8	5	-3.2

*Includes cash held by external managers.
**Includes cash uncommitted to long-term assets.

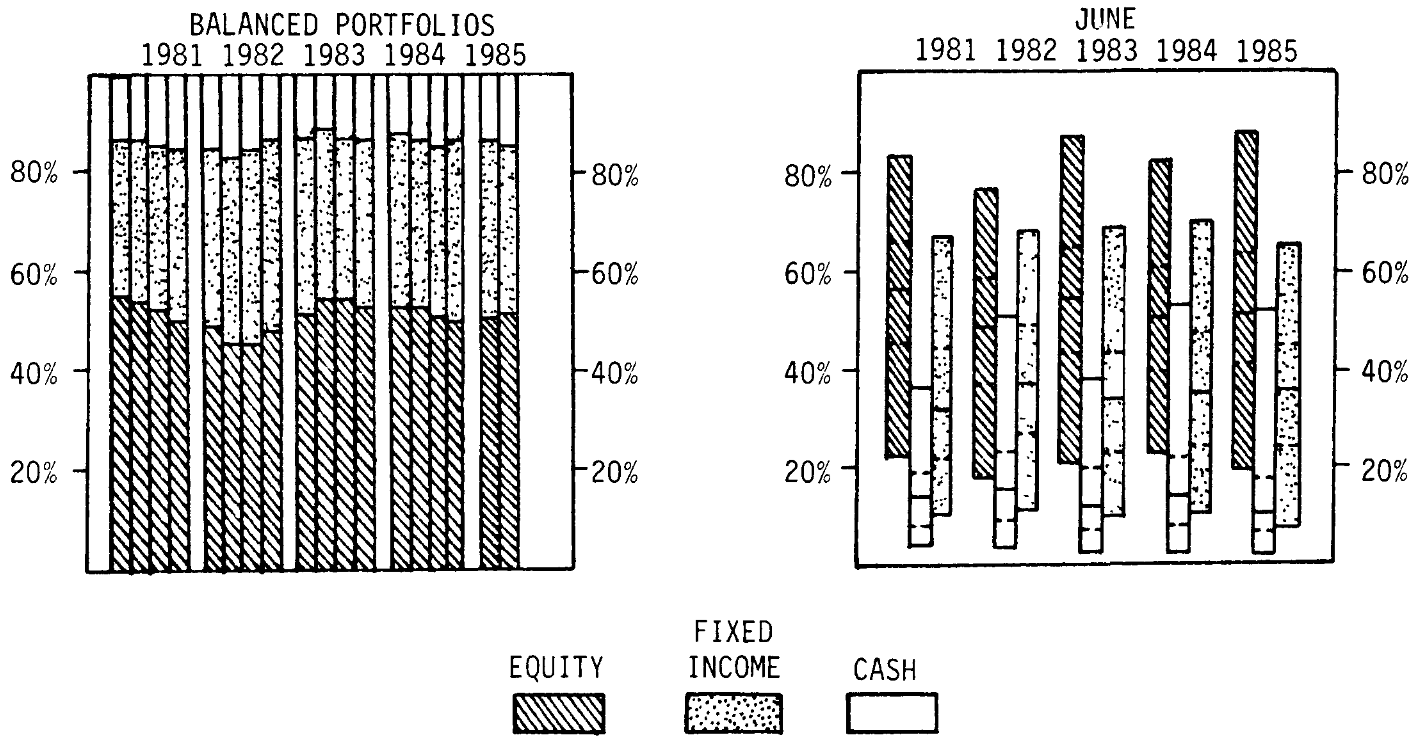
FIGURE 3

ASSET ALLOCATION PERSPECTIVE

TAX EXEMPT BALANCED PORTFOLIOS

QUARTER-TO-QUARTER AVERAGE ASSET ALLOCATION

ASSET ALLOCATION DISTRIBUTION



PERCENT EQUITY	1981	1982	JUNE 1983	1984	1985
5TH PERCENTILE	83	76	87	82	88
25TH PERCENTILE	65	57	64	60	63
MEDIAN	55	47	53	49	50
75TH PERCENTILE	44	35	42	38	40
95TH PERCENTILE	20	16	19	21	18
PERCENT CASH EQUIV					
5TH PERCENTILE	34	49	36	52	51
25TH PERCENTILE	17	21	18	20	16
MEDIAN	11	13	10	12	9
75TH PERCENTILE	6	7	5	6	5
95TH PERCENTILE	2	2	1	1	1
PERCENT FIXED INCOME					
5TH PERCENTILE	66	67	68	69	64
25TH PERCENTILE	43	48	42	46	44
MEDIAN	30	35	32	33	34
75TH PERCENTILE	20	25	21	23	23
95TH PERCENTILE	8	9	8	9	6

Source: Trust Universe Comparison Service

FIGURE 4

PERFORMANCE OF CAPITAL MARKETS

CUMULATIVE RETURNS

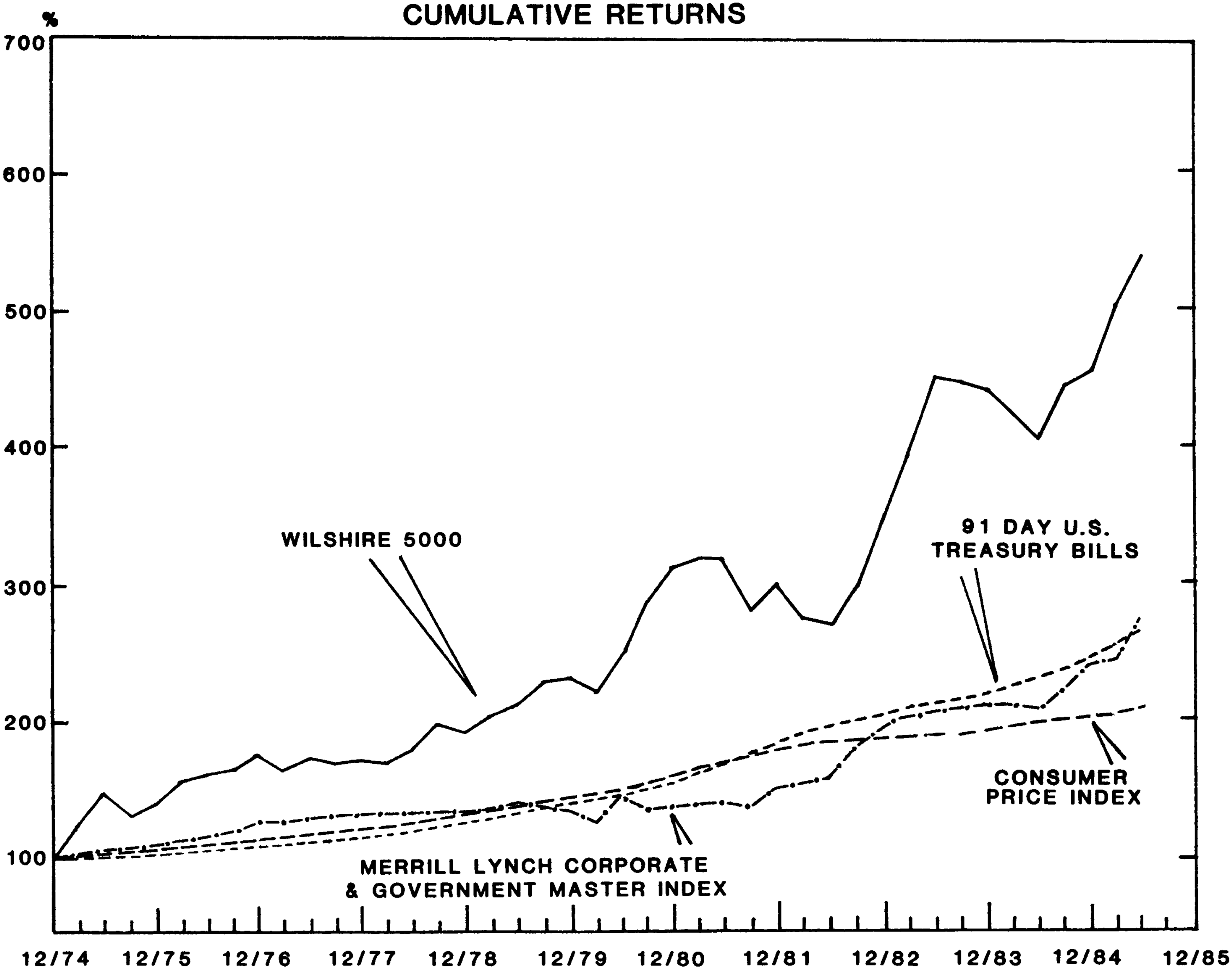


FIGURE 5

BASIC RETIREMENT FUNDS

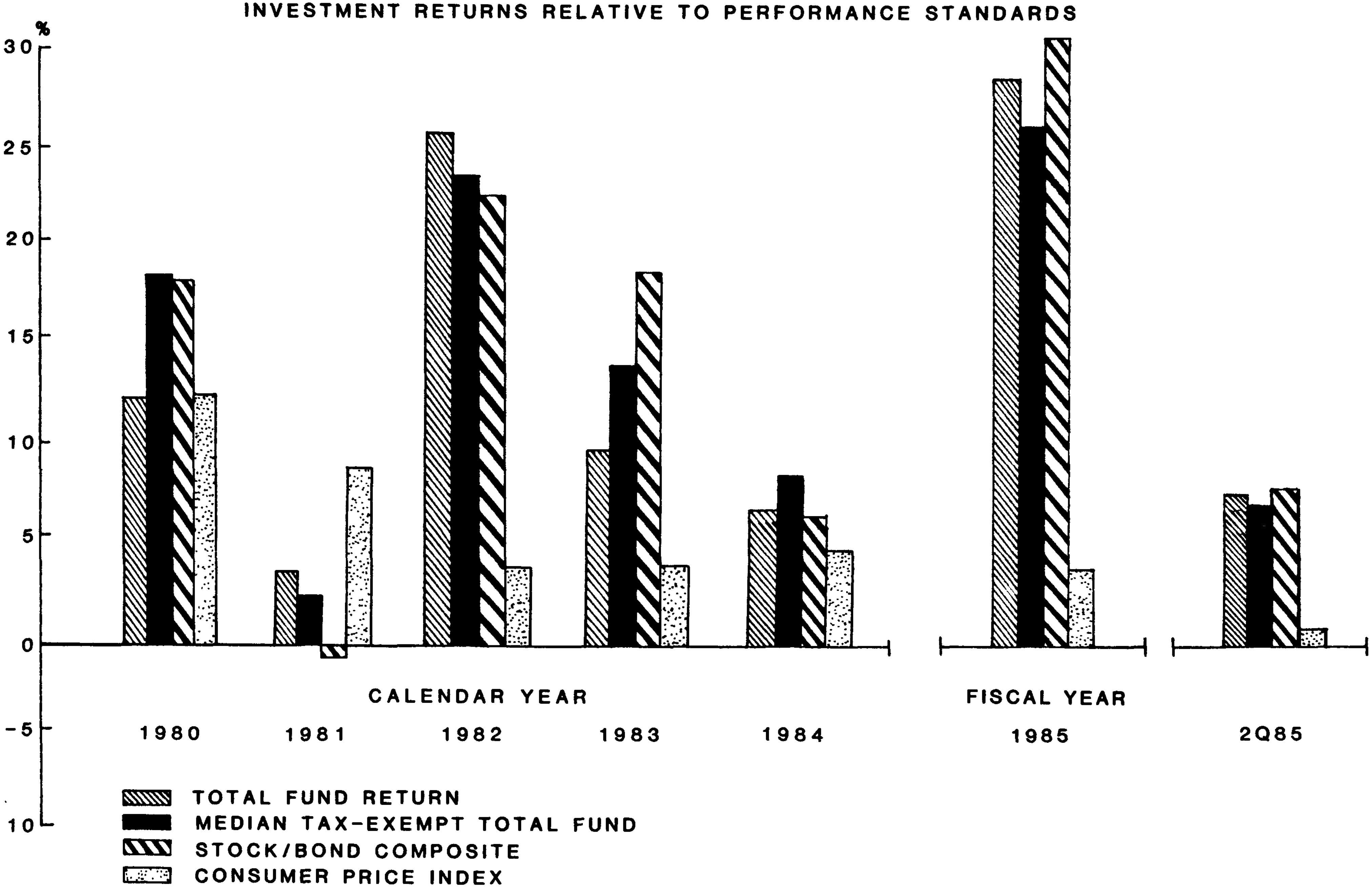


TABLE 3

BASIC RETIREMENT FUNDS

INVESTMENT RETURNS RELATIVE TO PERFORMANCE STANDARDS

Calendar Year		Total Fund Return (exc. alt. assets)	Median Tax-exempt Fund	Stock/Bond* Composite	Inflation	Total Fund Return (inc. alt. assets)
1980		12.4	18.6	18.3	12.5	12.4
1981		3.5	2.2	-0.6	8.9	3.5
1982		26.4	23.3	22.4	3.8	25.7
1983		10.3	14.1	18.8	3.8	10.1
1984		6.8	8.3	6.6	4.0	6.9
1985	1Q	6.9	5.7	7.8	1.0	6.5
	2Q	7.4	6.8	7.8	1.1	7.0
1 Year Through 6-30-85		28.4	26.2	30.6	3.7	26.8
3 Years Annualized Through 6-30-85		19.6	20.3	23.9	3.5	19.0
5 Years Annualized Through 6-30-85		13.3	14.3	14.3	5.4	13.0

*50/50 Wilshire 5000/Merrill Lynch Bond Index Composite Through 6-30-81
70/30 Wilshire 5000/Merrill Lynch Bond Index Composite 7-01-81 through 6-30-85

TABLE 4

BASIC RETIREMENT FUNDS

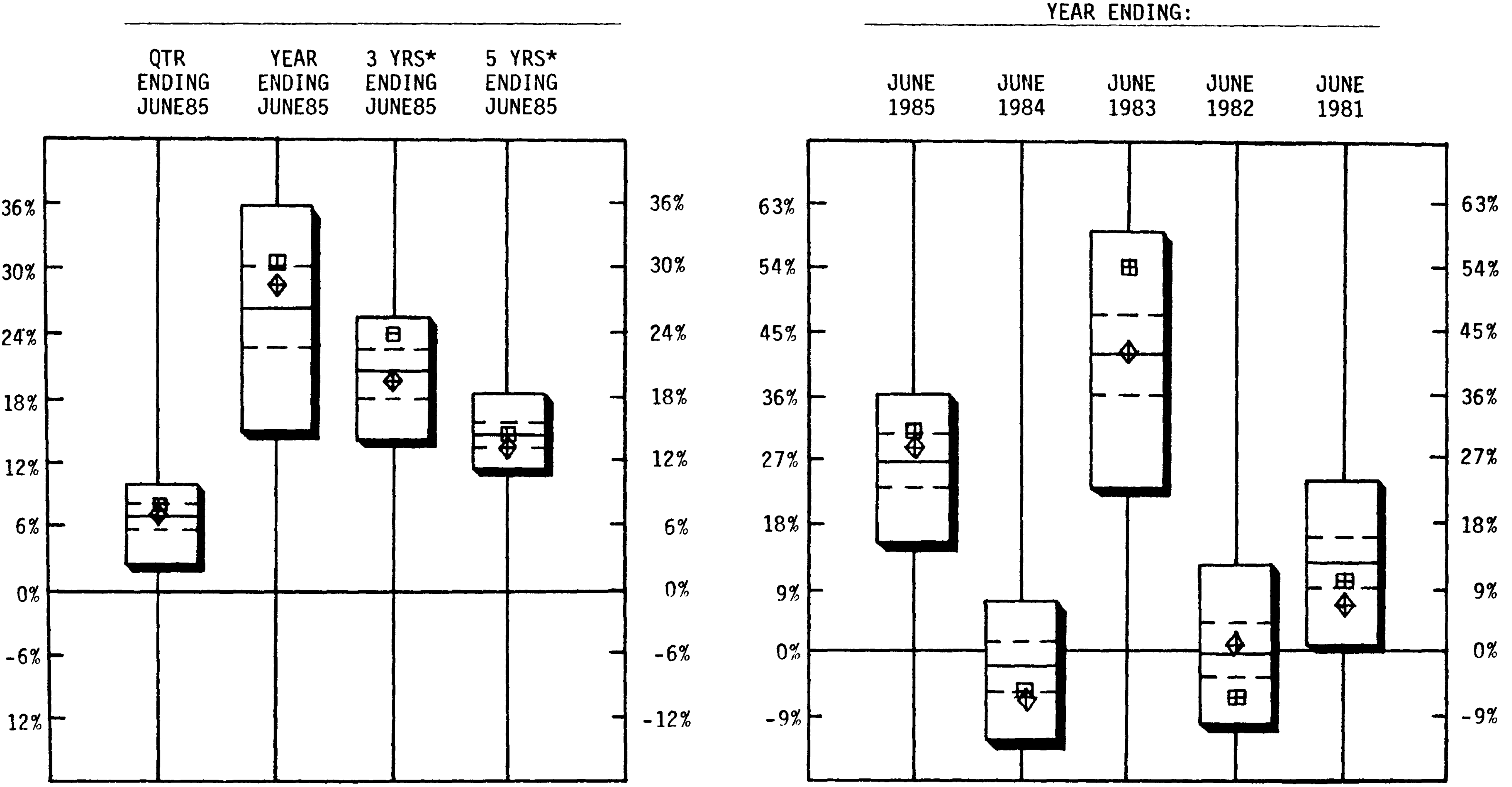
INVESTMENT RETURNS - DETAIL

Calendar Year		Total Fund Return (exc. alt. assets)	Common Stocks		Bonds		Alternative Equity Assets	Total Fund Return (inc. alt. assets)
			Basics	Wilshire 5000	Basics	ML Bond Index		
1980		12.4	26.2	33.7	-0.1	3.3	-	12.4
1981		3.5	0.0	-3.6	2.0	7.0	-	3.5
1982		26.4	21.6	18.7	38.1	29.8	11.9	25.7
1983		10.3	12.7	23.5	9.3	7.8	7.4	10.1
1984		6.8	2.7	3.1	14.6	15.1	11.8	6.9
1985	1Q	6.9	9.5	10.3	2.1	2.0	1.6	6.5
	2Q	7.4	7.8	7.5	7.7	8.6	1.4	7.0
1 Year Through 6-30-85		28.4	30.9	31.2	26.4	29.0	7.6	26.8
3 Years Annualized Through 6-30-85		19.6	21.5	25.9	21.1	19.1	8.0	19.0
5 Years Annualized Through 6-30-85		13.3	14.3	16.3	12.4	12.7	NA	13.0

FIGURE 6

DISTRIBUTION OF TOTAL PORTFOLIO RETURNS

TAX EXEMPT BALANCED PORTFOLIOS



⊞ Wilshire 5000/Merrill Lynch Bond Index
⊕ Basic Retirement Funds

Source: Trust Universe Comparison Service; Merrill Lynch Capital Markets

TABLE 5

DISTRIBUTION OF TOTAL PORTFOLIO RETURNS

TAX EXEMPT BALANCED PORTFOLIOS

	QTR ENDING JUNE 85	YEAR ENDING JUNE 85	3 YRS* ENDING JUNE 85	5 YRS* ENDING JUNE 85	YEAR ENDING: JUNE 1985	JUNE 1984	JUNE 1983	JUNE 1982	JUNE 1981
5TH PERCENTILE	9.9%	35.8%	25.3%	18.3%	35.8%	6.7%	58.9%	11.7%	23.7%
25TH PERCENTILE	8.1	30.3	22.2	15.3	30.3	1.2	47.0	3.9	15.7
MEDIAN	6.8	26.2	20.3	14.3	26.2	-2.3	41.7	-0.5	12.0
75TH PERCENTILE	5.6	22.6	17.8	13.3	22.6	-5.8	35.8	-3.7	8.6
95TH PERCENTILE	2.5	14.9	14.1	11.3	14.9	-12.9	22.5	-10.6	0.6
WILSHIRE 5000	7.5	31.2	25.9	16.3	31.2	-8.6	66.4	-14.9	25.1
MERRILL LYNCH BOND INDEX	8.6	29.0	19.1	12.7	29.0	1.7	28.9	12.3	-4.2
** STOCK/BOND INDEX	7.8	30.6	23.9	14.3	30.6	-5.6	54.5	- 7.2	10.3
BASIC RETIREMENT FUNDS	7.4	28.4	19.6	13.3	28.4	-6.3	42.1	1.8	7.1

*Annualized

**50/50 Wilshire 5000/Merrill Lynch Bond Index Composite Through 6-30-81
70/50 Wilshire 5000/Merrill Lynch Bond Index Composite 7-01-81 Through 6-30-85

Source: Trust Universe Comparison Service; Merrill Lynch Capital Markets.

TABLE 6

BASIC RETIREMENT FUNDS

EQUITY MANAGER PERFORMANCE

TOTAL PORTFOLIO RETURNS

JUNE 30, 1985

Managers	Second Quarter 1985	Year Ending 6/30/85	Two Years Ending 6/30/85 (Annualized)	Since Inception 3/1/83 (Annualized)
Fred Alger	9.1%	26.4%	4.2%	10.5%
Alliance Capital	10.8	34.3	6.3	11.9
Beutel Goodman	7.5	36.5	17.3	19.3
Forstmann Leff	8.1	29.6	8.4	12.9
Hellman Jordan	7.4	33.9	10.7	11.3
IDS	10.1	35.9	8.9	14.3
Investment Advisers	6.5	32.5	10.4	13.2
Loomis Sayles	11.3	25.7	-0.2	4.0
Siebel Capital	6.5	27.2	5.7	10.4
Herbert R. Smith	9.1	20.2	-1.6	1.3
Trustee & Investors	4.1	18.4	-4.8	1.9
Total - External Active Managers	8.2	29.3	6.0	10.3
Wilshire Associates (Index Fund)	7.7	31.6	NA	NA
Performance Standards				
Wilshire 5000	7.5	31.2	9.5	15.7
TUCS Aggressive Manager Median	7.3	25.8	3.9	NA
Inflation	1.1	3.7	4.0	4.1

TABLE 7

BASIC RETIREMENT FUNDS

EXTERNAL EQUITY MANAGER RISK PROFILES

QUARTER-END PORTFOLIO STATISTICS

MANAGER	# OF STOCKS	EQUITY ALLOC.	YIELD	P/E	MKT VOLTY	DIVERSFN	PORTFOLIO RISK ORIENTATION Earn. Var.	Earn. Success	Size	Growth	Fin. Lever.
Fred Alger	41	92	1.9%	18.5	1.23	0.79	++	--	0	++	0
Alliance	34	95	1.9	17.9	1.21	0.76	+	--	+	++	0
Loomis Sayles	22	99	2.1	21.7	1.37	0.75	+	--	+	+	-
Herbert R. Smith	44	91	2.5	12.9	1.26	0.85	++	--	+	+	0
Trustee & Investors	49	97	2.9	13.4	1.18	0.91	++	++	0	+	++
Mean Growth Manager	38	95	2.3	16.9	1.25	0.81	++	-	+	+	0
Forstmann Leff	33	77	2.5	15.6	1.22	0.89	+	0	--	+	+
Hellman Jordan	38	89	3.8	14.1	1.10	0.89	0	+	--	0	++
IDS	50	98	3.5	16.3	1.11	0.87	+	--	-	+	0
Investment Advisers	37	90	2.9	11.8	1.17	0.90	+	0	--	+	0
Siebel	55	85	2.0	14.2	1.21	0.86	+	0	++	+	0
Mean Rotational Manager	43	88	2.9	14.4	1.16	0.88	+	0	-	+	+
Beutel Goodman	20	94	3.3	17.3	1.24	0.83	++	+	++	+	++
Composite External Manager	303	91	2.7	13.3	1.21	0.89	+	0	+	+	+
Index Fund Manager	1150	100	3.9	NA	1.06	0.95	0	0	0	0	0
Composite All Basic Managers	1198	97	3.5	NA	1.10	0.93	0	0	0	0	0

TABLE 8

BASIC RETIREMENT FUNDS

EXTERNAL EQUITY MANAGER SECTOR WEIGHTINGS

MANAGER	SECTOR WEIGHTINGS: CAPITAL GOODS	CONSUMER DURABLES	CONSUMER NONDURABLES	ENERGY	FINANCIAL	MAT. & SERVICES	TECHNOLOGY	TRANS-PORTATION	UTILITIES
Fred Alger	---%	17.6%	36.0%	1.4%	9.3%	3.5%	15.7%	16.6%	---%
Alliance	---	8.7	49.9	2.2	14.3	---	12.7	8.9	3.3
Loomis Sayles	---	2.7	44.6	---	47.3	---	5.5	---	---
Herbert R. Smith	2.3	3.3	23.1	8.8	25.5	5.2	18.8	13.1	---
Trustee & Investors	6.2	1.3	12.7	3.7	7.2	33.2	25.2	9.9	0.6
Mean Growth Manager	1.7	6.7	33.3	3.2	20.7	8.4	15.6	9.7	0.8
Forstmann Leff	1.1	7.4	40.1	---	25.1	10.3	11.0	5.1	---
Hellman Jordan	3.9	3.5	23.0	7.0	26.0	15.5	7.5	3.5	10.0
IDS	3.0	4.8	27.7	8.4	13.4	7.2	11.7	8.5	15.1
Investment Advisers	3.4	8.8	6.5	3.2	18.8	17.1	29.0	13.2	---
Siebel	2.6	11.7	40.3	1.1	13.2	6.4	24.8	---	---
Mean Rotational Manager	2.8	7.2	27.5	3.9	19.3	11.3	16.8	6.1	5.0
Beutel Goodman	2.8	---	12.8	---	30.4	23.1	19.1	11.7	---
Composite External Managers	2.3	6.3	28.4	3.2	21.0	11.1	16.4	8.4	2.9
Index Fund Manager	4.8	4.1	26.7	11.2	11.8	10.8	13.7	3.0	13.8
Composite All Basic Managers	4.1	4.7	27.2	8.9	14.4	10.9	14.5	4.6	10.7
Wilshire 5000	4.8	4.0	26.3	11.2	12.2	10.8	13.6	3.6	13.5

STAFF COMMENTS:

The stock market, as represented by the Wilshire 5000, experienced a continuation of the rally that began in early 1985, reaching record highs and producing a 7.5% total return for second quarter 1985. With four consecutive quarters of positive returns, the stock market generated an outstanding 31.2% return for the latest year. For the quarter, the Financial sector of the market, which was aided by steadily declining interest rates, was the top performing sector. The Utilities and Consumer Non-Durables sectors also performed extremely well. Faltering oil prices resulted in weak returns from the Energy sector but spurred performance in the Transportation sector, particularly Air Transport and Trucking issues. The Technology sector, the only sector to generate negative returns for the period, continued as the poorest performing market sector.

Unlike the inhospitable first quarter in which market leadership rotated rapidly, leadership during the second quarter remained fairly constant with interest-sensitive issues doing well throughout the period. Consequently, equity managers fared better relative to the market than they had in recent quarters. Over 40% of the equity managers in the TUCS universe outperformed the market during the second quarter. Only 25% of the managers, however, produced returns which were superior to that of the market in the latest year. The relative performance of aggressive equity managers, as represented by a sample of the TUCS universe, also improved during the second quarter with the median TUCS aggressive manager producing a 7.3% return for the quarter and a 25.8% return for the latest year.

Generating a strong aggregate return of 8.2%, the Basic Retirement Funds' active equity managers outperformed both the market and the median TUCS aggressive manager in the second quarter. For fiscal year 1985, the managers produced a 29.3% total return, lagging the performance of the market slightly but outperforming the median aggressive manager by a significant margin.

Due primarily to positions in the Consumer Non-Durables and Financial sectors, Alliance Capital and Loomis Sayles were the top performing managers for the quarter, producing returns considerably in excess of the market's. Beutel Goodman, despite experiencing a difficult second quarter, remained the top performing manager for the latest year. In general, the Basic Funds' active managers with value and rotational orientations have performed well during the latest year. As discussed in previous quarterly investment summaries, the Basic Funds' growth style managers, with the exception of Alliance Capital which has focused on larger cap issues, have been hindered by the continued poor environment for smaller capitalization, aggressive growth stocks.

During the second quarter, the characteristics of the aggregate Basic Funds' active equity portfolio remained relatively unchanged. As a group, the managers increased their equity allocation slightly. The combined portfolio P/E increased, while portfolio yield decreased slightly. The managers continued to be significantly overweighted in the Financial and Transportation sectors and underweighted in the Energy and Utilities sectors.

MINNESOTA STATE BOARD OF INVESTMENT

QUARTERLY INVESTMENT REVIEW

POST RETIREMENT INVESTMENT FUND

June 30, 1985

MINNESOTA STATE BOARD OF INVESTMENT

POST RETIREMENT INVESTMENT FUND

SECOND QUARTER 1985

Summary

ASSETS

The assets of the Post Retirement Investment Fund increased in market value by 15.2%, or almost $400 million, during the second quarter. This impressive growth was fueled by a combination of large positive net contributions and the strong performance of the capital markets. As expected, net contributions to the Fund were exceptionally large in the second quarter, due primarily to the many teacher retirements that took place under the "Rule of 85." End-of-period market values of the Post Retirement Investment Fund's assets over the last five years are shown below.

Calendar Year		Market Value (millions)	Percent Change from Previous Period
1980		$1,161	+20.2
1981		1,101	- 5.2
1982		1,523	+38.3
1983		1,803	+18.4
1984		2,246	+24.6
1985	1Q	2,352	+ 4.7
	2Q	2,709	+15.2

ASSET MIX

The cash component of the Post Retirement Investment Fund increased near the end of the quarter. This increase is temporary and was the result of the large influx of new money generated by early retirements under the "Rule of 85." Common stocks declined slightly as a percentage of the total portfolio. This decrease was due to the continued commitment of assets to fixed income securities in amounts sufficient to fund the new retirees' portion of the dedicated bond portfolio. The percentage of the Fund (at market value) invested in common stocks, bonds and cash equivalents over the last two quarters is presented below.

ASSET MIX

	3/31/85	6/30/85
Common Stocks	30.4%	27.1
Bonds	66.0	65.7
Cash Equivalents	3.6	7.2
	100.0%	100.0%

EQUITY PERFORMANCE

The first quarter total rate of return on the equity segment of the Post Retirement Investment Fund was 6.9%. This return was slightly below the 7.5% return achieved by the Wilshire 5000. It also fell below the 8.0% return produced by the SBI external manager pool. Nevertheless, for the most recent year, the Fund's internal equity manager has outperformed both the Wilshire 5000 and external equity manager pool.

The equity segment's sector weightings shifted modestly during the quarter. Positions in Capital Goods, and Technology were increased, while holdings in Consumer Durables and Non-durables, and Energy were reduced. The equity segment remains overweighted in the Financial and Technology sectors and underweighted in the Consumer Nondurables and Utilities sectors.

The equity portfolio's returns over the most recent quarter, one year and since March 1, 1983 (to facilitate comparability with external manager performance) are displayed below.

	Second Quarter 1985	Year Ending 6/30/85	Since 3/1/83 (Annualized)
Equity Portfolio	6.9%	33.9%	14.7%
Wilshire 5000	7.5	31.2	15.7

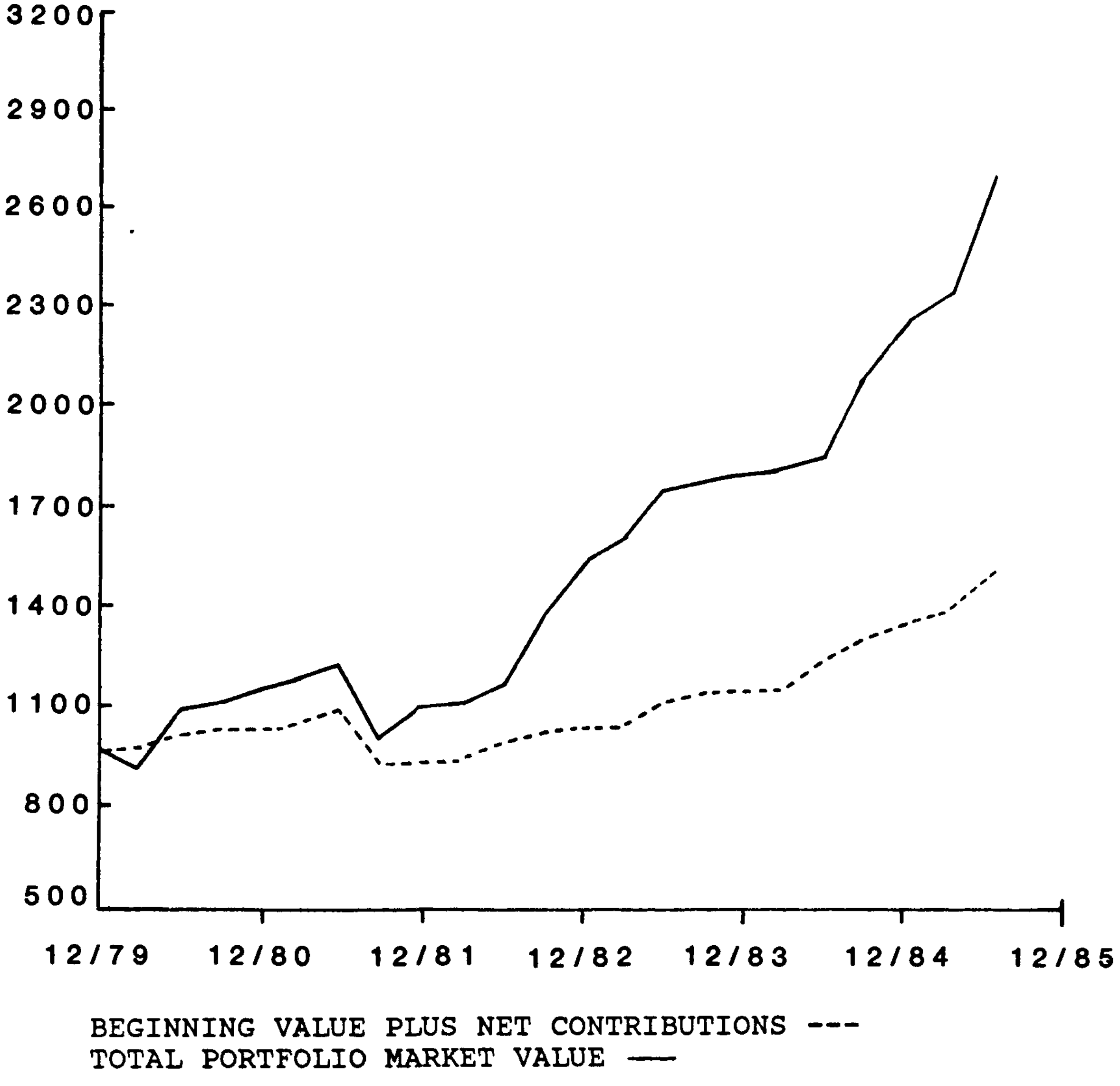
BOND PORTFOLIO

As discussed in the March quarterly review, the Post Retirement Investment Fund's dedicated bond portfolio was constructed early in the first quarter, 1985. The dedicated portfolio will not be rebalanced until year-end 1985, when new actuarial data is available from the retirement systems. In the meantime, however, new contributions are being invested in a separate portfolio of government securities. This portfolio possesses a duration roughly matching that of the newly created liabilities. This policy has the effect of neutralizing much of the interest rate risk that otherwise would exist until the dedicated bond portfolio is rebalanced.

FIGURE 7

POST RETIREMENT INVESTMENT FUND

ASSET GROWTH



	YEAR ENDING					
	12/80	12/81	12/82	12/83	12/84	6/85
BEGINNING VALUE	965.6	1161.6	1100.9	1522.9	1802.9	2245.7
NET CONTRIBUTIONS	70.1	-97.8	102.6	109.1	201.0	159.6
INVESTMENT RETURN	125.9	37.1	319.4	170.8	241.8	303.3
ENDING VALUE	1161.6	1100.9	1522.9	1802.9	2245.7	2708.6

(MILLIONS OF DOLLARS)

FIGURE 8

POST RETIREMENT INVESTMENT FUND

ASSET MIX

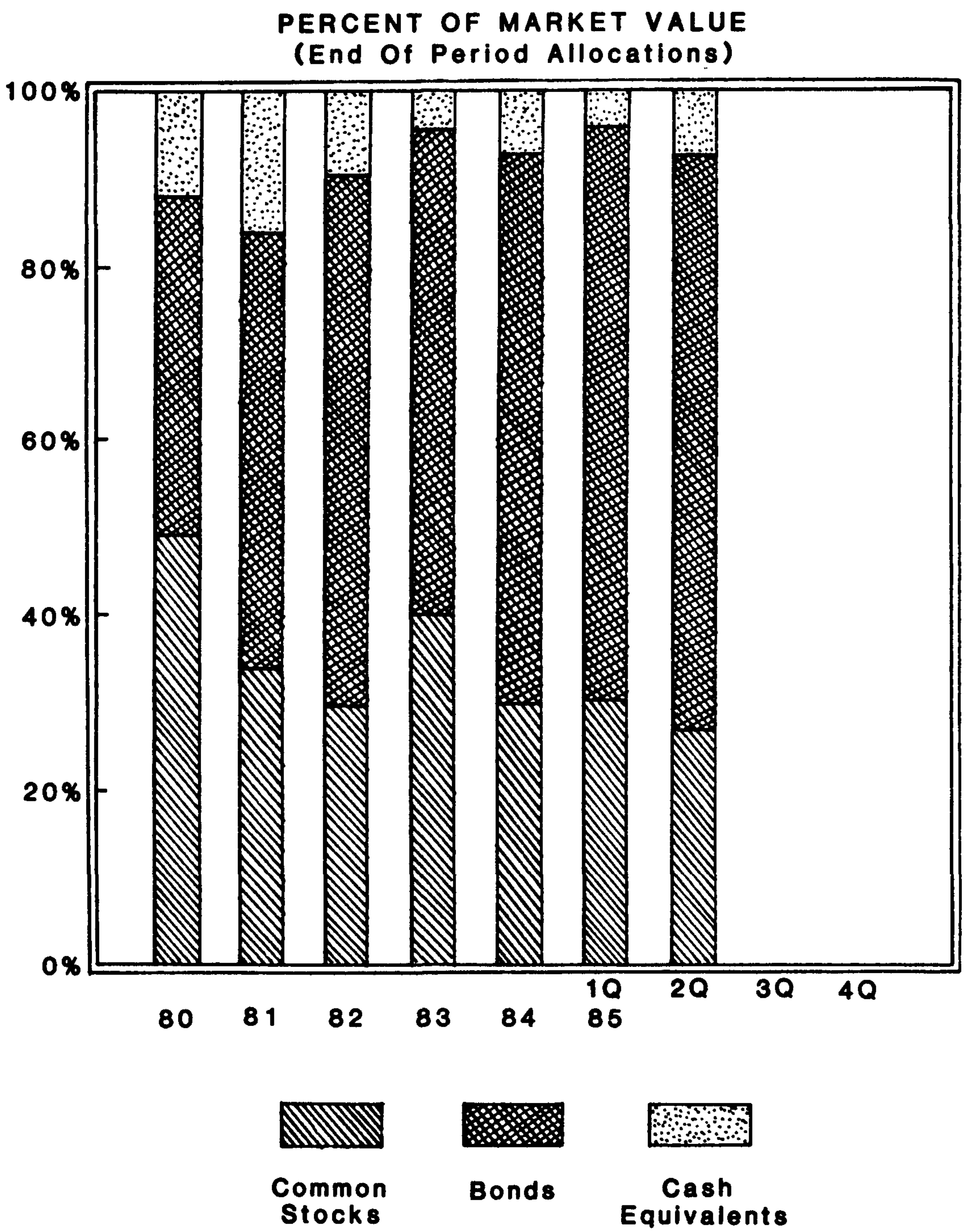


TABLE 9

POST RETIREMENT INVESTMENT FUND

ASSET MIX

PERCENT OF MARKET VALUE

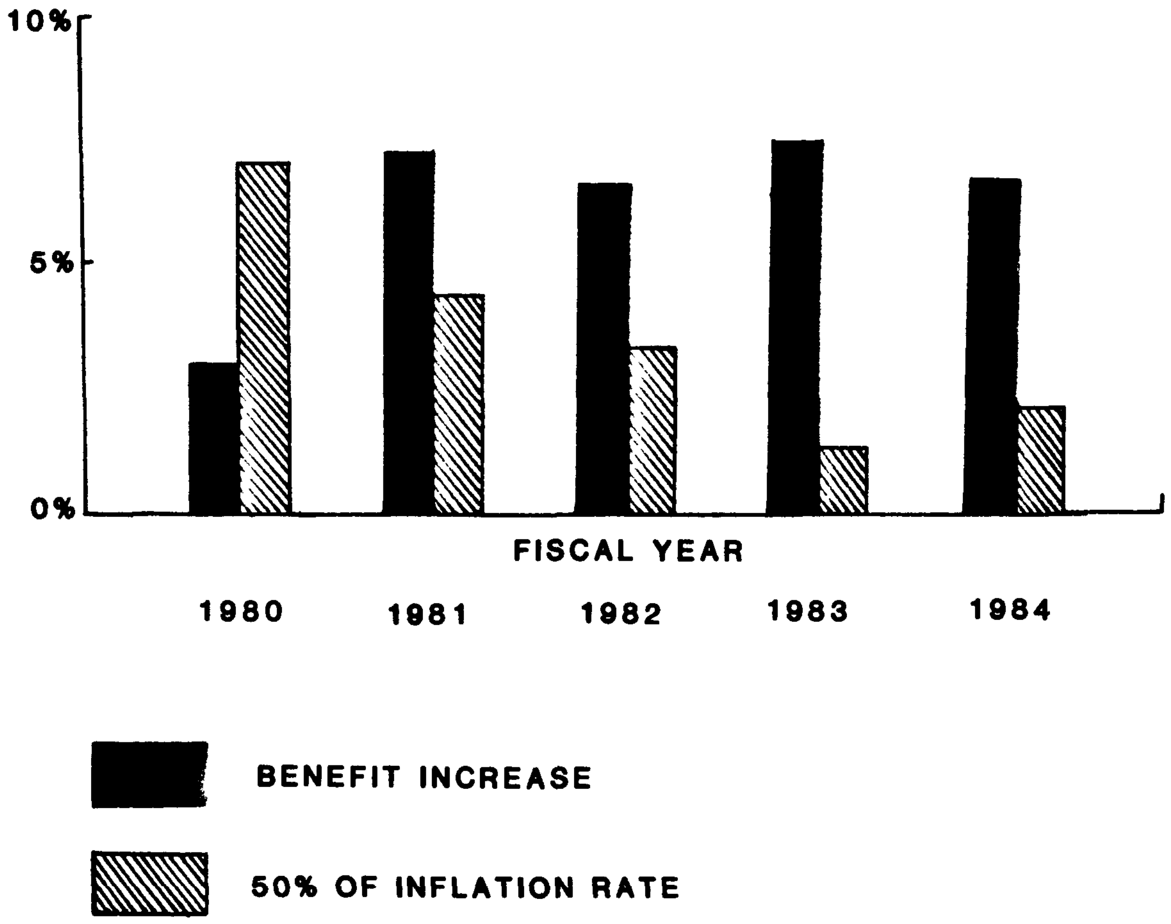
(End Of Period Allocations)

Calendar Year		Common Stocks		Bonds		Cash	
		$Million	Percent	$Million	Percent	$Million	Percent
1980		568.4	48.9	453.0	39.0	140.3	12.1
1981		376.0	34.2	545.5	49.5	179.4	16.3
1982		465.0	30.5	919.9	60.4	138.1	9.1
1983		730.3	40.5	1,002.1	55.6	69.8	3.9
1984		674.8	30.0	1,411.4	62.9	159.5	7.1
1985	1Q	715.5	30.4	1,551.8	66.0	85.1	3.6
	2Q	732.6	27.1	1,780.1	65.7	195.9	7.2

FIGURE 9

POST RETIREMENT INVESTMENT FUND

BENEFIT INCREASES VERSUS INFLATION



	FISCAL YEAR					ANNUALIZED	
	1980	1981	1982	1983	1984	3 Yr.	5 Yr.
BENEFIT INCREASE	3.2%	7.4%	6.9%	7.5%	6.9%	7.1%	6.4%
50% OF INFLATION RATE	7.2	4.8	3.6	1.3	2.2	2.3	3.7

FIGURE 10

POST RETIREMENT INVESTMENT FUND

EQUITY SEGMENT RETURNS

INVESTMENT RETURNS RELATIVE TO PERFORMANCE STANDARDS

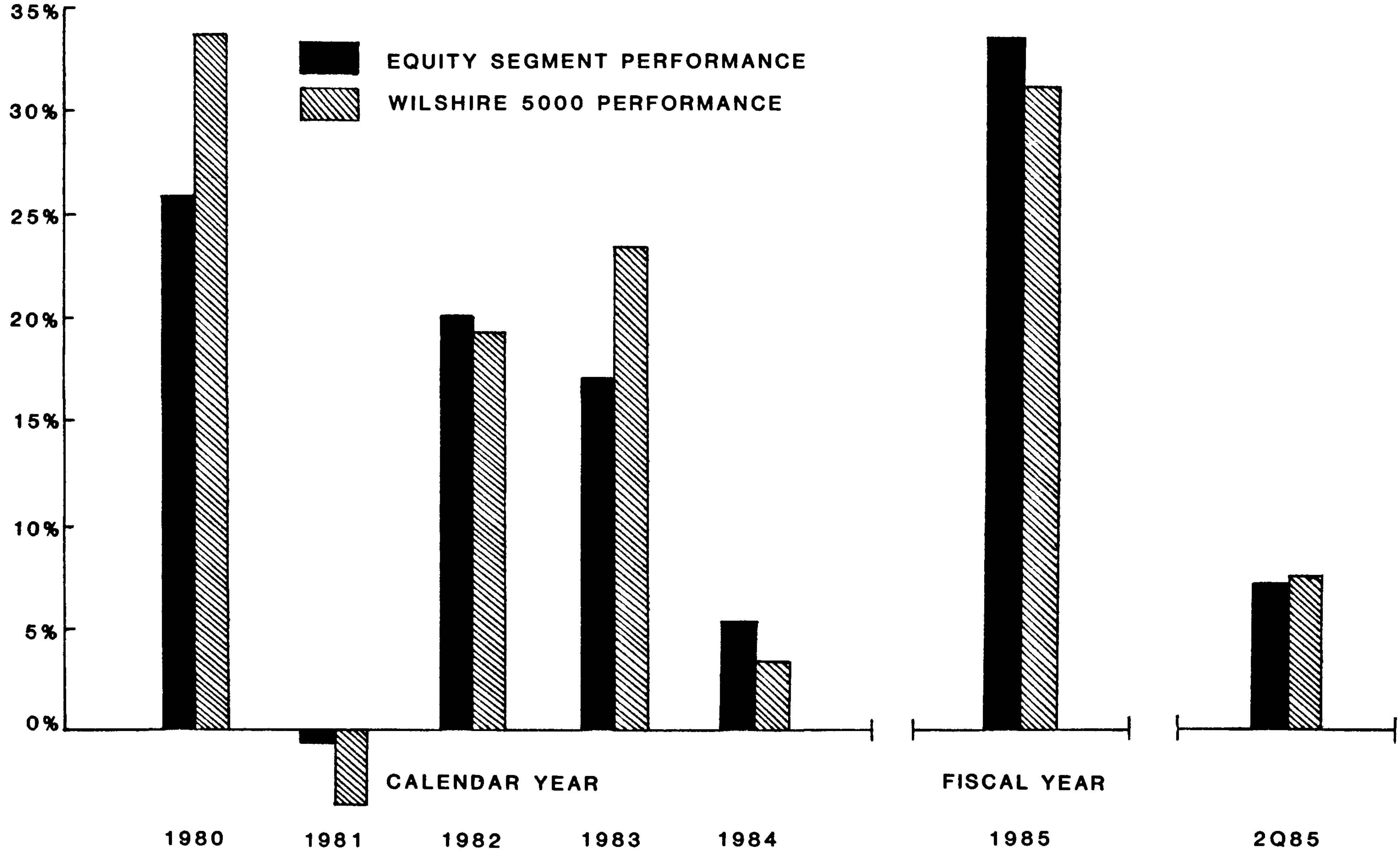


TABLE 10

POST RETIREMENT INVESTMENT FUND

EQUITY SEGMENT RETURNS

INVESTMENT RETURNS RELATIVE TO PERFORMANCE STANDARDS

		Total Returns	
		Post Retirement Fund	Wilshire 5000
1980		25.9%	33.7%
1981		-0.3	-3.6
1982		20.0	18.7
1983		16.9	23.5
1984		5.2	3.1
1985	1Q	9.7	10.3
	2Q	6.9	7.5
1 Year Through 6-30-85		33.9	31.2
3 Years Annualized Through 6-30-85		23.4	25.9
5 Years Annualized Through 6-30-85		15.0	16.3

TABLE 11

POST RETIREMENT INVESTMENT FUND

EQUITY MANAGER DATA

JUNE 30, 1985

SECTOR WEIGHTINGS

SECTORS	WEIGHTING INTERNAL MANAGER	WEIGHTING WILSHIRE 5000
Capital Goods	4.9%	4.8%
Consumer Durables	3.7	4.0
Consumer Nondurables	15.6	26.3
Energy	16.0	11.2
Financial	17.3	12.2
Materials & Services	11.7	10.8
Technology	19.9	13.6
Transportation	4.2	3.6
Utilities	6.7	13.5
	100.0%	100.0%

QUARTER-END PORTFOLIO STATISTICS

	# OF STOCKS	EQUITY ALLOC.	YIELD	P/E	MKT VOLTY	DIVERSFN	PORTFOLIO RISK ORIENTATION				
							Earn. Var.	Earn. Success	Size	Growth	Fin. Lever.
Internal Manager	111	100%	4.0%	11.7	1.10	0.95	-	+	+	0	+

MINNESOTA STATE BOARD OF INVESTMENT

QUARTERLY INVESTMENT REVIEW

SUPPLEMENTAL RETIREMENT FUND
(Income Share Account)

SUPPLEMENTAL RETIREMENT FUND
(Growth Share Account)

MINNESOTA VARIABLE ANNUITY FUND

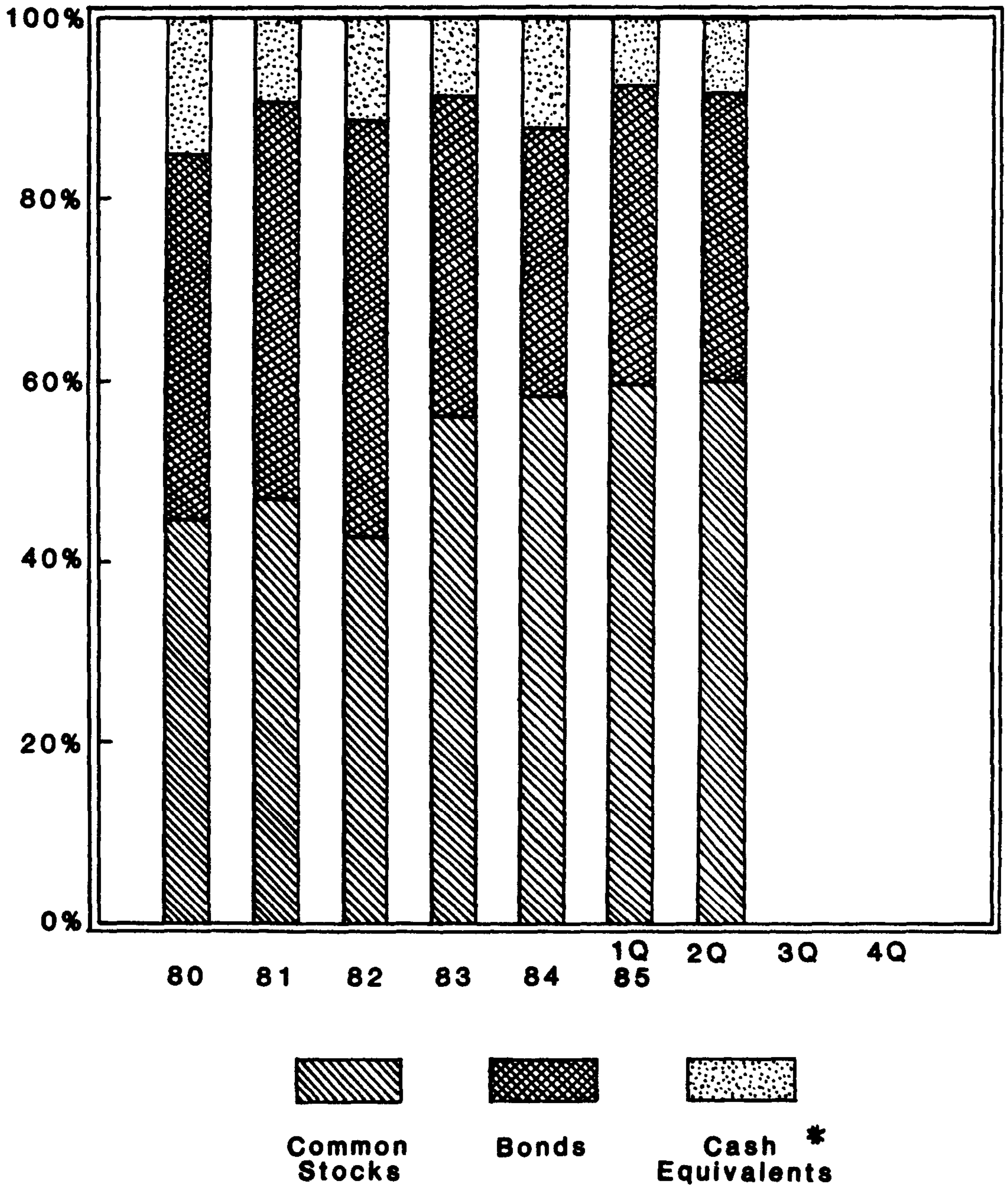
June 30, 1985

FIGURE 11

SUPPLEMENTAL RETIREMENT FUND
(Income Share Account)

ASSET MIX

PERCENT OF MARKET VALUE
(End Of Period Allocations)



* Includes cash held by the external manager

TABLE 12

SUPPLEMENTAL RETIREMENT FUND
(Income Share Account)
ASSET MIX

PERCENT OF MARKET VALUE
(End Of Period Allocations)

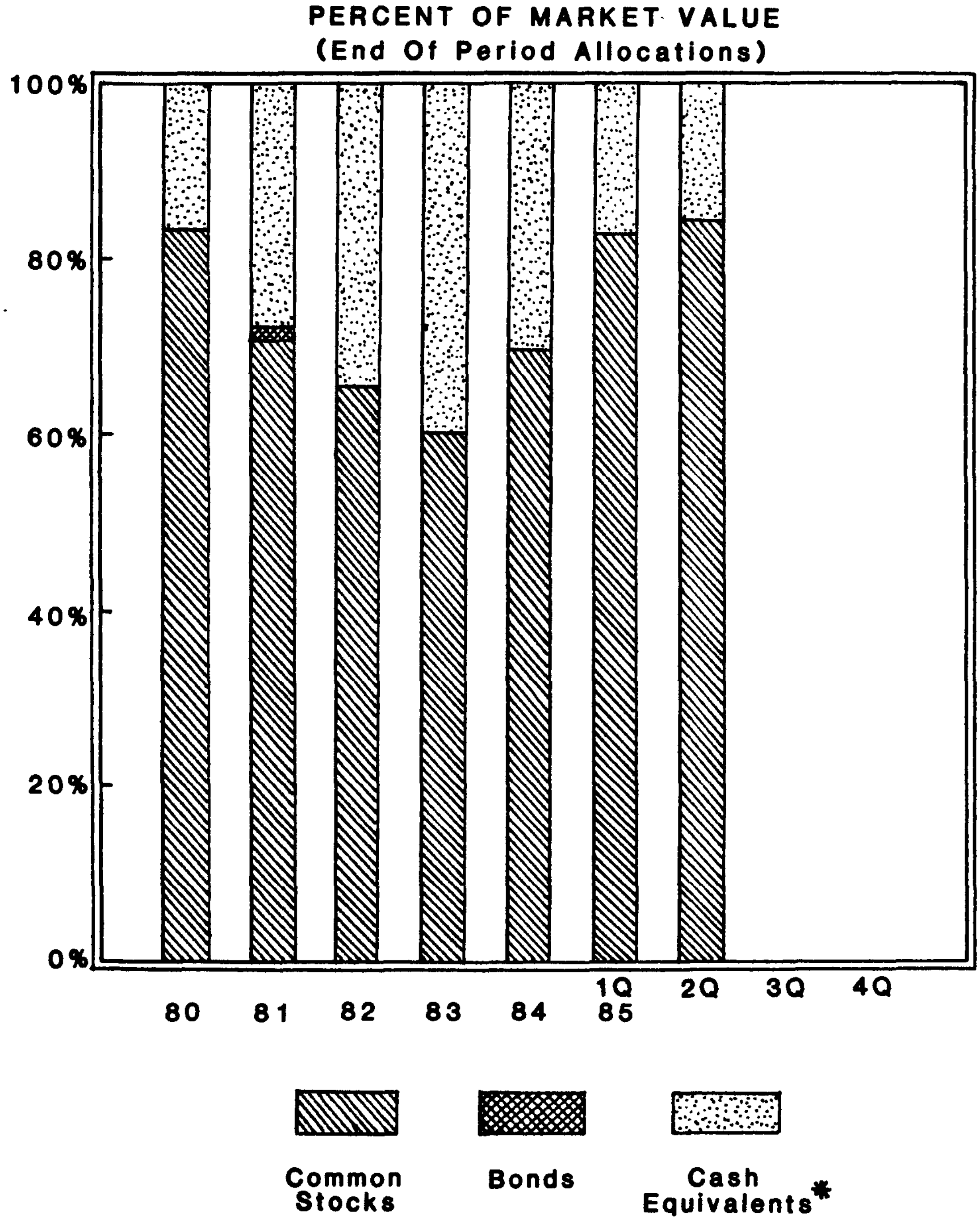
Calendar Year		Common Stocks		Bonds		Cash*	
		$Million	Percent	$Million	Percent	$Million	Percent
1980		33.5	44.5	30.5	40.4	11.3	15.1
1981		35.9	47.1	33.4	43.8	7.0	9.1
1982		42.7	42.5	46.2	46.0	11.5	11.5
1983		63.5	56.2	39.6	35.0	9.9	8.8
1984		74.4	58.0	37.6	29.3	16.4	12.7
1985	1Q	81.9	60.0	44.1	32.3	10.5	7.7
	2Q	87.6	60.7	44.2	30.6	12.6	8.7

*Includes cash held by the external manager

FIGURE 12

SUPPLEMENTAL RETIREMENT FUND
(Growth Share Account)

ASSET MIX



* Includes cash held by external manager

TABLE 13

SUPPLEMENTAL RETIREMENT FUND

(Growth Share Account)

ASSET MIX

PERCENT OF MARKET VALUE
(End Of Period Allocations)

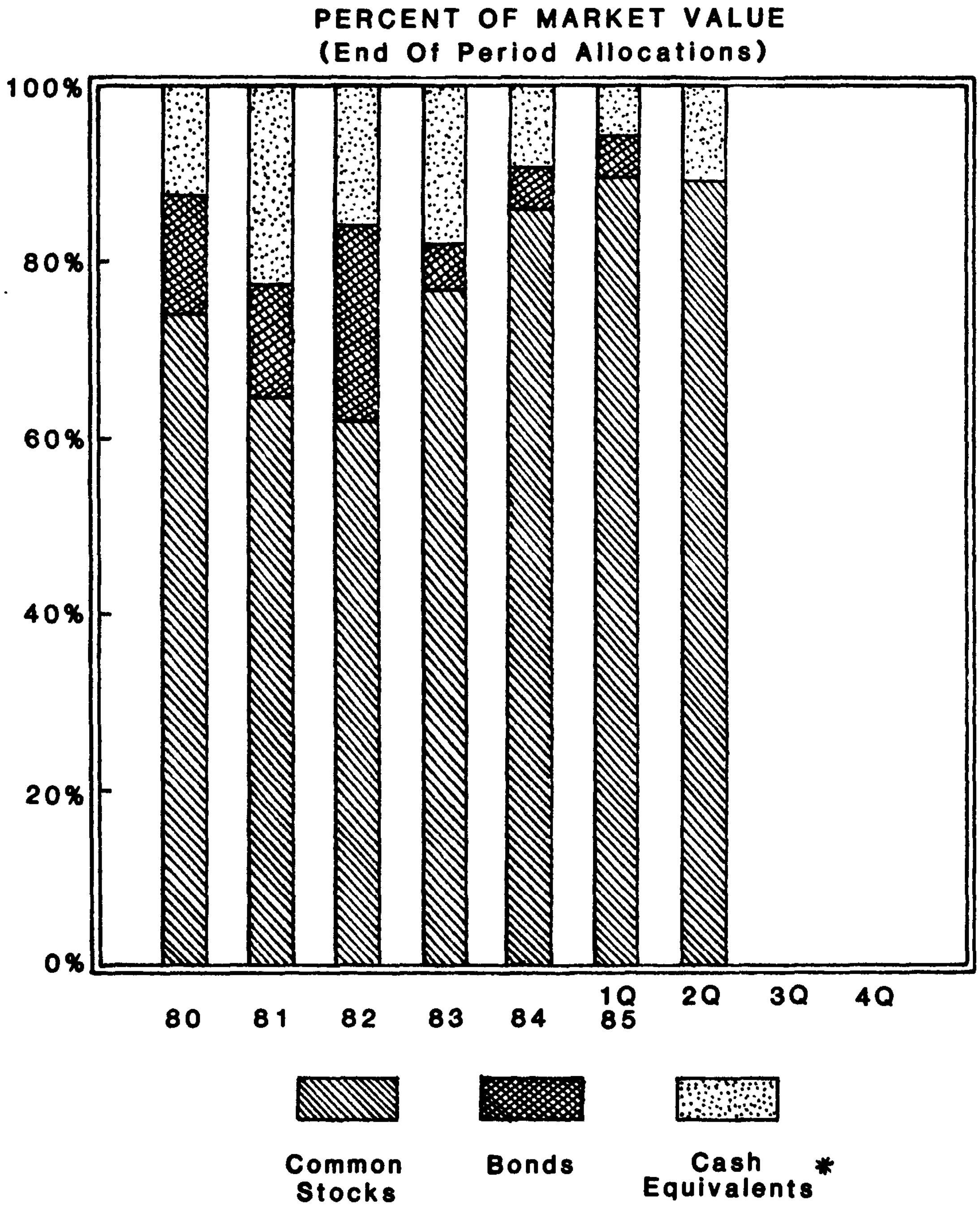
Calendar Year		Common Stocks $Million	Common Stocks Percent	Bonds $Million	Bonds Percent	Cash* $Million	Cash* Percent
1980		29.8	83.0	----	----	6.1	17.0
1981		28.8	71.3	0.5	1.2	11.1	27.5
1982		32.5	65.6	----	----	17.0	34.4
1983		33.7	60.3	----	----	22.2	39.7
1984		41.8	70.0	----	----	17.9	30.0
1985	1Q	52.2	82.0	----	----	11.5	18.0
	2Q	56.3	83.8	0.2	0.3	10.6	15.9

*Includes cash held by the external manager

FIGURE 13

MINNESOTA VARIABLE ANNUITY FUND

ASSET MIX



* Includes cash held by external managers

TABLE 14

MINNESOTA VARIABLE ANNUITY FUND

ASSET MIX

PERCENT OF MARKET VALUE
(End Of Period Allocations)

Calendar Year		Common Stocks $Million	Common Stocks Percent	Bonds $Million	Bonds Percent	Cash* $Million	Cash* Percent
1980		55.2	74.1	9.8	13.2	9.4	12.7
1981		49.6	64.8	9.7	12.7	17.2	22.5
1982		56.7	62.0	19.8	21.6	15.0	16.4
1983		78.9	77.0	5.0	4.8	18.7	18.2
1984		89.4	86.3	5.1	4.9	9.1	8.8
1985	1Q	102.1	90.6	5.2	4.6	5.5	4.8
	2Q	106.5	88.9	---	---	13.3	11.1

*Includes cash held by external managers

TABLE 15

MINNESOTA STATE BOARD OF INVESTMENT
RETIREMENT FUNDS

INVESTMENT RETURNS RELATIVE TO PERFORMANCE STANDARDS

YEAR ENDING JUNE 30, 1985

	Total Fund Return	Stock/Bond Composite**	Common Stocks	Wilshire 5000	Bonds	ML Bond Index
SUPPLEMENTAL RETIREMENT FUNDS						
Income Share Account*	28.8%	30.4%	30.4%	31.2%	32.1%	29.0%
Growth Share Account*	22.9	31.2	28.1	31.2	---	29.0
VARIABLE ANNUITY FUND*	27.5	31.2	30.3	31.2	---	29.0

* Includes performance of both internal and external managers.

** Wilshire 5000/Merrill Lynch Master Bond indices:

Income Account - 50% stock/50% bond
Growth Account - 100% stock/ 0% bond
Variable Fund - 100% stock/ 0% bond

TABLE 16

EQUITY MANAGER PERFORMANCE

TOTAL PORTFOLIO RETURNS

JUNE 30, 1985

	Second Quarter 1985	Year Ending 6/30/85	Two Years Ending 6/30/85 (Annualized)	Since Inception 3/1/83 (Annualized)
Income Share Account				
BMI Capital	-0.9%	14.4%	-7.0%	- 1.0%
Internal Manager	6.0	32.4	9.9	13.7
Growth Share Account				
Waddell & Reed	7.0	15.8	1.4	11.0
Internal Manager	5.9	32.5	7.4	12.1
Variable Annuity Fund				
Norwest Bank	9.1	20.6	0.3	8.9
Lieber & Company	6.0	30.9	9.1	13.2
Internal Manager	5.8	31.6	6.7	11.9
Performance Standards				
Wilshire 5000	7.5	31.2	9.5	15.7
TUCS Aggressive Manager	7.3	25.8	3.9	NA
Inflation	1.1	3.7	4.0	4.1

MINNESOTA STATE BOARD OF INVESTMENT

QUARTERLY INVESTMENT REVIEW

PERMANENT SCHOOL FUND

June 30, 1985

MINNESOTA STATE BOARD OF INVESTMENT

PERMANENT SCHOOL FUND

SECOND QUARTER 1985

Summary

ASSETS

The market value of the Permanent School Fund's assets rose 8.4% in the second quarter. This increase was due almost entirely to the strong performance of the capital markets. New contributions to the Fund were negligible during the quarter. For three primary reasons, long-run growth in the Fund's assets is very slow. First, the Fund must pay out all of its income to offset state school aid payments. Income is not reinvested. Second, to maximize current income the Fund is invested largely in bonds, which have limited capital gains potential. Finally, new contributions come only from land sales, royalties and leases, all of which are relatively insignificant. End-of-period market values of the Permanent School Fund are presented below.

Calendar Year		Market Value (Millions)	Percent Change From Previous Period
1980		245	+ 1.7
1981		236	- 3.7
1982		286	+ 21.2
1983		290	+ 1.4
1984		308	+ 6.2
1985	1Q	311	+ 1.0
	2Q	337	+ 8.4

ASSET MIX

At its June 1985 meeting, the State Board of Investment authorized significant changes in the Permanent School Fund's long-run asset mix. In a position paper to the Board, staff explained that the Fund's restrictive accounting provisions, combined with its goal of financing state school aid payments, made short-term income maximization the Fund's most logical investment policy. While staff believed that other policies might be more productive over the long-run, these policies would require that changes in the Fund's accounting provisions be implemented. Without such changes, staff and the IAC recommended, and the Investment Board approved, a shift in the Fund's asset mix completely to fixed income securities.

During the second quarter the Permanent School Fund's asset mix shifted modestly. Toward the end of the quarter the liquidation of the Fund's common stock holdings began. In addition, several bonds in the Fund's fixed income portfolio matured and the proceeds were not immediately reinvested. The result of these actions was that the cash equivalents segment of the Fund rose, while the common stock and bond segment weightings declined.

Over the next quarter the common stock holdings will be entirely eliminated and the proceeds reinvested in the bond portfolio as will a portion of the Fund's cash equivalents.

The percentage of the fund (at market) invested in stocks, bonds and cash equivalents over the last two quarters is shown below.

ASSET MIX

	3/31/85	6/30/85
Common Stocks	18.5%	17.3%
Bonds	75.9	71.4
Cash Equivalents	5.6	11.3
	100.0%	100.0%

BOND PORTFOLIO

The Permanent School Fund's bond portfolio, at the end of the second quarter, was invested primarily in high quality, long maturity issues selling at a slight discount to par value. Future shifts in the bond portfolio's composition will depend upon decisions regarding possible changes in the Fund's restrictive accounting provisions.

TABLE 17

PERMANENT SCHOOL FUND

BOND PORTFOLIO STATISTICS

June 30, 1985

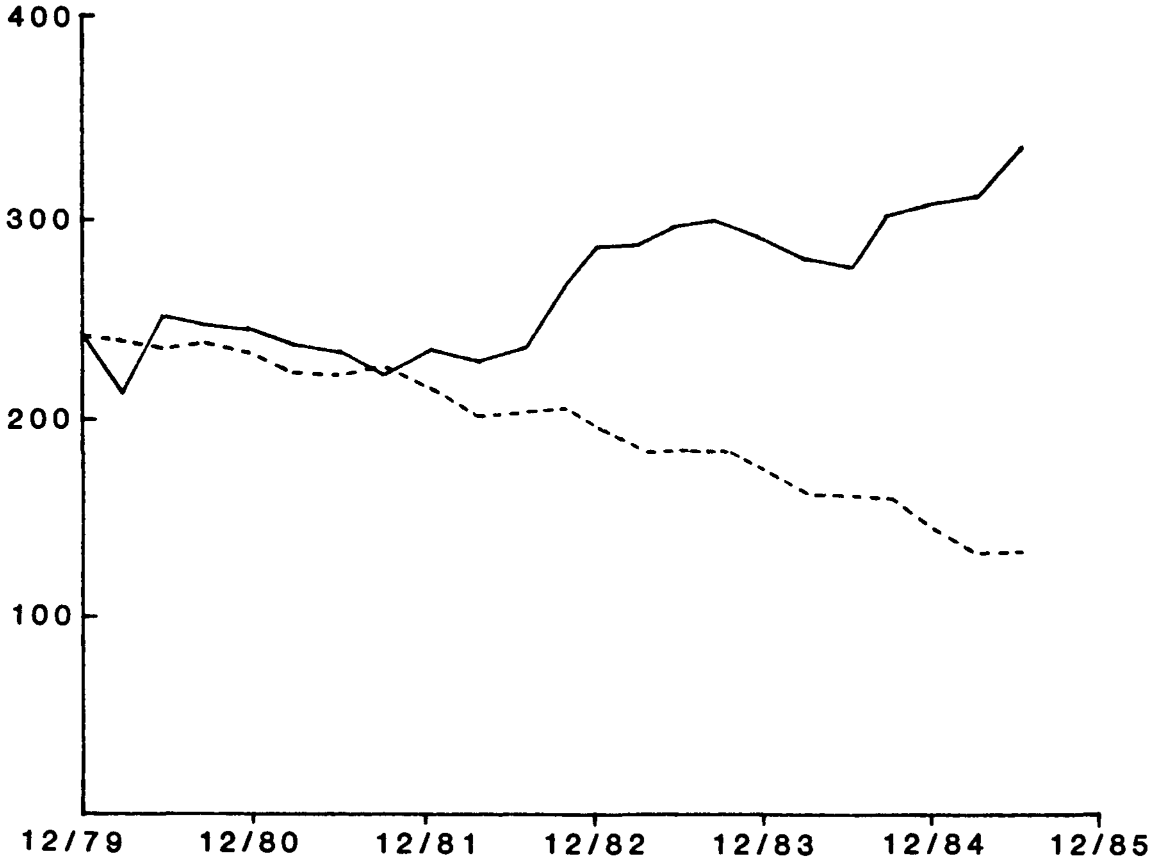
Value at Market	$236,415,406
Value at Par	$249,980,106
Average Coupon	10.30%
Current Yield	10.63%
Yield to Maturity	10.74%
Time to Maturity	12.36 Years
Average Duration	5.75 Years
Average Quality Rating	AAA
Number of Issues	116

Treasury	13.0%
Federal Agency	22.1
Industrial	5.0
Utilities	7.3
Finance	4.1
Transportation	7.7
Mortgages	39.3
Miscellaneous	1.5
	100.0%

FIGURE 14

PERMANENT SCHOOL FUND

ASSET GROWTH



BEGINNING VALUE PLUS NET CONTRIBUTIONS ---
TOTAL PORTFOLIO MARKET VALUE —

YEAR ENDING

	12/80	12/81	12/82	12/83	12/84	6/85
BEGINNING VALUE	241.3	244.8	236.3	286.2	290.2	308.1
NET CONTRIBUTIONS	-11.2	-15.7	-20.4	-20.6	-25.9	-9.5
INVESTMENT RETURNS	14.7	7.2	70.3	24.6	43.8	38.7
ENDING VALUE (MILLIONS OF DOLLARS)	244.8	236.3	286.2	290.2	308.1	337.3

FIGURE 15

PERMANENT SCHOOL FUND

ASSET MIX

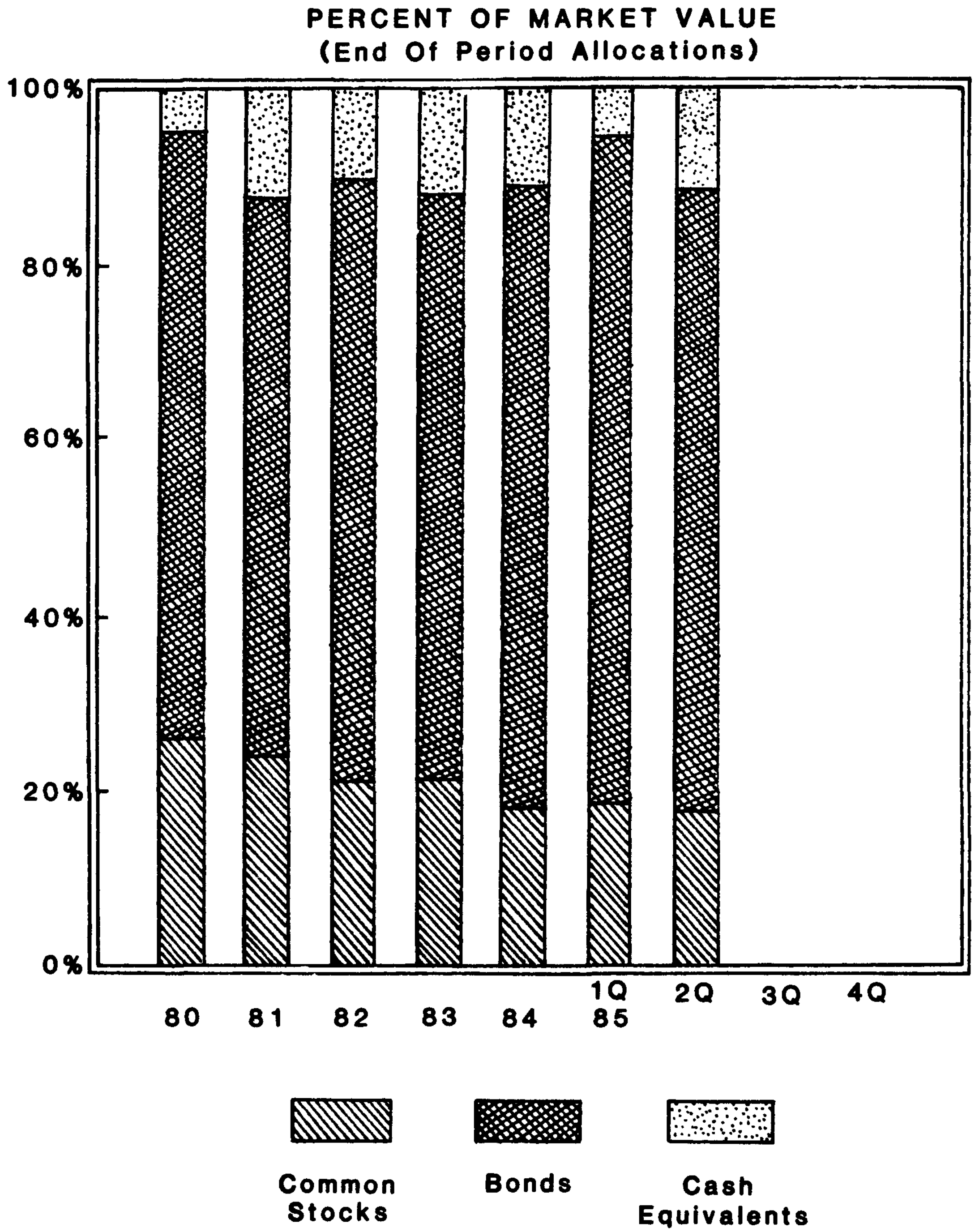


TABLE 18

PERMANENT SCHOOL FUND

ASSET MIX

PERCENT OF MARKET VALUE
(End Of Period Allocations)

Calendar Year		Common Stocks $Million	Common Stocks Percent	Bonds $Million	Bonds Percent	Cash $Million	Cash Percent
1980		63.9	26.1	169.3	69.2	11.6	4.7
1981		56.0	23.7	151.9	64.2	28.5	12.1
1982		59.1	20.7	197.6	69.0	29.5	10.3
1983		60.8	21.0	195.0	67.1	34.4	11.9
1984		54.9	17.8	219.4	71.2	33.8	11.0
1985	1Q	57.6	18.5	235.6	75.9	17.5	5.6
	2Q	58.4	17.3	241.0	71.4	37.9	11.3

APPENDIX

This appendix contains historical portfolio data pertaining to the SBI's external equity managers from the inception of the SBI's accounts with these managers. Any revisions of portfolio data reported in previous quarterly reviews are contained in this appendix.

EQUITY MANAGER PORTFOLIO STATISTICS GLOSSARY

In the following pages, summary descriptions of the individual equity managers' investment philosophy, risk characteristics, and performance data are displayed. Some of the statistics presented are technical in nature. This glossary is designed to aid in understanding the terms that are introduced.

Qtr. Port. Turnover - the manager's total equity asset sales during the quarter divided by the average value of the manager's equity assets over the quarter.

# of Stocks - number of different issues held in the manager's stock portfolio.

Equity Allocation - percent of the manager's total portfolio invested in common and preferred stocks and convertible securities.

Yield - indicated annual dividend of the manager's stock portfolio divided by the market value of the manager's stock portfolio.

P/E - weighted average price per share of the managers' common stock portfolio divided by the weighted average trailing four quarter earnings per share of the manager's common stock portfolio.

Market Volatility - degree to which the returns on the manager's stock portfolio are sensitive to movements in the stock market's return. By definition the market has a market volatility measure (referred to as beta) of 1.0. Portfolios with values greater (less) than 1.0 have above (below) average sensitivity to market moves. The SBI's managers are required, over the long-term to hold portfolios with market volatility levels above 1.10. This measure does not include the impact of cash holdings on total portfolio volatility.

Diversification - extent to which a manager's equity holdings statistically resemble the stock market. Low (high) diversification portfolios will experience returns which are not well (are well) correlated with those of the market. By definition, the market has a diversification measure of 1.0. The less a portfolio is diversified, the lower will be its diversification measure (referred to as

R-squared). The SBI's managers are required, over the long-term, to hold portfolios with diversification levels less than .85.

Portfolio Risk Orientation - the riskiness of a portfolio can be expressed in terms of its market volatility and diversification. A complementary approach is to break down a portfolio's risk into sensitivity to various fundamental factors. These factors, six of which are used in this analysis, are related to various balance sheet, income statement and securities data on the stocks which make up a manager's portfolio. The sensitivity of a manager's portfolio to these factors is rated relative to the the stock market's sensitivity. Thus, the term ++ (--) indicates that a portfolio has a relatively very high (low) exposure to the factor. A + (-) indicates an above (below) average exposure. A 0 indicates no exposure.

Price Variability - risk related to the historical variability of the prices of stocks in the portfolio. The more variable are the portfolio's securities' prices, the more risky is the portfolio. Items such as current stock price, twelve month price range, trading volume, and beta make up this measure.

Earnings Variability - risk related to the variability of the earnings of those companies owned in the manager's portfolio. The more variable are the companies' earnings, the more risky is the portfolio. Items such as variance of accounting earnings, variance of cash flow, occurrence of extraordinary accounting items, and the correlation of companies' earnings with U.S. corporate earnings make up this measure.

Earnings Success - risk related to the extent to which the earnings of companies owned by the portfolio have been recently low or negative. The poorer have been companies' earnings, the riskier is the portfolio. Items including return on equity, earnings growth, book/price ratio, dividend cuts, and tax rate make up this measure.

Size - risk related to the size and maturity of the companies held in the portfolio. The smaller and younger the companies, the more risky is the portfolio. Items such as total assets, market capitalization, gross plant/book value ratio, and company age make up this measure.

Growth	- risk related to the growth orientation of companies owned by the manager. The more growth-oriented are the companies, the riskier is the portfolio. Items such as dividend yield, E/P ratio, and growth in total assets make up this measure.
Financial Leverage	- risk related to the extent to which companies held in the portfolio have used debt to finance their operations. The more leveraged are the companies, the riskier is the portfolio. Items such as debt/asset ratio, current asset/current liability ratio, and uncovered fixed charges make up this ratio.
Industry Sector Overweightings	- those sectors of the economy in which the manager has invested a significantly larger percentage of the portfolio than is represented by the stock market.
Industry Sector Underweightings	- those sectors of the economy in which the manager has invested a significantly smaller percentage of the portfolio than is represented by the stock market.
TUCS Aggressive Manager Median	- the median fund within a subsample of the TUCS universe restricted to aggressive equity managers. The TUCS universe is a universe of over 4000 portfolios custodied by over 30 major banks. For purposes of the SBI's analysis out of the universe have been selected a subsample which includes only those equity managers with risk characteristics (market volatility and diversification) similar to those of the SBI's managers. This provides a group of funds against which valid performance comparisons can be made. An assumed .50% management fee has been included to facilitate performance comparisons.

TABLE A-1

EXTERNAL EQUITY MANAGERS

PORTFOLIO STATISTICS HISTORICAL SUMMARY

MANAGER NAME	DATE	QTR. PORT. T/O	# OF STKS	EQUITY ALLOC.	YIELD	P/E	MKT VOLTY	DIVRSFN	Earn. Var.	PORTFOLIO RISK ORIENTATION Earn. Succ.	Size	Growth	Fin. Lever.
AVG. EXT. MANAGERS	6/30/85	24	43	90	2.54	16.0	1.23	0.83	+	-	0	+	0
AVG. EXT. MANAGERS	3/31/85	33	43	90	2.72	14.4	1.23	0.82	+	-	0	0	0
AVG. EXT. MANAGERS	12/31/84	24	42	86	3.02	13.1	1.25	0.81	+	0	0	+	0
AVG. EXT. MANAGERS	9/30/84	33	42	84	3.00	13.4	1.26	0.82	+	-	0	+	0
AVG. EXT. MANAGERS	6/30/84	27	41	81	3.21	13.5	1.29	0.81	+	+	+	+	0
AVG. EXT. MANAGERS	3/31/84	25	41	83	3.05	13.5	1.25	0.82	+	0	+	+	0
AVG. EXT. MANAGERS	12/31/83	36	34	84	2.79	16.2	1.23	0.80	+	0	+	0	0
AVG. EXT. MANAGERS	9/30/83	32	32	85	2.48	19.4	1.29	0.82	+	0	+	+	0
AVG. EXT. MANAGERS	6/30/83	27	32	85	2.44	16.7	1.29	0.81	0	-	0	+	+
AVG. EXT. MANAGERS	3/31/83	NA	26	67	2.78	15.0	1.26	0.83	+	-	0	+	0
FRED ALGER	6/30/85	41	41	92	1.94	18.5	1.23	0.79	++	--	0	++	0
FRED ALGER	3/31/85	36	39	96	1.77	16.4	1.27	0.85	++	-	-	++	+
FRED ALGER	12/31/84	16	36	95	2.63	12.8	1.19	0.86	+	-	--	+	0
FRED ALGER	9/30/84	20	33	94	2.57	13.8	1.22	0.86	++	--	0	0	-
FRED ALGER	6/30/84	16	32	93	2.92	13.1	1.22	0.86	+	0	0	-	0
FRED ALGER	3/31/84	19	33	91	2.82	14.8	1.19	0.86	+	+	0	0	0
FRED ALGER	12/31/83	23	32	95	2.64	15.9	1.18	0.88	++	-	0	0	0
FRED ALGER	9/30/83	27	32	91	2.63	17.5	1.24	0.88	++	0	0	0	0
FRED ALGER	6/30/83	8	35	94	2.10	18.7	1.33	0.88	++	--	+	+	++
FRED ALGER	3/31/83	NA	35	89	2.31	17.1	1.29	0.87	++	--	+	+	+
ALLIANCE CAPITAL	6/30/85	7	34	95	1.92	17.9	1.21	0.76	+	--	+	++	0
ALLIANCE CAPITAL	3/31/85	10	35	96	2.03	16.1	1.19	0.76	0	--	+	++	--
ALLIANCE CAPITAL	12/31/84	8	34	92	2.26	14.0	1.30	0.73	+	--	+	++	--
ALLIANCE CAPITAL	9/30/84	13	31	88	2.30	14.9	1.34	0.72	++	--	0	+	--
ALLIANCE CAPITAL	6/30/84	8	32	92	1.84	15.4	1.39	0.73	+	++	+	++	--
ALLIANCE CAPITAL	3/31/84	12	32	92	1.75	15.4	1.38	0.72	+	0	+	++	--
ALLIANCE CAPITAL	12/31/83	14	33	92	1.47	19.7	1.37	0.72	++	-	0	++	-
ALLIANCE CAPITAL	9/30/83	22	27	87	1.55	20.4	1.41	0.75	++	-	+	+	-
ALLIANCE CAPITAL	6/30/83	17	30	91	1.72	20.9	1.35	0.77	++	--	0	+	0
ALLIANCE CAPITAL	3/31/83	NA	30	84	1.68	20.3	1.40	0.81	++	--	+	++	-
BEUTEL GOODMAN	6/30/85	6	20	94	3.32	17.3	1.24	0.83	++	+	++	+	++
BEUTEL GOODMAN	3/31/85	14	20	93	3.74	13.0	1.18	0.83	0	++	++	0	++
BEUTEL GOODMAN	12/31/84	8	19	94	4.26	12.3	1.19	0.81	0	++	++	0	++
BEUTEL GOODMAN	9/30/84	10	18	93	4.15	9.3	1.21	0.81	+	+	++	0	++
BEUTEL GOODMAN	6/30/84	11	18	92	4.14	14.9	1.18	0.79	+	0	++	0	++
BEUTEL GOODMAN	3/31/84	12	20	98	3.84	11.0	1.16	0.79	+	+	++	0	++
BEUTEL GOODMAN	12/31/83	15	16	95	3.77	10.3	1.08	0.74	+	++	++	0	++
BEUTEL GOODMAN	9/30/83	6	16	99	3.47	10.5	1.14	0.75	+	++	++	0	++
BEUTEL GOODMAN	6/30/83	7	12	79	3.29	10.2	1.07	0.75	0	-	++	0	++
BEUTEL GOODMAN	3/31/83	NA	6	34	2.98	9.3	1.09	0.71	0	++	+	+	++

MANAGER NAME	DATE	QTR. PORT. T/O	# OF STKS	EQUITY ALLOC.	YIELD	P/E	MKT VOLTY	DIVRSFN	Earn. Var.	PORTFOLIO RISK ORIENTATION Earn. Succ.	Size	Growth	Fin. Lever.
BMI CAPITAL	6/30/85	10	23	98	1.92	18.0	1.22	0.75	++	0	++	++	--
BMI CAPITAL	3/31/85	2	25	99	1.87	18.4	1.26	0.55	++	--	++	++	--
BMI CAPITAL	12/31/84	13	21	87	2.19	17.6	1.33	0.74	++	--	++	++	--
BMI CAPITAL	9/30/84	29	20	82	2.65	15.2	1.33	0.75	++	--	++	+	--
BMI CAPITAL	6/30/84	6	24	99	2.73	18.5	1.33	0.79	++	-	++	+	--
BMI CAPITAL	3/31/84	18	24	95	2.67	17.1	1.32	0.80	++	0	++	+	--
BMI CAPITAL	12/31/83	14	21	98	2.23	20.4	1.29	0.81	++	-	++	+	0
BMI CAPITAL	9/30/83	19	19	99	2.14	19.2	1.34	0.81	++	-	++	+	0
BMI CAPITAL	6/30/83	0	20	96	2.26	16.6	1.31	0.80	0	--	++	+	0
BMI CAPITAL	3/31/83	NA	13	53	2.35	13.7	1.36	0.80	++	--	++	++	++
FORSTMANN-LEFF	6/30/85	27	33	77	2.51	15.6	1.22	0.89	+	0	--	+	+
FORSTMANN-LEFF	3/31/85	55	27	69	3.06	11.8	1.19	0.89	+	0	-	0	0
FORSTMANN-LEFF	12/31/84	12	31	87	3.58	10.9	1.22	0.84	0	++	-	0	++
FORSTMANN-LEFF	9/30/84	40	31	83	3.53	10.8	1.26	0.86	0	+	-	0	+
FORSTMANN-LEFF	6/30/84	31	31	54	3.64	11.4	1.26	0.81	+	++	-	0	++
FORSTMANN-LEFF	3/31/84	34	38	71	3.52	12.4	1.17	0.82	+	+	-	0	++
FORSTMANN-LEFF	12/31/83	41	39	81	3.23	15.7	1.10	0.70	0	++	--	--	--
FORSTMANN-LEFF	9/30/83	46	28	83	2.59	20.7	1.14	0.72	0	++	--	0	--
FORSTMANN-LEFF	6/30/83	52	33	93	2.90	15.0	1.08	0.70	--	0	--	--	--
FORSTMANN-LEFF	3/31/83	NA	38	85	3.23	14.8	1.09	0.82	0	0	-	0	--
HELLMAN JORDAN	6/30/85	38	38	89	3.78	14.1	1.10	0.89	0	+	--	0	++
HELLMAN JORDAN	3/31/85	52	35	81	3.73	14.2	1.13	0.88	+	++	--	-	++
HELLMAN JORDAN	12/31/84	36	42	82	3.94	13.4	1.21	0.86	++	++	--	0	++
HELLMAN JORDAN	9/30/84	10	44	80	4.01	13.7	1.22	0.84	++	+	--	0	++
HELLMAN JORDAN	6/30/84	34	37	61	5.09	13.5	1.25	0.87	++	++	-	0	++
HELLMAN JORDAN	3/31/84	30	34	58	4.94	12.9	1.16	0.87	++	+	--	0	+
HELLMAN JORDAN	12/31/83	43	23	51	5.31	12.5	1.23	0.74	++	++	-	--	++
HELLMAN JORDAN	9/30/83	57	20	47	2.89	21.2	1.34	0.77	++	++	0	0	++
HELLMAN JORDAN	6/30/83	38	18	56	2.37	16.1	1.30	0.77	++	-	--	0	++
HELLMAN JORDAN	3/31/83	NA	14	53	3.18	15.9	1.30	0.72	++	--	--	+	+
IDS ADVISORY	6/30/85	13	50	98	3.49	16.3	1.11	0.87	+	--	-	+	0
IDS ADVISORY	3/31/85	39	42	87	4.05	14.1	1.08	0.85	0	-	--	-	+
IDS ADVISORY	12/31/84	21	44	89	4.69	11.7	1.05	0.83	0	0	--	0	0
IDS ADVISORY	9/30/84	40	44	92	4.60	12.5	1.08	0.89	0	0	--	0	0
IDS ADVISORY	6/30/84	42	43	87	4.80	13.4	1.04	0.85	-	--	0	0	++
IDS ADVISORY	3/31/84	41	39	82	4.31	11.2	1.09	0.80	+	--	-	--	0
IDS ADVISORY	12/31/83	45	36	89	3.13	18.8	1.17	0.86	++	-	+	+	0
IDS ADVISORY	9/30/83	79	34	86	2.40	25.0	1.24	0.86	++	0	+	+	-
IDS ADVISORY	6/30/83	42	49	94	2.19	19.9	1.30	0.81	+	--	-	+	-
IDS ADVISORY	3/31/83	NA	48	88	3.17	15.3	1.19	0.84	+	-	--	+	-
INVESTMENT ADVISERS	6/30/85	10	37	90	2.88	11.8	1.17	0.90	+	0	--	+	0
INVESTMENT ADVISERS	3/31/85	28	37	89	3.25	10.9	1.17	0.91	+	0	-	-	0
INVESTMENT ADVISERS	12/31/84	9	42	97	3.76	9.8	1.19	0.88	+	++	--	0	0
INVESTMENT ADVISERS	9/30/84	21	39	88	3.74	9.9	1.21	0.86	+	+	--	0	0
INVESTMENT ADVISERS	6/30/84	8	43	98	4.19	10.0	1.21	0.89	0	++	-	0	++
INVESTMENT ADVISERS	3/31/84	21	40	92	3.60	11.1	1.17	0.89	+	++	-	0	++
INVESTMENT ADVISERS	12/31/83	16	39	89	3.11	13.5	1.13	0.86	+	++	--	0	0
INVESTMENT ADVISERS	9/30/83	8	41	89	2.92	15.6	1.13	0.87	+	++	--	0	0
INVESTMENT ADVISERS	6/30/83	7	37	78	3.19	15.9	1.08	0.89	0	0	--	0	0
INVESTMENT ADVISERS	3/31/83	NA	34	47	3.35	13.4	1.06	0.85	0	-	--	-	0

MANAGER NAME	DATE	QTR. PORT. T/O	# OF STKS	EQUITY ALLOC.	YIELD	P/E	MKT VOLTY	DIVRSFN	Earn. Var.	PORTFOLIO RISK ORIENTATION Earn. Succ.	Size	Growth	Fin. Lever.
LIEBER & COMPANY	6/30/85	14	107	96	2.45	12.9	1.27	0.80	0	--	++	++	--
LIEBER & COMPANY	3/31/85	19	107	99	2.49	12.6	1.24	0.81	0	--	++	0	--
LIEBER & COMPANY	12/31/84	14	103	85	2.53	12.3	1.34	0.79	+	-	++	++	--
LIEBER & COMPANY	9/30/84	17	108	87	2.55	11.9	1.31	0.80	+	0	++	+	--
LIEBER & COMPANY	6/30/84	10	117	95	2.66	12.0	1.33	0.81	0	0	++	++	--
LIEBER & COMPANY	3/31/84	0	115	93	2.63	12.0	1.37	0.85	0	--	++	+	-
LIEBER & COMPANY	12/31/83	9	60	100	2.77	12.9	1.24	0.83	0	-	++	+	-
LIEBER & COMPANY	9/30/83	9	56	97	2.83	11.3	1.30	0.83	0	-	++	+	-
LIEBER & COMPANY	6/30/83	2	49	92	2.70	14.0	1.26	0.84	0	--	++	+	-
LIEBER & COMPANY	3/31/83	NA	24	45	2.94	15.9	1.20	0.85	0	-	++	+	--
LOOMIS SAYLES	6/30/85	46	22	99	2.05	21.7	1.37	0.75	+	--	+	+	-
LOOMIS SAYLES	3/31/85	69	18	98	2.29	18.6	1.33	0.76	++	--	+	++	-
LOOMIS SAYLES	12/31/84	38	14	84	2.32	15.5	1.26	0.72	+	--	--	++	-
LOOMIS SAYLES	9/30/84	46	16	88	1.57	17.2	1.35	0.78	++	--	-	+	-
LOOMIS SAYLES	6/30/84	25	20	94	1.71	14.4	1.37	0.70	++	-	+	++	0
LOOMIS SAYLES	3/31/84	6	22	93	1.93	13.2	1.37	0.66	++	--	+	+	+
LOOMIS SAYLES	12/31/83	39	19	81	1.79	18.0	1.38	0.70	++	--	+	+	0
LOOMIS SAYLES	9/30/83	60	23	95	1.28	28.8	1.53	0.75	++	--	+	++	0
LOOMIS SAYLES	6/30/83	49	19	97	1.21	17.3	1.64	0.75	++	--	+	++	++
LOOMIS SAYLES	3/31/83	NA	20	98	1.62	18.2	1.44	0.85	++	--	0	++	-
NORWEST BANK MPLS	6/30/85	58	43	75	0.84	22.8	1.48	0.78	++	--	++	++	--
NORWEST BANK MPLS	3/31/85	49	59	89	0.95	20.2	1.41	0.79	++	--	++	++	--
NORWEST BANK MPLS	12/31/84	37	61	87	1.24	20.1	1.37	0.81	++	--	++	++	--
NORWEST BANK MPLS	9/30/84	61	62	97	1.18	26.6	1.36	0.81	++	--	++	+	-
NORWEST BANK MPLS	6/30/84	26	56	89	1.96	17.4	1.39	0.83	++	++	++	++	-
NORWEST BANK MPLS	3/31/84	66	47	87	1.65	19.2	1.28	0.82	++	--	++	++	-
NORWEST BANK MPLS	12/31/83	92	41	83	1.88	19.0	1.23	0.87	0	-	+	+	--
NORWEST BANK MPLS	9/30/83	56	53	85	2.12	21.4	1.27	0.87	0	-	+	+	-
NORWEST BANK MPLS	6/30/83	95	42	80	2.53	16.3	1.23	0.88	--	-	+	+	--
NORWEST BANK MPLS	3/31/83	NA	35	83	2.94	14.1	1.20	0.90	--	-	+	+	--
SIEBEL CAPITAL	6/30/85	16	55	85	1.99	14.2	1.21	0.86	+	0	++	+	0
SIEBEL CAPITAL	3/31/85	38	52	76	2.46	12.8	1.19	0.87	0	-	++	0	0
SIEBEL CAPITAL	12/31/84	24	54	80	2.69	12.1	1.24	0.84	0	--	+	+	-
SIEBEL CAPITAL	9/30/84	48	50	74	2.73	12.8	1.24	0.86	0	--	+	+	-
SIEBEL CAPITAL	6/30/84	47	36	63	3.22	12.3	1.27	0.88	--	++	++	+	0
SIEBEL CAPITAL	3/31/84	28	42	78	3.07	11.5	1.25	0.88	0	+	+	+	0
SIEBEL CAPITAL	12/31/83	25	37	90	3.14	12.4	1.16	0.89	--	0	0	-	++
SIEBEL CAPITAL	9/30/83	26	35	83	3.28	12.6	1.15	0.88	0	++	0	0	0
SIEBEL CAPITAL	6/30/83	27	36	91	3.24	13.5	1.17	0.86	0	0	0	0	++
SIEBEL CAPITAL	3/31/83	NA	26	80	3.38	13.5	1.15	0.85	0	-	--	0	+
HERBERT R. SMITH	6/30/85	17	44	91	2.53	12.9	1.26	0.85	++	--	+	+	0
HERBERT R. SMITH	3/31/85	30	49	97	2.65	11.2	1.26	0.84	+	-	0	0	0
HERBERT R. SMITH	12/31/84	46	45	77	2.83	10.3	1.30	0.72	++	--	++	+	0
HERBERT R. SMITH	9/30/84	39	52	89	2.78	12.0	1.25	0.79	++	--	+	+	0
HERBERT R. SMITH	6/30/84	38	67	86	3.29	12.5	1.20	0.92	+	-	+	+	--
HERBERT R. SMITH	3/31/84	29	68	84	3.12	13.9	1.22	0.91	+	0	+	+	0
HERBERT R. SMITH	12/31/83	46	60	80	2.14	18.9	1.33	0.85	++	-	++	+	++
HERBERT R. SMITH	9/30/83	40	46	65	2.68	19.4	1.44	0.87	++	-	++	+	++
HERBERT R. SMITH	6/30/83	13	48	65	2.36	18.2	1.46	0.83	++	--	++	++	++
HERBERT R. SMITH	3/31/83	NA	18	20	2.74	13.7	1.45	0.77	++	--	+	+	++

MANAGER NAME	DATE	QTR. PORT. T/O	# OF STKS	EQUITY ALLOC.	YIELD	P/E	MKT VOLTY	DIVRSFN	Earn. Var.	PORTFOLIO RISK ORIENTATION Earn. Succ.	Size	Growth	Fin. Lever.
TRUSTEE & INVESTORS	6/30/85	16	49	97	2.88	13.4	1.18	0.91	++	++	0	+	++
TRUSTEE & INVESTORS	3/31/85	10	43	97	2.82	13.5	1.22	0.93	++	++	0	0	++
TRUSTEE & INVESTORS	12/31/84	39	41	96	3.00	11.2	1.31	0.91	++	++	+	+	+
TRUSTEE & INVESTORS	9/30/84	24	37	94	3.52	8.3	1.28	0.91	0	++	--	+	0
TRUSTEE & INVESTORS	6/30/84	15	40	95	3.86	12.8	1.31	0.90	+	++	-	+	++
TRUSTEE & INVESTORS	3/31/84	25	41	98	3.30	14.4	1.27	0.89	+	++	0	+	++
TRUSTEE & INVESTORS	12/31/83	17	44	99	2.82	18.0	1.25	0.89	0	0	+	+	++
TRUSTEE & INVESTORS	9/30/83	9	40	98	3.04	19.8	1.26	0.92	0	++	+	+	++
TRUSTEE & INVESTORS	6/30/83	11	34	98	3.09	17.5	1.24	0.93	0	-	+	+	+
TRUSTEE & INVESTORS	3/31/83	NA	26	71	3.80	14.4	1.24	0.93	0	-	+	0	++
WADDELL & REED	6/30/85	34	53	74	3.66	12.6	1.19	0.79	++	--	+	-	++
WADDELL & REED	3/31/85	51	52	78	3.58	12.1	1.26	0.82	++	0	+	-	++
WADDELL & REED	12/31/84	39	46	52	3.34	11.8	1.29	0.75	++	--	+	+	++
WADDELL & REED	9/30/84	76	48	35	3.11	12.1	1.27	0.76	++	--	+	+	-
WADDELL & REED	6/30/84	81	13	21	2.08	10.9	1.56	0.52	++	++	++	+	+
WADDELL & REED	3/31/84	35	21	31	2.63	12.6	1.31	0.74	++	+	+	0	++
WADDELL & REED	12/31/83	103	10	31	2.45	17.2	1.36	0.72	+	--	++	++	--
WADDELL & REED	9/30/83	9	17	73	1.41	27.4	1.41	0.73	0	--	++	+	--
WADDELL & REED	6/30/83	38	16	75	1.51	21.0	1.48	0.74	0	--	++	++	+
WADDELL & REED	3/31/83	NA	17	79	2.04	14.9	1.50	0.81	+	-	++	+	++

TABLE A-2

EXTERNAL EQUITY MANAGERS

SECTOR WEIGHTING HISTORICAL PROFILE

MANAGER NAME	DATE	TOTAL PORTFOLIO MARKET VALUE	EQUITY SECTOR WEIGHTS CAP GDS	CONS DUR	CONS NDUR	ENER	FINL	MAT & SERV	TECH	TRAN	UTIL
AVG. EXT. MANAGERS	6/30/85	---	2.2	6.6	29.3	3.1	20.0	10.9	17.3	7.6	3.0
AVG. EXT. MANAGERS	3/31/85	---	2.4	6.8	26.4	3.6	17.5	11.4	22.2	6.8	3.0
AVG. EXT. MANAGERS	12/31/84	---	2.4	8.0	26.4	2.3	15.5	11.2	23.9	6.6	4.0
AVG. EXT. MANAGERS	9/30/84	---	2.9	7.9	27.9	3.8	14.1	9.6	26.3	4.8	2.7
AVG. EXT. MANAGERS	6/30/84	---	4.0	7.6	28.6	4.2	12.5	10.9	23.4	5.4	3.4
AVG. EXT. MANAGERS	3/31/84	---	5.2	7.6	24.0	5.7	13.2	13.3	22.7	5.1	3.1
AVG. EXT. MANAGERS	12/31/83	---	6.0	6.4	23.5	3.0	12.2	15.1	24.0	6.3	3.5
AVG. EXT. MANAGERS	9/30/83	---	3.6	5.9	28.9	3.1	12.8	13.5	24.2	5.7	2.4
AVG. EXT. MANAGERS	6/30/83	---	3.7	6.1	30.2	3.6	15.1	11.7	21.2	5.8	2.5
AVG. EXT. MANAGERS	3/31/83	---	2.8	4.3	30.6	3.6	15.2	11.4	23.5	4.9	3.8
FRED ALGER	6/30/85	63,144,042	---	17.6	36.0	1.4	9.3	3.5	15.7	16.6	---
FRED ALGER	3/31/85	57,886,615	5.2	14.3	28.8	3.7	7.8	1.8	24.8	13.6	---
FRED ALGER	12/31/84	54,018,782	5.2	16.1	36.1	---	4.1	7.9	25.2	5.4	---
FRED ALGER	9/30/84	53,908,974	9.3	15.4	33.7	---	0.8	11.4	23.5	6.0	---
FRED ALGER	6/30/84	49,936,760	14.0	8.0	30.7	---	3.8	11.5	29.5	2.6	---
FRED ALGER	3/31/84	51,737,228	13.3	4.3	28.8	---	3.4	18.3	31.9	---	---
FRED ALGER	12/31/83	55,644,200	13.2	6.6	21.7	---	6.4	18.1	33.9	---	---
FRED ALGER	9/30/83	56,169,879	5.7	6.8	26.9	---	8.4	23.3	29.0	---	---
FRED ALGER	6/30/83	58,138,999	4.9	8.5	35.0	3.5	8.2	18.0	21.9	---	---
FRED ALGER	3/31/83	51,420,548	1.4	7.5	37.0	---	9.0	22.0	23.1	---	---
ALLIANCE CAPITAL	6/30/85	65,072,829	---	8.7	49.9	2.2	14.3	---	12.7	8.9	3.3
ALLIANCE CAPITAL	3/31/85	58,738,405	---	9.9	47.9	2.4	12.6	---	15.8	8.0	3.4
ALLIANCE CAPITAL	12/31/84	52,332,767	---	8.7	48.8	---	10.2	---	20.6	8.1	3.7
ALLIANCE CAPITAL	9/30/84	51,653,441	---	8.8	49.7	---	9.6	---	19.3	9.2	3.5
ALLIANCE CAPITAL	6/30/84	48,457,996	---	8.1	51.6	---	6.9	---	23.5	9.9	---
ALLIANCE CAPITAL	3/31/84	47,427,119	---	8.3	48.0	2.7	5.6	---	25.1	10.4	---
ALLIANCE CAPITAL	12/31/83	52,725,699	0.8	7.5	45.3	---	6.8	2.4	24.2	13.1	---
ALLIANCE CAPITAL	9/30/83	52,945,082	2.8	5.4	45.9	---	9.2	---	24.6	12.1	---
ALLIANCE CAPITAL	6/30/83	57,538,354	2.2	4.7	42.3	---	8.2	7.5	22.7	12.4	---
ALLIANCE CAPITAL	3/31/83	51,037,067	---	3.5	49.9	2.7	6.7	3.6	23.5	10.0	---
BEUTEL GOODMAN	6/30/85	75,450,430	2.8	---	12.8	---	30.4	23.1	19.1	11.7	---
BEUTEL GOODMAN	3/31/85	70,177,266	2.1	---	19.2	---	28.4	33.1	13.6	3.6	---
BEUTEL GOODMAN	12/31/84	63,402,269	8.8	---	13.8	---	32.2	33.8	11.4	---	---
BEUTEL GOODMAN	9/30/84	60,461,938	6.5	---	14.0	---	37.1	35.6	6.8	---	---
BEUTEL GOODMAN	6/30/84	55,295,358	9.3	---	21.1	---	30.4	32.4	6.7	---	---
BEUTEL GOODMAN	3/31/84	56,896,258	8.9	---	18.6	---	27.2	39.3	6.0	---	---
BEUTEL GOODMAN	12/31/83	57,233,781	9.8	---	20.2	---	11.2	46.2	5.4	7.2	---
BEUTEL GOODMAN	9/30/83	55,416,939	8.8	---	22.0	---	13.1	43.5	4.7	8.0	---
BEUTEL GOODMAN	6/30/83	54,835,808	11.0	---	18.5	---	17.4	42.4	---	10.6	---
BEUTEL GOODMAN	3/31/83	50,442,256	---	---	15.7	---	15.4	52.1	---	16.8	---

EQUITY SECTOR WEIGHTS

MANAGER NAME	DATE	TOTAL PORTFOLIO MARKET VALUE	CAP GDS	CONS DUR	CONS NDUR	ENER	FINL	MAT & SERV	TECH	TRAN	UTIL
BMI CAPITAL	6/30/85	9,759,880	5.4	9.7	34.9	---	5.7	4.0	30.3	9.9	---
BMI CAPITAL	3/31/85	9,851,108	7.1	9.0	37.6	---	---	6.8	35.9	3.7	---
BMI CAPITAL	12/31/84	9,015,974	6.5	5.8	40.0	---	---	7.4	35.9	4.4	---
BMI CAPITAL	9/30/84	8,820,740	4.6	13.4	42.6	---	---	4.1	31.3	3.9	---
BMI CAPITAL	6/30/84	8,533,642	3.2	16.4	37.4	---	---	11.5	31.5	---	---
BMI CAPITAL	3/31/84	8,366,038	4.3	12.7	39.3	---	---	17.8	25.9	---	---
BMI CAPITAL	12/31/83	9,784,767	7.4	12.1	28.4	---	6.6	19.0	26.4	---	---
BMI CAPITAL	9/30/83	10,420,827	7.6	11.2	37.1	---	6.4	18.6	19.2	---	---
BMI CAPITAL	6/30/83	11,285,353	7.9	12.7	44.2	---	9.8	15.9	9.5	---	---
BMI CAPITAL	3/31/83	10,081,983	10.6	8.1	35.3	---	12.3	22.0	11.8	---	---
FORSTMANN-LEFF	6/30/85	66,383,632	1.1	7.4	40.1	---	25.1	10.3	11.0	5.1	---
FORSTMANN-LEFF	3/31/85	61,436,421	2.5	9.8	25.7	---	25.5	14.7	17.4	4.4	---
FORSTMANN-LEFF	12/31/84	55,396,358	1.4	10.5	30.9	---	23.3	15.1	13.3	5.5	---
FORSTMANN-LEFF	9/30/84	53,550,733	4.5	4.6	32.5	---	21.5	14.5	18.9	3.6	---
FORSTMANN-LEFF	6/30/84	51,218,131	3.7	3.6	40.2	---	7.0	10.3	24.3	7.2	3.7
FORSTMANN-LEFF	3/31/84	52,083,507	7.6	3.0	37.0	---	6.0	14.5	23.1	6.0	2.8
FORSTMANN-LEFF	12/31/83	55,421,154	5.7	13.6	35.5	5.8	3.9	8.4	18.7	5.3	3.1
FORSTMANN-LEFF	9/30/83	55,775,736	---	14.6	52.3	3.3	4.5	5.3	15.1	4.8	---
FORSTMANN-LEFF	6/30/83	56,471,479	---	12.7	61.4	---	2.7	7.2	11.7	4.3	---
FORSTMANN-LEFF	3/31/83	51,390,160	2.1	4.7	50.7	5.9	4.7	10.3	17.4	4.2	---
HELLMAN JORDAN	6/30/85	64,181,384	3.9	3.5	23.0	7.0	26.0	15.5	7.5	3.5	10.0
HELLMAN JORDAN	3/31/85	59,732,797	1.3	---	21.9	5.9	25.3	13.6	16.1	6.7	9.2
HELLMAN JORDAN	12/31/84	54,923,168	1.3	6.1	19.5	1.1	19.8	17.1	20.3	9.2	5.7
HELLMAN JORDAN	9/30/84	52,497,049	1.5	10.7	11.3	0.8	14.0	15.3	29.3	12.0	5.0
HELLMAN JORDAN	6/30/84	47,929,367	1.8	12.4	13.8	1.2	16.4	21.2	12.6	11.1	9.6
HELLMAN JORDAN	3/31/84	49,895,127	---	12.4	19.5	6.4	15.7	15.7	4.3	8.8	17.2
HELLMAN JORDAN	12/31/83	50,182,761	---	14.8	30.0	6.0	16.5	10.4	2.1	3.0	17.2
HELLMAN JORDAN	9/30/83	50,713,576	---	15.0	47.4	---	19.5	3.5	3.3	4.7	6.5
HELLMAN JORDAN	6/30/83	52,402,164	---	3.8	23.3	---	35.9	---	24.8	---	12.2
HELLMAN JORDAN	3/31/83	49,541,253	---	---	15.1	---	33.4	4.6	27.2	---	19.7
INVESTMENT ADVISERS	6/30/85	66,785,302	3.4	8.8	6.5	3.2	18.8	17.1	29.0	13.2	---
INVESTMENT ADVISERS	3/31/85	62,742,678	3.4	6.0	6.1	2.8	16.3	19.9	32.9	12.6	---
INVESTMENT ADVISERS	12/31/84	58,967,426	3.3	6.4	13.6	5.9	20.5	19.2	19.9	10.8	0.6
INVESTMENT ADVISERS	9/30/84	55,807,710	3.7	7.2	21.5	6.9	21.0	13.1	20.2	5.6	0.8
INVESTMENT ADVISERS	6/30/84	50,388,386	5.5	5.9	26.3	6.2	18.8	9.1	20.6	3.7	3.9
INVESTMENT ADVISERS	3/31/84	51,864,720	5.8	5.4	30.2	8.9	21.5	7.7	15.6	3.9	1.0
INVESTMENT ADVISERS	12/31/83	54,533,402	6.3	6.3	25.0	5.8	21.9	9.7	15.7	6.1	3.2
INVESTMENT ADVISERS	9/30/83	53,819,067	5.8	6.2	30.6	6.0	13.4	9.1	18.3	7.1	3.5
INVESTMENT ADVISERS	6/30/83	54,812,985	6.5	6.6	24.7	11.7	9.7	9.8	16.9	10.3	3.9
INVESTMENT ADVISERS	3/31/83	50,748,987	6.5	9.1	26.0	10.2	7.3	15.0	17.7	5.0	3.2
IDS ADVISORY	6/30/85	68,295,847	3.0	4.8	27.7	8.4	13.4	7.2	11.7	8.5	15.1
IDS ADVISORY	3/31/85	62,021,800	---	5.2	27.5	9.8	11.0	7.3	14.0	7.7	17.6
IDS ADVISORY	12/31/84	57,153,006	1.8	4.6	29.5	3.7	7.6	3.7	16.9	7.2	25.0
IDS ADVISORY	9/30/84	55,468,185	3.4	6.6	25.4	7.6	7.9	5.6	19.6	4.6	19.4
IDS ADVISORY	6/30/84	50,278,968	---	5.3	27.6	8.1	6.8	7.6	19.2	4.8	20.6
IDS ADVISORY	3/31/84	50,085,955	4.8	10.1	12.4	9.6	8.7	14.3	15.2	9.5	15.4
IDS ADVISORY	12/31/83	54,006,960	4.9	7.6	18.0	---	8.8	19.0	26.1	6.0	9.6
IDS ADVISORY	9/30/83	54,334,602	---	4.1	24.3	3.4	6.0	19.7	33.8	5.4	3.4
IDS ADVISORY	6/30/83	57,561,715	4.2	12.0	30.5	4.5	4.2	6.7	33.7	4.3	---
IDS ADVISORY	3/31/83	50,689,028	5.4	9.2	30.7	5.4	9.8	6.4	26.3	---	6.6

EQUITY SECTOR WEIGHTS

MANAGER NAME	DATE	TOTAL PORTFOLIO MARKET VALUE	CAP GDS	CONS DUR	CONS NDUR	ENER	FINL	MAT & SERV	TECH	TRAN	UTIL
LIEBER & COMPANY	6/30/85	31,313,770	2.1	7.8	21.4	4.6	30.3	16.0	11.0	5.5	1.2
LIEBER & COMPANY	3/31/85	29,544,589	2.9	8.0	25.3	6.1	28.9	15.1	8.9	3.5	1.3
LIEBER & COMPANY	12/31/84	26,473,866	3.2	5.3	27.0	3.2	24.2	18.4	15.3	3.4	---
LIEBER & COMPANY	9/30/84	25,807,665	2.9	3.8	33.0	4.1	22.4	16.8	14.8	2.2	---
LIEBER & COMPANY	6/30/84	23,927,529	2.6	3.3	34.8	3.5	21.1	16.7	15.3	1.8	0.8
LIEBER & COMPANY	3/31/84	24,261,218	3.6	6.4	32.3	4.9	17.3	16.8	16.3	1.8	0.7
LIEBER & COMPANY	12/31/83	11,159,936	7.7	4.5	33.7	3.5	16.7	22.3	6.1	5.6	---
LIEBER & COMPANY	9/30/83	11,016,060	6.5	3.5	31.0	4.7	18.0	25.4	5.4	5.5	---
LIEBER & COMPANY	6/30/83	11,233,248	6.4	5.0	33.3	5.0	16.5	23.9	3.3	6.6	---
LIEBER & COMPANY	3/31/83	10,063,917	8.3	---	23.1	3.9	11.6	41.0	5.6	6.4	---
LOOMIS SAYLES	6/30/85	54,796,721	---	2.7	44.6	---	47.3	---	5.5	---	---
LOOMIS SAYLES	3/31/85	49,233,894	---	13.8	19.3	---	30.1	---	36.7	---	---
LOOMIS SAYLES	12/31/84	46,561,187	---	24.0	12.9	---	26.1	---	37.0	---	---
LOOMIS SAYLES	9/30/84	46,082,328	---	16.0	18.9	---	12.8	---	52.3	---	---
LOOMIS SAYLES	6/30/84	43,613,462	7.6	12.8	16.1	---	4.9	8.8	33.8	16.0	---
LOOMIS SAYLES	3/31/84	45,336,835	11.2	15.1	3.4	---	5.1	12.8	38.2	14.3	---
LOOMIS SAYLES	12/31/83	49,181,570	11.6	16.1	3.3	---	5.2	14.0	33.5	16.4	---
LOOMIS SAYLES	9/30/83	50,182,549	3.5	14.5	13.3	---	10.6	5.2	44.9	8.0	---
LOOMIS SAYLES	6/30/83	55,042,543	3.1	9.0	12.1	---	34.6	10.8	20.4	9.9	---
LOOMIS SAYLES	3/31/83	50,105,254	---	4.8	19.8	---	25.4	9.1	30.7	10.1	---
NORWEST BANK MPLS	6/30/85	29,610,673	0.2	---	51.4	4.2	12.4	2.9	24.0	2.7	2.3
NORWEST BANK MPLS	3/31/85	27,145,424	---	2.3	44.2	6.3	9.2	6.2	28.0	1.9	1.9
NORWEST BANK MPLS	12/31/84	25,188,312	---	2.3	37.5	2.7	3.9	9.8	37.7	4.1	1.9
NORWEST BANK MPLS	9/30/84	25,685,954	---	3.7	38.0	0.6	2.3	11.9	39.7	1.3	2.4
NORWEST BANK MPLS	6/30/84	24,546,941	2.8	5.5	31.2	5.8	1.0	9.3	38.9	4.3	1.3
NORWEST BANK MPLS	3/31/84	10,385,041	3.6	4.4	23.1	8.5	1.1	7.2	45.5	5.4	1.1
NORWEST BANK MPLS	12/31/83	11,215,761	2.5	1.6	25.5	1.2	3.2	6.0	51.8	1.7	6.6
NORWEST BANK MPLS	9/30/83	11,816,270	1.2	---	31.6	3.3	2.0	8.4	46.1	1.4	5.8
NORWEST BANK MPLS	6/30/83	12,126,921	4.8	---	36.4	5.2	8.9	4.8	33.0	2.9	3.3
NORWEST BANK MPLS	3/31/83	10,417,512	7.0	1.8	47.1	4.2	13.5	---	20.1	6.3	---
SIEBEL CAPITAL	6/30/85	63,008,528	2.6	11.7	40.3	1.1	13.2	6.4	24.8	---	---
SIEBEL CAPITAL	3/31/85	59,170,590	7.0	5.4	39.1	1.2	18.9	5.9	22.5	---	---
SIEBEL CAPITAL	12/31/84	55,043,551	3.2	6.3	35.4	---	16.1	4.1	26.3	8.5	---
SIEBEL CAPITAL	9/30/84	52,544,464	3.6	6.2	43.1	1.2	13.3	3.2	24.7	4.8	---
SIEBEL CAPITAL	6/30/84	49,523,376	4.1	4.8	38.8	---	25.9	7.4	17.6	1.4	---
SIEBEL CAPITAL	3/31/84	49,328,007	3.6	1.3	26.4	---	25.8	11.4	29.2	2.4	---
SIEBEL CAPITAL	12/31/83	53,482,144	3.6	1.7	27.9	---	24.0	11.7	24.6	2.6	3.8
SIEBEL CAPITAL	9/30/83	54,520,467	3.5	---	32.7	2.8	25.1	7.2	19.3	5.0	4.4
SIEBEL CAPITAL	6/30/83	56,381,931	2.6	---	36.4	1.7	22.6	6.2	20.1	5.4	5.0
SIEBEL CAPITAL	3/31/83	51,621,595	4.6	---	28.8	---	18.5	5.3	30.0	6.7	6.2
HERBERT R. SMITH	6/30/85	51,502,874	2.3	3.3	23.1	8.8	25.5	5.2	18.8	13.1	---
HERBERT R. SMITH	3/31/85	47,216,714	2.4	3.2	24.3	8.8	20.1	4.7	18.7	17.8	---
HERBERT R. SMITH	12/31/84	43,937,991	0.8	7.8	22.1	13.4	17.9	0.3	17.6	20.1	---
HERBERT R. SMITH	9/30/84	44,289,327	1.4	8.9	20.0	17.9	12.4	3.3	26.7	9.4	---
HERBERT R. SMITH	6/30/84	42,860,060	2.4	0.3	24.4	25.5	10.6	7.5	20.9	7.4	1.1
HERBERT R. SMITH	3/31/84	44,150,474	3.3	0.2	10.1	28.8	16.9	12.8	18.6	9.1	---
HERBERT R. SMITH	12/31/83	46,441,280	4.4	0.4	15.4	10.6	14.5	8.8	30.2	15.8	---
HERBERT R. SMITH	9/30/83	48,910,462	2.2	0.6	12.7	9.4	22.1	15.6	23.2	9.4	4.8
HERBERT R. SMITH	6/30/83	53,176,398	2.0	0.6	15.5	5.2	17.6	13.9	29.4	7.3	6.7
HERBERT R. SMITH	3/31/83	50,198,982	4.8	---	32.6	---	20.5	---	34.7	7.4	---

EQUITY SECTOR WEIGHTS

MANAGER NAME	DATE	TOTAL PORTFOLIO MARKET VALUE	CAP GDS	CONS DUR	CONS NDUR	ENER	FINL	MAT & SERV	TECH	TRAN	UTIL
TRUSTEE & INVESTORS	6/30/85	52,236,198	6.2	1.3	12.7	3.7	7.2	33.2	25.2	9.9	0.6
TRUSTEE & INVESTORS	3/31/85	50,202,957	2.3	1.5	17.0	3.9	6.8	26.2	31.2	11.1	---
TRUSTEE & INVESTORS	12/31/84	47,486,287	---	1.7	9.9	3.9	7.1	28.0	34.9	11.2	3.3
TRUSTEE & INVESTORS	9/30/84	48,156,379	---	---	6.3	15.1	21.9	8.2	36.3	8.4	3.8
TRUSTEE & INVESTORS	6/30/84	44,119,650	2.5	---	9.9	11.9	17.6	9.4	38.8	---	10.0
TRUSTEE & INVESTORS	3/31/84	47,158,224	2.5	---	10.0	16.0	17.3	10.1	35.3	---	8.7
TRUSTEE & INVESTORS	12/31/83	50,974,369	2.4	---	12.9	9.3	16.7	9.5	41.4	---	7.7
TRUSTEE & INVESTORS	9/30/83	53,062,524	2.5	---	15.6	10.5	17.1	8.8	38.4	---	7.1
TURSTEE & INVESTORS	6/30/83	57,620,180	2.9	3.2	17.0	11.5	18.9	10.3	29.7	---	6.5
TRUSTEE & INVESTORS	3/31/83	50,154,412	3.6	---	12.2	14.4	24.1	10.2	24.1	---	11.4
WADDELL & REED	6/30/85	29,531,769	---	11.8	14.5	2.5	21.1	18.4	13.3	6.1	12.4
WADDELL & REED	3/31/85	27,604,382	---	12.8	11.9	2.7	21.5	15.8	16.3	7.9	11.2
WADDELL & REED	12/31/84	26,234,116	---	14.0	18.7	---	18.8	2.7	25.5	1.0	19.3
WADDELL & REED	9/30/84	25,856,251	1.4	13.9	28.0	3.3	14.3	0.5	30.9	1.6	6.1
WADDELL & REED	6/30/84	25,495,564	---	29.0	25.7	---	15.7	---	17.8	11.8	---
WADDELL & REED	3/31/84	25,833,644	5.2	32.1	21.4	---	25.0	---	11.7	4.5	---
WADDELL & REED	12/31/83	11,409,742	12.8	32.4	---	---	33.9	---	20.9	---	---
WADDELL & REED	9/30/83	12,042,511	5.8	13.4	22.5	---	5.1	---	38.2	15.0	---
WADDELL & REED	6/30/83	12,464,478	5.7	13.2	29.2	3.3	5.0	---	31.1	12.5	---
WADDELL & REED	3/31/83	10,013,713	5.5	13.8	15.5	2.5	29.1	---	27.2	6.4	---
WILSHIRE 5000	6/30/85	---	4.8	4.0	26.3	11.2	12.2	10.8	13.6	3.6	13.5
WILSHIRE 5000	3/31/85	---	4.9	3.9	25.3	13.0	11.4	10.9	14.4	3.3	12.9
WILSHIRE 5000	12/31/84	---	5.4	9.9	23.0	13.5	9.9	10.6	13.2	3.7	10.8
WILSHIRE 5000	9/30/84	---	5.2	4.3	24.9	13.2	10.3	11.5	15.5	2.9	12.2
WILSHIRE 5000	6/30/84	---	5.3	4.0	25.7	13.5	9.6	11.7	15.6	2.9	11.7
WILSHIRE 5000	3/31/84	---	5.4	3.9	23.6	16.1	9.8	12.1	15.3	2.9	11.1
WILSHIRE 5000	12/31/83	---	5.5	4.2	24.0	14.5	9.5	12.2	16.3	2.8	11.1
WILSHIRE 5000	9/30/83	---	5.2	4.0	24.3	14.8	9.4	11.8	16.3	2.9	11.3
WILSHIRE 5000	6/30/83	---	5.3	3.9	24.9	15.0	9.3	11.6	16.3	2.9	10.9
WILSHIRE 5000	3/31/83	---	5.1	3.5	25.2	14.6	9.8	12.3	14.9	2.9	11.8

TABLE A-3

EXTERNAL EQUITY MANAGERS
HISTORICAL PERFORMANCE SUMMARY

	2Q 1985	1Q 1985	4Q 1984	3Q 1984	2Q 1984	1Q 1984	4Q 1983	3Q 1983	2Q 1983
FRED ALGER									
Equity	10.1%	7.3%	0.2%	8.3%	-4.1%	-8.1%	-1.0%	-3.5%	13.9%
Total Fund	9.1	7.2	0.2	8.0	-3.5	-7.0	-0.9	-3.4	13.1
ALLIANCE CAPITAL									
Equity	11.5	13.1	1.3	7.1	2.2	-11.2	-0.6	-8.7	14.3
Total Fund	10.8	12.2	1.3	6.6	2.2	-10.1	-0.4	-8.0	12.7
BEUTEL GOODMAN									
Equity	8.1	12.1	5.1	10.1	-2.8	-0.7	3.5	3.4	13.9
Total Fund	7.5	10.7	4.9	9.3	-2.8	-0.6	3.3	1.1	8.7
BMI CAPITAL									
Equity	-0.7	10.5	2.3	3.6	2.1	-14.4	-6.0	-7.8	14.4
Total Fund	-0.9	9.3	2.2	3.4	2.0	-14.5	-6.1	-7.7	11.9
FORSTMANN-LEFF									
Equity	9.4	12.6	3.7	7.5	-2.8	-8.3	-1.0	-1.7	11.2
Total Fund	8.1	10.9	3.4	4.6	-1.7	-6.0	-0.6	-1.2	9.9
HELLMAN JORDAN									
Equity	9.5	10.0	4.3	8.6	-4.8	-3.1	-0.9	-9.5	10.0
Total Fund	7.5	8.7	4.6	9.5	-3.9	-0.6	-1.0	-3.2	5.8
IDS ADVISORY									
Equity	10.7	9.2	3.2	11.4	0.0	-8.4	-0.9	-6.6	14.3
Total Fund	10.1	8.5	3.0	10.3	0.4	-7.3	-0.6	-5.6	13.6
INVESTMENT ADVISERS									
Equity	7.1	6.6	5.8	11.3	-3.0	-5.8	1.5	-2.9	11.6
Total Fund	6.4	6.4	5.7	10.7	-2.8	-4.9	1.3	-1.8	8.0
LIEBER & COMPANY									
Equity	6.3	13.8	2.9	8.9	-1.3	-10.2	1.7	-2.4	16.6
Total Fund	6.0	11.6	2.6	7.9	-1.4	-7.3	1.3	-1.9	11.6
LOOMIS SAYLES									
Equity	11.5	6.9	1.5	6.0	-4.8	-8.8	-2.3	-9.3	10.2
Total Fund	11.3	5.7	1.0	5.7	-3.8	-7.8	-2.0	-8.8	9.8
NORWEST BANK MPLS									
Equity	10.7	9.5	-2.1	5.3	-3.2	-8.8	-6.0	-3.6	19.6
Total Fund	9.1	7.8	-1.9	4.7	-2.7	-7.4	-5.1	-2.6	16.4
SIEBEL CAPITAL									
Equity	7.5	9.8	5.2	7.4	0.4	-9.1	-2.4	-4.0	10.6
Total Fund	6.5	7.5	4.8	6.1	0.4	-7.8	-1.9	-3.3	9.2
HERBERT R. SMITH									
Equity	10.1	9.4	-0.9	3.4	-3.1	-6.4	-7.8	-11.0	13.4
Total Fund	9.1	7.5	-0.8	3.3	-2.9	-4.9	-5.1	-8.0	5.9
TRUSTEE & INVESTORS									
Equity	4.3	6.1	-1.4	9.3	-6.8	-7.8	-3.7	-7.9	16.4
Total Fund	4.1	5.7	-1.4	9.1	-6.4	-7.5	-3.9	-7.9	14.9
WADDELL & REED									
Equity	8.7	8.1	0.7	-1.6	-10.3	-14.0	-9.3	-4.7	30.2
Total Fund	7.0	5.2	1.5	1.4	-1.3	-2.2	-5.3	-3.0	24.0
SBI AGGREGATE									
Equity	8.8	9.5	2.4	8.0	-2.7	-7.5	-1.5	-5.3	13.2
Total Fund	8.0	8.4	2.4	7.2	-2.2	-5.9	-1.2	-4.5	10.5
MARKET INDICES									
Wilshire 5000	7.5	10.3	1.3	9.2	-2.8	-4.2	-1.0	-0.9	13.0
S&P 500	7.4	9.2	1.8	9.7	-2.5	-2.4	0.4	-0.1	11.1
91 Day T-Bills	1.9	2.1	2.3	2.7	2.6	2.4	2.3	2.4	2.2

BOND MANAGER PORTFOLIO STATISTICS GLOSSARY

Like the preceding equity manager portfolio statistics glossary, this bond manager portfolio statistics glossary is designed to define terminology used in evaluating a bond manager's investment philosophy, risk characteristics and performance data.

Qtr. Port. Turnover - the manager's total bond sales during the quarter divided by the average value of the manager's bond portfolio over the quarter.

# of Issues - the number of different bond issues held in the manager's portfolio.

Bond Allocation - the percent of the manager's total portfolio invested in bonds.

Coupon - the annual interest payment received on the manager's total portfolio stated as a percent of the portfolio's face value.

Current Yield - the annual interest payment produced by the manager's total portfolio stated as a percent of the portfolio's market value.

Yield to Maturity - the compounded annualized return that the manager's total portfolio would produce if it were held to maturity and all cash flows were reinvested at an interest rate equal to the yield to maturity.

Duration - a measure of the average life of the total portfolio. Duration is a weighted average maturity whereby the time in the future that each cash flow is received is weighted by the proportion that the present value of the cash flow contributes to the total present value (or price) of the total portfolio.

Term to Maturity - also a measure of the average life of the total portfolio. Term to maturity is the number of years remaining until the average bond in the portfolio makes its final cash payment.

Quality Weightings	-	refer to the average rating given the total portfolio's securities by Moody's Corp. A security's rating indicates the financial strength of its issuer and other factors related to the likelihood of full and timely payment of interest and principal.
Sector Weightings	-	refer to the sectors of the bond market in which the manager has position his/her bond portfolio.
TUCS Median	-	the median manager within a subsample of the TUCS universe that is restricted to fixed income managers investing in portfolios with quality and duration characteristics similar to those that are required of the SBI's bond managers.

TABLE A-4

EXTERNAL FIXED INCOME MANAGERS

PORTFOLIO STATISTICS HISTORICAL SUMMARY

MANAGER NAME	DATE	QUARTER PORTFOLIO T/O	# OF BONDS	BOND ALLOCATION	COUPON	CURRENT YIELD	YIELD TO MAT.	AVERAGE QUALITY	DURATION	TERM TO MAT.
AVG. EXT. MGRS.	6/30/85	48	29	95	10.4	10.2	10.4	AAA	4.5	8.5
AVG. EXT. MGRS.	3/31/85	37	25	91	10.3	10.8	11.5	AAA	4.2	8.2
AVG. EXT. MGRS.	12/31/84	38	22	93	10.3	10.8	11.4	AAA	4.5	8.8
AVG. EXT. MGRS.	9/31/84	54	29	88	10.1	11.1	12.3	AAA	4.3	8.8
INVESTMENT ADV.	6/30/85	50	17	99	8.4	8.1	10.1	AAA	4.7	6.2
INVESTMENT ADV.	3/31/85	19	13	99	8.7	9.3	11.7	AAA	4.9	8.9
INVESTMENT ADV.	12/31/84	25	10	99	8.4	9.3	11.5	AAA	5.6	12.1
INVESTMENT ADV.	9/31/94	10	7	100	9.0	10.8	12.6	AAA	6.4	15.2
LEHMAN MGMT.	6/30/85	49	27	92	11.4	10.8	9.9	AAA	3.8	6.3
LEHMAN MGMT.	3/31/85	43	24	85	11.6	11.4	11.0	AAA	3.6	5.6
LEHMAN MGMT.	12/31/84	44	19	85	11.6	11.4	10.8	AAA	3.3	5.3
LEHMAN MGMT.	9/31/84	62	15	82	11.2	11.5	12.2	AAA	3.7	6.5
MILLER ANDERSON	6/30/85	75	48	95	9.3	10.0	10.4	AA	4.6	9.3
MILLER ANDERSON	3/31/85	35	41	92	9.0	10.0	11.1	AA	3.7	7.4
MILLER ANDERSON	12/31/84	50	43	99	9.1	10.1	11.3	AA	3.9	7.3
MILLER ANDERSON	9/31/84	83	59	71	9.8	11.1	11.9	AAA	3.3	6.7
MORGAN STANLEY	6/30/85	38	17	100	11.4	10.8	10.5	AAA	5.0	9.7
MORGAN STANLEY	3/31/85	62	16	85	11.1	11.3	11.5	AAA	3.8	7.3
MORGAN STANLEY	12/31/84	30	12	100	11.5	11.5	11.5	AAA	5.3	9.4
MORGAN STANLEY	9/31/84	105	20	99	8.6	8.9	12.5	AAA	3.7	5.3
NORWEST BANK	6/30/85	15	35	98	11.2	10.8	10.5	AA	3.4	7.6
NORWEST BANK	3/31/85	13	28	100	11.1	11.3	11.5	AA	3.7	7.6
NORWEST BANK	12/31/84	39	25	96	10.5	10.9	11.3	AA	3.5	7.5
NORWEST BANK	9/31/84	17	21	93	10.6	11.7	12.5	AA	3.6	7.6
WESTERN ASSET	6/30/85	58	29	84	10.5	10.7	10.8	AA	5.4	12.1
WESTERN ASSET	3/31/85	52	28	87	10.4	11.5	12.1	AA	5.3	12.2
WESTERN ASSET	12/31/84	39	24	80	10.6	11.4	11.8	AA	5.2	11.3
WESTERN ASSET	9/31/84	49	19	80	11.3	12.3	12.8	AA	4.8	11.3

TABLE A-5

EXTERNAL FIXED INCOME MANAGERS

SECTOR WEIGHTING HISTORICAL PROFILE

MANAGER NAME	DATE	TOTAL PORTFOLIO MARKET VALUE	QUALITY WEIGHTINGS AAA	AA	A	BAA	OTHER	SECTOR WEIGHTINGS GOVT	AGCY	ZERO	IND	UTIL	FIN	TRAN	MTGS	MISC	CASH
AVG. EXT. MGRS.	6/30/85	---	81	6	6	3	4	34	1	4	5	4	9	0	36	1	5
AVG. EXT. MGRS.	3/31/85	---	78	10	6	2	4	27	5	4	5	6	12	0	31	1	9
AVG. EXT. MGRS.	12/31/84	---	77	12	7	2	2	33	8	4	2	8	12	0	24	1	7
AVG. EXT. MGRS.	9/31/84	---	79	12	7	2	0	30	10	7	3	8	9	1	19	1	12
INVESTMENT ADV.	6/30/85	33,794,148	96	4	0	0	0	62	0	23	10	0	4	0	0	0	1
INVESTMENT ADV.	3/31/85	30,942,776	85	15	0	0	0	53	0	18	11	13	4	0	0	0	1
INVESTMENT ADV.	12/31/84	30,397,636	74	26	0	0	0	52	0	18	0	25	4	0	0	0	1
INVESTMENT ADV.	9/31/84	27,932,974	72	28	0	0	0	59	0	10	0	31	0	0	0	0	0
LEHMAN MGMT.	6/30/85	190,808,742	91	5	4	0	0	64	8	0	5	2	4	0	9	0	8
LEHMAN MGMT.	3/31/85	177,383,853	95	3	2	0	0	65	13	0	2	0	2	0	3	0	15
LEHMAN MGMT.	12/31/84	173,831,628	98	0	2	0	0	64	13	0	3	0	0	0	5	0	15
LEHMAN MGMT.	9/31/84	162,737,117	96	1	2	0	0	60	13	5	4	0	0	0	0	0	18
MILLER ANDERSON	6/30/85	183,857,869	69	3	8	4	16	19	0	2	5	0	12	0	57	0	5
MILLER ANDERSON	3/31/85	173,961,916	54	13	11	2	20	2	0	4	7	0	27	0	52	0	8
MILLER ANDERSON	12/31/84	169,696,156	55	17	14	5	9	0	0	7	5	0	36	0	51	0	1
MILLER ANDERSON	9/31/84	159,574,376	81	12	5	2	0	0	0	0	2	0	17	0	52	0	29
MORGAN STANLEY	6/30/85	188,907,479	100	0	0	0	0	49	0	0	0	0	0	0	51	0	0
MORGAN STANLEY	3/31/85	173,106,782	100	0	0	0	0	38	9	0	0	0	0	0	38	0	15
MORGAN STANLEY	12/31/84	170,547,941	100	0	0	0	0	74	18	0	0	0	0	0	8	0	0
MORGAN STANLEY	9/31/84	159,109,110	100	0	0	0	0	45	27	27	0	0	0	0	0	0	1
NORWEST BANK	6/30/85	92,417,709	56	15	20	7	2	0	0	0	4	5	33	0	49	7	2
NORWEST BANK	3/31/85	86,259,088	55	23	19	3	0	3	0	0	0	5	38	0	47	7	0
NORWEST BANK	12/31/84	84,387,890	65	13	18	4	0	6	7	0	0	5	30	0	48	0	4
NORWEST BANK	9/31/84	79,887,650	58	14	24	4	0	12	7	0	10	0	31	0	33	0	7
WESTERN ASSET	6/30/85	197,929,627	73	9	4	8	6	10	0	0	8	15	0	1	51	0	15
WESTERN ASSET	3/31/85	181,426,695	76	9	4	7	4	4	11	0	8	16	0	1	47	0	13
WESTERN ASSET	12/31/84	177,328,832	69	15	7	5	4	3	11	0	6	19	2	2	33	4	20
WESTERN ASSET	9/31/84	165,957,816	68	15	9	5	3	4	16	0	3	18	4	5	26	4	20

Tab B

PORTFOLIO STATISTICS

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT
COMPOSITION OF STATE INVESTMENT PORTFOLIO'S BY TYPE OF INVESTMENT
MARKET VALUE JUNE 30, 1985

	CASH AND SHORT TERM SECURITIES	BONDS		STOCKS		ALTERNATIVE ASSETS	TOTAL
		INTERNAL	EXTERNAL	INTERNAL	EXTERNAL		
BASIC RETIREMENT FUNDS:							
TEACHERS RETIREMENT FUND	$ 84,157 5.58%	$ -0- 0.00%	$375,682 24.91%	$ -0- 0.00%	$ 936,953 62.12%	$111,409 7.39%	$1,508,201 100%
PUBLIC EMPLOYEES RETIRE. FUND	61,174 5.65%	-0- 0.00%	270,004 24.92%	-0- 0.00%	672,293 62.05%	79,905 7.38%	1,083,376 100%
STATE EMPLOYEES RETIRE. FUND	51,311 6.71%	-0- 0.00%	188,203 24.59%	-0- 0.00%	469,857 61.40%	55,894 7.30%	765,265 100%
PUBLIC EMP. POLICE & FIRE FUND	12,772 4.61%	-0- 0.00%	73,332 26.49%	-0- 0.00%	170,627 61.62%	20,154 7.28%	276,885 100%
HIGHWAY PATROL RETIRE. FUND	2,168 4.04%	-0- 0.00%	14,291 26.66%	-0- 0.00%	33,226 61.98%	3,922 7.32%	53,607 100%
JUDGES RETIREMENT FUND	152 4.06%	-0- 0.00%	996 26.57%	-0- 0.00%	2,325 62.03%	275 7.34%	3,748 100%
POST RETIREMENT FUND	206,223 7.76%	1,722,028 64.79%	-0- 0.00%	729,721 27.45%	-0- 0.00%	-0- 0.00%	2,657,972 100%
MINNESOTA SUPPLEMENTAL FUNDS:							
INCOME SHARE ACCOUNT	12,384 8.66%	43,297 30.26%	-0- 0.00%	77,622 54.26%	9,760 6.82%	-0- 0.00%	143,063 100%
GROWTH SHARE ACCOUNT	3,108 4.64%	50 .07%	-0- 0.00%	34,338 51.23%	29,532 44.06%	-0- 0.00%	67,028 100%
FIXED RETURN ACCOUNT	20,281 29.37%	48,783 70.63%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	69,064 100%
BOND ACCOUNT	61 1.14%	5,276 98.86%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	5,337 100%
MINNESOTA VARIABLE ANNUITY	4,547 3.80%	85 .07%	-0- 0.00%	54,060 45.20%	60,924 50.93%	-0- 0.00%	119,616 100%
TOTAL RETIREMENT FUNDS	$ 458,338 6.79%	$1,819,519 26.94%	$922,508 13.66%	$895,741 13.26%	$2,385,497 35.33%	$271,559 4.02%	$6,753,162 100%

PERMANENT SCHOOL FUND	37,948 11.41%	236,416 71.10%	-0- 0.00%	58,133 17.49%	-0- 0.00%	-0- 0.00%	332,497 100%
TREASURERS CASH	1,042,109 100%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	1,042,109 100%
TRANSPORTATION FUNDS	454,918 100%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	454,918 100%
STATE BUILDING FUNDS	100,684 100%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	100,684 100%
HOUSING FINANCE AGENCY	151,782 100%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	151,782 100%
MINNESOTA DEBT SERVICE FUND	190,615 100%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	190,615 100%
MISCELLANEOUS ACCOUNTS	109,263 100%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	109,263 100%
TACONITE AREA ENVIR. PROTECTION	12,300 100%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	12,300 100%
N.E. MINNESOTA PROTECTION	39,596 100%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	-0- 0.00%	39,596 100%
GRAND TOTAL	$2,597,553 28.27%	$2,055,935 22.38%	$922,508 10.04%	$953,874 10.38%	$2,385,497 25.97%	$271,559 2.96%	$9,186,926 100%

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

For period of
April 1, 1985 - June 30, 1985

Teachers Retirement Fund	$(18,500,000)
Public Employees Retirement Fund	(12,500,000)
State Employees Retirement Fund	-0-
Public Employees Police and Fire	1,600,000
Highway Patrolmans Retirement Fund	-0-
Judges Retirement Fund	-0-
Post Retirement Fund	139,501,058
Supplemental Retirement Fund - Income	(22,404)
Supplemental Retirement Fund - Growth	450,899
Supplemental Retirement Fund - Fixed	1,495,358
Supplemental Retirement Fund - Bond	174,807
Minnesota Variable Annuity Fund	(218,013)
Total Retirement Funds Net Cash Flow	$ 111,981,705
Permanent School Fund	$ 1,133,403
Total Net Cash Flow	$ 113,115,108

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT

TRANSACTION AND ASSET SUMMARY
RETIREMENT FUNDS

	Net Transactions				Asset Summary (at market)			
	Bonds (000,000)	Stocks (000,000)	Total	Cash Flow	Short-term % of Fund	Bonds % of Fund	Equity % of Fund	Total (000,000) (at market)
July 1983	47	154	201	47	6.1	35.2	58.7	5053
August	19	7	26	39	6.3	35.4	58.3	5072
September	22	(103)	(81)	29	8.3	35.9	55.8	5202
October	2	93	95	51	7.5	35.8	56.7	5158
November	18	(20)	(2)	40	6.3	37.4	56.3	5275
December	(1)	22	21	47	5.7	37.9	56.4	5262
January 1984	3	(31)	(28)	45	6.8	38.7	54.5	5267
February	(1)	27	26	31	7.0	38.6	54.4	5170
March	5	19	24	11	5.7	39.0	55.3	5119
April	(2)	24	22	36	6.1	36.9	57.0	5145
May	4	43	47	40	6.2	37.5	56.3	4993
June	5	(38)	(33)	119	8.7	36.5	54.8	5187
July	151	29	180	34	5.8	40.5	53.7	5247
August	(6)	(16)	(22)	24	6.2	38.4	55.4	5598
September	16	(6)	10	14	6.3	39.0	54.7	5652
October	19	32	51	31	5.8	39.7	54.5	5748
November	(7)	(19)	(26)	18	6.5	40.1	53.4	5760
December	91	(71)	20	12	6.3	41.2	52.5	5864
January 1985	(5)	131	126	20	4.3	42.0	53.7	6188
February	30	(5)	25	27	4.3	41.2	54.5	6177
March	(1)	5	4	26	4.6	41.7	53.7	6213
April	(79)	17	(62)	23	5.9	40.7	53.4	6260
May	(13)	(41)	(54)	32	6.9	40.4	52.7	6602
June	284	118	402	408	6.8	41.2	52.0	6801
July	84	68	153	40	5.2	41.8	53.0	6812

Tab C

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT

Room 105, MEA Building
55 Sherburne Avenue
Saint Paul 55155
296-3328

September 12, 1985

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

FROM: Administrative Committee

SUBJECT: Committee Report

The Committee reviewed the staff's proposed legislative changes in the investment options available to participants in the Minnesota Supplemental Retirement Fund. The Committee recommends staff work closely with the Minnesota State Retirement System and other interested parties in developing an investment needs and objectives analyis of the Fund. The Committee recommends that staff develop specific proposals to be presented to the IAC and Board at their next meetings.

The Committee also reviewed staff's proposed guidelines governing investments in repurchase agreements. The guidelines do not significantly differ from existing investment practices. They serve largely to formalize the criteria already in use. The Committee recommends the Board approve the proposed guidelines.

CRITERIA FOR REPURCHASE AGREEMENTS

A. General

1. All repurchase transactions shall be done under a master agreement, between the State of Minnesota and the banker or dealer.

2. Purchased securities shall have a market value equal to no less than the dollar amount of transactions, and if more than 3 years from maturity its value shall be 103%.

3. All transactions shall be evidenced by a confirmation delivered to the State Department of Finance.

B. Transactions With Banks

1. The bank shall be one of the 60 largest in the nation, ranked by deposits.

2. Any outstanding Commerical Paper of the bank or its parent shall be of the highest rating.

3. Purchased securities shall be held in a segregated safekeeping account for the State of Minnesota. (This maybe one account covering all state funds or a separate account for each state fund depending on the system used by the bank).

4. Deliver out Repo maybe done with other banks.

5. Minnesota banks may be utilized on a hold in custody basis even though they do not meet the size criteria. Total outstanding repurchase agreements with any such bank will be limited to $10,000,000.

C. Transactions With Dealers

1. All dealers must be a "primary reporting dealer" as designated by the New York Federal Reserve Bank and must meet the voluntary Federal Reserve Capital Adequacy Guidelines.

2. Hold In Custody repurchase agreements may be done with dealers having capital exceeding $200,000,000 (calculated according to SEC net excess capital method).

3. Third party repurchase transactions (where collateral is delivered to a custodian) may be done with any dealer whose net excess capital exceeds $30,000,000.

4. Deliver out repo may be done with any primary reporting dealer.

5. Primary dealers not meeting the capital requirements for hold in custody or third party repo who have a parent that is willing to guaranty the subsidiary's transactions may be used.

Tab D

EXECUTIVE DIRECTOR
HOWARD J. BICKER

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT

Room 105, MEA Building
55 Sherburne Avenue
Saint Paul 55155
296-3328

September 12, 1985

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

FROM: Asset Allocation Committee

SUBJECT: Committee Report

The Committee reviewed the second part of the staff position paper on the needs and objectives of the Permanent School Fund (attached). As stated in its last report, the Committee recommends that the asset allocation of the Permanent School Fund be restructured in order to increase the value of the Fund over time and provide a growing stream of inflation-adjusted income through the use of equity investments.

However, given the Fund's current accounting provisions, if the Fund's asset mix were to include a large equity component, it would lower the amount of current spendable income as well as make that income stream unacceptably volatile. Therefore, the Committee recommends a change in the Fund's accounting provisions.

At the time of the last Board meeting, the staff believed that a constitutional amendment was required to change the Fund's accounting provisions. After further research, the staff and Attorney General's office have concluded that the sufficient remedies can be enacted by the legislature, without the need for a constitutional amendment. The Committee recommends that the Board adopt the conclusions of the staff position paper and seek the appropriate legislative changes during the 1986 session.

PERMANENT SCHOOL FUND
NEEDS AND OBJECTIVES
PART II

Staff Position Paper
September 1985

REVIEW OF RECENT DISCUSSIONS

As discussed in a recent staff paper, the Permanent School Fund was created by the State Constitution for the purpose of serving as a long-term source of revenue for public schools. Income generated by the Fund currently is used to offset state school aid payments. This offset is running at a rate of approximately $26 million a year.

The needs and objectives of the Permanent School Fund are similar to those of typical endowment funds. Like the typical endowment fund, in achieving its goal of generating spendable income the Fund must trade-off immediate maximum income investment objectives versus long-run income growth investment objectives.

On the other hand, the Permanent School Fund's restrictive accounting provisions differentiate it from a typical endowment fund. The Fund's principal must remain inviolate. Further, any net realized equity and fixed income capital gains are added to the Fund's principal. Moreover, if the Fund should realize 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.

The investment management flexibility of the Permanent School Fund is sharply limited by these accounting provisions. The Fund has a strong incentive not to invest in equity assets. Equity holdings are not desirable for several reasons. First, common stock dividend yields are considerably lower than bond yields.

Thus, common stocks generate less current income than bonds. Second, equity prices are highly volatile and at times may produce realized capital losses that will reduce spendable income. Finally, because the Fund's principal cannot be spent, and net capital gains become part of the Fund's principal, the effect of the volatility of equity prices on the Fund's spendable income cannot be smoothed out by spending past realized capital gains. As a result, in its position paper staff recommended, and the IAC and SBI concurred, that the Fund should be managed to generate maximum current income. The Board approved the recommendation that all of the Fund's assets be placed in fixed income securities.

Staff also recommended, with the IAC's concurrence, that the SBI endorse a constitutional amendment that would liberalize the Fund's restrictive accounting provisions. Such a liberalization would permit the Permanent School Fund to be invested so as to balance current income needs against long-run income growth needs.

NEW INFORMATION AND RECOMMENDATIONS

At the time of the position paper's preparation, staff believed that the Permanent School Fund's restrictive accounting provisions could only be liberalized through a constitutional amendment. Additional staff research into this matter, and a review by the Attorney General's office, has indicated that there may exist statutory remedies to the problem that would bypass the cumbersome procedure of obtaining a constitutional change.

Specifically, the Constitution states that "The principal of the Permanent School Fund shall be perpetual and inviolate forever. This does not prevent the sale of investments at less than the cost of the fund; however, all losses not offset by gains shall be repaid to the fund from the interest and dividends earned thereafter." These accounting provisions cannot be changed without a constitutional amendment.

However, precisely what constitutes the principal of the Permanent School Fund is defined both in the Constitution and in statute. The Constitution states that the proceeds from various land sales and leases are part of the Fund's principal. On the other hand, State statutes specify that "In any fiscal year in which gains on the sale of securities exceed the losses on the sales of securities, the excess shall be added to the principal of the fund."

It is this statutory accounting provision that is particularly binding on the Fund's investment management. This provision essentially eliminates any short-run benefits of common stock ownership, because net capital gains are added to principal and, thus, cannot be distributed. If the provision were removed by legislative action, realized capital gains could be spent, in part, to sustain current expenditures as well as reinvested to support future growth in expenditures. The principal of the Fund would then be defined only as the proceeds from land sales and leases.

The constitutionally mandated offset of interest and dividend income against net capital losses does not pose a serious problem from an investment management perspective if this statutory change were enacted. Only in the situation where the value of the Fund's securities (at cost) fell below the value of the accumulated proceeds from land sales and leases (i.e., the Fund's principal) would income from interest and dividends have to be used to offset realized net capital losses. Since 1974, approximately $35 million in capital gains have been realized. This amount could provide a initial buffer against possible future declines in the value (at cost) of the Fund's securities.

If this proposed statutory change were to become law, the Permanent School Fund's investment portfolio could be managed more in the manner of a typical endowment fund. Common stocks could make up a significant portion of the Fund's assets. Annual spending targets, as a percent of total portfolio assets, could be set. These spending targets would be financed by interest and dividend income, as well as realized capital gains. They would be established with the goal of producing a growing stream of inflation-adjusted expenditures. In periods when the Fund's total return is insufficient to maintain targeted spending, past realized capital gains can be spent. On the other hand, if earnings exceeded spending targets, the excess can be reinvested to increase the size of the Fund's invested assets. If realistic spending targets are established, the size of the Fund should grow over time and thus produce a rising stream of cash flows.

Several other less significant changes in the Permanent School Fund's investment accounting can also be made through statutory changes. The first would eliminate the provision that all of the Fund's interest and dividend income must be paid out in the year in which it is earned. Rather, the Fund's spending targets would govern the distribution of income. The second change would delete the Fund's deferred yield adjustment, which amortizes losses on securities sales over a predefined period. Since the Fund would be managed on a total return basis, this provision is unnecessary and could result in a misallocation of investments. Instead, realized capital losses would be fully accounted for the period in which they were taken.

Tab E

EXECUTIVE DIRECTOR
HOWARD J. BICKER

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT

Room 105, MEA Building
55 Sherburne Avenue
Saint Paul 55155
296-3328

September 11, 1985

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

FROM: Equity Manager Committee

SUBJECT: Committee Report

The Committee reviewed the recent termination of four of the SBI's equity managers and the additional funding of existing managers. The transitional trading, done by Wilshire Associates, went very smoothly. An analysis of the trading is included in the Equity Manager Committee section of the quarterly report.

The Committee also discussed the search for an additional "value" style manager. This manager would replace the SBI internal staff manager who is temporarily managing a common stock portfolio for the active equity manager pool. Further, if the SEC permits performance-based fees and the Board adopts such a fee structure, a second additional manager may have to be hired. This manager would replace an existing manager who appears unwilling to work under a performance-based fee arrangement.

The Committee agreed to request that IAC members and Evaluation Associates submit a list of potential managers that offer a disciplined, value investment approach. The Committee plans to meet again soon to develop a recommended search process. It will also develop a set of criteria to be used in identifying potential replacements for the SBI manager who is reluctant to accept performance-based fees.

The Committee also reviewed briefly SBI staff's research into normal portfolios. These portfolios are unique to each manager and represent a manager's investment style. As a result they are a more appropriate benchmark against which to measure a manager's performance than is a broad market index, such as the Wilshire 5000. A staff position paper on normal portfolios is contained in the Equity Manager Committee section of the quarterly report.

EQUITY MANAGER UPDATE INTERVIEWS
SUMMARY NOTES

I. STAFF COMMENTS AND RECOMMENDATIONS

With the recent changes in the SBI's active equity manager configuration, staff believes that the program has been improved. The bias toward growth managers has been largely alleviated. Further, those managers whose organizational stability and investment management structure were in question have been not been retained. Staff believes that the remaining managers have consistently implemented their stated investment approach. Performance among the value and rotational managers has been strong over the last year, depsite a generally lackluster second quarter 1985. The growth managers have had a considerably more difficult market in which to operate. With the exception of adding an additional manager with a value approach, staff recommends that no further changes or special monitoring be considered at this time.

II. RECENT MEETING DATES

MANAGER	DATE OF MEETING
Fred Alger Management	August 23
Alliance Capital	September 4
BMI Capital	August 23
Beutel Goodman	August 21
Forstmann-Leff	August 22
Hellman Jordan	August 5
IDS Advisory	August 19
Investment Advisors	August 19
Lieber & Company	August 22
Peregrine Capital	August 19
Waddell & Reed	September 6

III. ORGANIZATION

No significant organizational changes have occurred at any of the SBI's equity managers since the last set of meetings.

IV. ASSETS UNDER MANAGEMENT

	MARCH 1983		DECEMBER 1984		JUNE 1984	
	NUMBER	MARKET VALUE (MILL.)	NUMBER	MARKET VALUE (MILL.)	NUMBER	MARKET VALUE (MILL.)
Fred Alger	59	$1,645	77	$2,093	77	$2,358
Alliance	43	1,095	46	1,134	46	1,819
BMI Capital	5	160	17	277	18	323
Beutel Goodman	5	104	16	358	25	800
Forstmann-Leff	126	4,800	102	4,074	85	3,919
Hellman Jordan	22	440	29	664	33	969
IDS Advisory	87	3,361	81	3,087	74	3,210
Investment Advisors	79	1,001	89	1,403	90	1,617
Lieber & Company	14	341	17	469	19	685
Peregrine Capital	3	49	3	94	4	118
Waddell & Reed	6	471	9	605	9	671

Beutel Goodman is the only SBI manager that is undergoing growth rapid enough to cause concern. Beutel Goodman's highly successful performance record over the last two years has resulted in significant account growth. As noted in the last quarterly review, staff has made its concerns known to the firm. Beutel Goodman's long-run growth target is 40-50 accounts and $1 billion under management. It is quickly approaching those levels. The firm insists that it will seek to slow account growth as it nears those targets.

IDS and Forstmann-Leff, on the other hand, continue to experience erosion of their account base. This loss of clients continues despite recent strong performance by the two firms. Staff remains concerned that the loss of accounts at IDS may cause its parent, Shearson/American Express, to insist on management changes that might be disruptive to the investment management process. Thus far, however, there appears to be no sign of dissatisfaction on the part of Shearson/American Express.

V. STAFF

The only significant staff change since the last set of update interviews occurred at Beutel Goodman. Stephen Prouns was hired as the firm's third portfolio manager. For the last five years Prouns was senior vice president and director of research at AIM Management, Inc., a large Houston investment management firm. Prouns has been given an ownership share of Beutel Goodman. His addition is part of the firm's growth plan, which calls for expanding its capacity to handle new clients by increasing the number of portfolio managers. The firm expects to hire one more portfolio manager in the next year. At that time, it believes it will have reached its growth targets and expects no additional significant growth.

VI. INVESTMENT APPROACH

Staff can identify no problems at any of the SBI's managers with respect to the consistent implementation of their investment approaches. Each firm appears to have an understanding of its role in the SBI's actively managed equity portfolio.

Considerable time was spent at the manager meetings discussing the concept of normal portfolios and how they are constructed. (See the staff position paper on normal portfolios for detailed information.) Staff has designed a first pass normal portfolio for each manager. Comments were solicited from the managers. Based upon these discussions, staff expects to finalize each manager's normal portfolio by the next set of manager meetings to be held after the end of 1985.

As part of the normal portfolio discussion, staff first presented the results of the analysis it had conducted on past portfolios submitted by each manager. The purpose of this analysis was to identify prominent portfolio characteristics that should be captured by a manager's normal portfolio. Staff then described the specific construction process used to design the manager's normal portfolio. The financial characteristics of the normal portfolio were reviewed. Finally, the performance of the normal portfolio over the last six months versus the manager's actual performance was presented.

VII. MISCELLANEOUS

The subject of performance-based fees was discussed with each manager. The purpose of these discussion was to solicit suggestions from the managers concerning how a performance fee structure could be designed that is equitable to both the SBI and the manager. Presuming that the Securities and Exchange Commission acts to permit performance fees this fall, staff will prepare a formal proposal for the IAC's and Investment Board's consideration shortly thereafter.

Report prepared by Wilshire Associates
August, 1985

TRANSITIONAL MANAGEMENT

I. EXECUTIVE SUMMARY

The objective of transitional management is to provide a link between the cessation of investment activity upon manager termination and the commencement of investment activity by newly hired managers.

The purpose of Transitional Management is the **preservation of value** and **maintenance of appropriate equity exposure** in accordance with the SBI's strategy to build assets and pay benefits.

When managers are terminated, the costs of transition are often ignored because no one is well positioned to manage the transition. The terminated manager will not be devoted to preserving assets. The new manager is often given a "grace period" until his style of management is established. The brokerage community has elaborate techniques to assist, but most plan sponsors are not experienced in the nuances of controlling and monitoring the process.

Most plan sponsors would agree that the costs of transition can be substantial.* Certainly, anything that can be done to reduce the cost of transition will lead to lower future contributions and taxes.

TRADE COSTS

The most visible cost of trading is the commission paid to the broker executing the trade. While this is the only cost that can be seen on the accounting statements, it may be a minor portion of the total trade cost. There are additional trading costs that affect the price received for the assets sold. These costs can be broken into two components: market maker spread and trading impact (often called "price concession".)

* Wilshire Associates, in another context, very conservatively estimated the average transition cost to be two percent or greater.

Wilshire Associates Consulting Division has summarized the "iceberg" of trading cost as follows:

Custodial cost	0-1	cents	per	share	(visible)
Commission	5-12	"	"	"	(visible)
Spread	6-12	"	"	"	(not visible)
Impact	0-35	"	"	"	(not visible)
Total	**12-60**	"	"	"	

Depending on the price of the stock, this may amount to as little as 0.2% of the price of the stock round trip or as much as 12% or more. Most broadbased studies of trade costs derive average numbers in the 2-3% range round trip.

The market maker spread is the difference between the "bid" price at which a market maker (e.g. the NYSE specialist) offers to buy for his own account and the "asked" price at which he is willing to sell. The spread may be as little as one eighth on a hundred dollar stock (0.125%) and as large as several dollars on a thinly traded stock selling for less than ten dollars (30% plus).

The trading impact arises when the amount to be sold is greater than the current demand. Then a buyer must be enticed by offering a bargain price less than the current market maker quote. Most often the sale is to a broker who provides liquidity by buying stock with his own money. (He intends to sell it over time at a higher price than he paid.) This is the price of immediate execution.

Two factors most affect the size of the market impact; the liquidity of the stock and the size of the order. Tom Loeb of Mellon Capital Management estimated immediate execution costs based on actual broker responses to names and sizes. Loeb's cost estimates range from 1.1% to 43.8%(!) round trip, depending on size of the order and size of the company. Loeb's figures for immediate execution provide an accurate benchmark to evaluate alternate trading methods. While most traders feel that they can execute cheaper than the Loeb rates, there is no other convenient standard to adjust expected costs according to trade size and company size. Accordingly, we use the Loeb numbers as a benchmark throughout our evaluation.

TECHNIQUES FOR REDUCING TRADE COSTS

The high cost associated with Loeb's trading method derive from the fact that immediate execution is demanded, independent of the supply and demand for the stock at that moment. Clearly, demanding instantaneous sale of 10,000 shares with no buyers around will incur greater impact than when 100,000 shares are currently bid for.

The essence of transitional management, then, is the control over the speed at which orders are revealed to the markets, and the search for investors desiring to take the other side of the trade "naturally." This is accomplished in several steps, each less desirable than the previous.

Step one was to facilitate retention in the SBI funds. The terminated managers' portfolios were passed over the SBI Wilshire 5000 fund to absorb excessive positions while simultaneously "rebalancing" the fund at no extra cost.

Then the securities in the portfolio were offered to existing and newly hired managers.

Secondly, Wilshire directly contacted other investors who might be trading at the same time. Index fund managers and State Funds are considered "safe" contacts, since they often trade on liquidity, in contrast to trading on information. The trade is called a "cross" when matched buys and sells are simultaneously brought to the market. The price is usually set at the closing price or the bid/asked average at an agreed time. A cross eliminates the spread, avoids impacts, and requires only a penny a share commission since the broker is only responsible for clearing the trade.

Finally, stocks that could not be used internally nor crossed were offered in the market at a rate governed by demand. The avenues used to accomplish this were (1) direct institution-to-institution trading through such organizations as Instinet, (2) off-floor trades arranged by "third market" brokers like Jefferies and Cantor Fitzgerald, and (3) agency trades on the NYSE handled by member firms.

These trades require agreement on a mutually acceptable price. Wilshire adopted the posture of a provider of liquidity. That is, we would attempt to earn market makers spreads for the fund by providing stock on demand, rather than paying for liquidity. Thus we refused many of the trades offered. Rather than accept a lower price, we chose to wait for a buyer willing to deal on our terms.

Of course, there is a tradeoff: it takes longer to manage a sell off in this manner than by using broker-at-risk principal or package trading. Our position is that it is far more desirable and fiducial to liquidate in an orderly manner than to act in haste, even though a great deal of effort and patience is required.

THE LIQUIDATION PORTFOLIO: CHARACTERISTICS AND EXPECTATIONS

Wilshire Asset Management took fiduciary responsibility for a combined terminated portfolio of 199 names worth $233,920,600.50 as of the market close on June 28, 1985.

The terminated managers' portfolios tended to be characterized by concentrated positions in smaller stocks, the type of stock often most expensive to trade.

The terminated portfolio had the following characteristics:

- On a trade dollar weighted basis, these stocks represented 0.85 days worth of trading. (As a rule of thumb, we expect to move a quarter of a day's volume without affecting price.)

- Only 88 positions were less than a quarter day's volume, while seventy positions represented more than a full day's trading volume.

- Forty six companies had a capitalization less than $100 million.

- The Loeb cost estimate was 2.81% of the assets.

PROGRAM EVALUATION AND ESTIMATED SAVINGS

The table below summarizes the activity undertaken and the levels of activity accommodated during the various stages of the transition. The trades identified as Index fund or SBI manager trades were those accomplished within the SBI fund. Crosses were matched trades with outside managers, and market trades were the **liquidity provider** trades done on the open market.

TYPE OF TRADE	SHARES TRADED	DOLLARS (AT STRIKE)	PCT OF TOTAL	AVG DAYS TO COMPLETE
Index Fund	983,716	$15,127,246	6.5%	0
SBI Managers	792,800	37,241,138	15.9	0
Crosses	998,200	40,528,000	17.3	0
Market	3,994,891	130,272,283	60.3	5.85
Total	**6,949,769**	**$223,169,666**	**100.0**	**3.51**

The following table summarizes the costs of the trading activity.

TYPE OF TRADE	CENTS/ SHARE	TOTAL COMM	PERCENT IMPACT	DOLLAR IMPACT	TOTAL COST
Index Fund	0	0	0%	0	0
SBI Managers	0	0	0	0	0
Crosses	1	14,314	0	0	14,314
Market	4	17,696	0.4	520,678	698,374
Total		**$192,010**		**$520,678**	**$712,688**

The dollar impact represents 0.23% of the total dollars traded, and the commissions add another 0.09% to the total cost of trading.

If we compare this total cost to the $6,271,068 derived from multiplying the estimated Loeb cost of 2.81% by the dollars to be liquidated, we derive a savings of $5,460,040, equal to 87% of the potential cost. This amount is almost 55 times the fee to manage the trading activity.

If we ignore the activity undertaken within the SBI fund, the savings is still $3,471,943 on an estimated cost of $4,184,631, 83% of the total.

The conclusion is that the transitional manager activity was a success and resulted in significant savings and preservation of the assets of the SBI.

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In the following sections, the trading activity is analyzed in greater detail.

II. THE EFFECTIVENESS OF INTERNAL TRANSFERS

To illustrate the transitional trading process, four difficult and four easy trades have been identified. The trading activity associated with these issues will be traced throughout the rest of this paper to illustrate the transition and evaluation processes.

DIFFICULT TRADES

SHARES	COMPANY	DAYS TRADING	MKT CAP	LOEB COST
72800	A&M Food Services	21 days	21 mil	16.7%
79400	Novar Electronics	5	53	15.0
5000	Mathematical Applic	4	10	21.9
46500	Scientific Communic	inf	13	16.7

(Scientific Communications did not trade at all in the last five trade days in June.)

EASY TRADES

2000	Consolidated Papers	.06 days	1.1 bil	1.1%
36600	Lockheed	.11	3.3	1.4
35700	RCA	.07	3.5	1.4
37100	Deere	.22	2.0	1.4

The first step in liquidation was to pass the securities through the index fund to absorb excess positions while rebalancing the index fund. Funds for the purchases were available through a ten million dollar SBI contribution and over five million of accumulated cash from dividend flows.

The index fund took in 1,846,541 shares and released 862,825 shares for a net dollar transaction of $15,127,245.63. These trades were handled as "free receipts and deliveries" by the custodian with zero commission cost, spread and impact.

Of the 199 securities available, 23 failed the minimum quality screen used by the index fund to avoid bankruptcy candidates;. 126 issues were accommodated into the index fund, 57 representing complete positions. The rebalancing released ninety securities for sale, including 45 new names. As a result, the number of securities to sell increased to 246.

Passing the portfolio through the index fund reduced the anticipated Loeb cost from 2.81% to 2.46, but increased the average days volume slightly from .85 days to .88.

A net 6.5% of the terminated portfolio was accommodated through the index fund at zero cost.

Three difficult and all four easy illustrative positions could be used by the index fund, three of them complete positions.

DIFFICULT TRADES

ORIG	COMPANY	SHARES TO INDEX	REMAINING	PCT
72800	A&M Food Services	72800	0	100
79400	Novar Electronics	33400	46000	42
5000	Mathematical Applic	5000	0	100
46500	Scientific Communic	0	46500	0

EASY TRADES

2000	Consolidated Papers	2000	0	100
36600	Lockheed	5100	31500	14
25700	RCA	8100	17600	32
37100	Deere	400	33100	11

The next step was to allow SBI managers to pick and chose from the inventory. In total, managers selected 792,800 shares worth $37,241,137.50 or 15.9% of the total.

Managers accepted shares in thirty two securities, reducing the shares remaining to 5,339,891 in 148 names worth $181,552,217.37. At this point, 22.4% of the liquidation had been accomplished totally within the SBI funds.

None of the difficult trades and only one of the easy trades, 10,000 Deere, were accommodated by a manager.

The effect of providing access to the terminated stocks was to leave the anticipated Loeb cost after the index fund essentially unchanged at 2.45%, while the average days volume further increased to .95 days. Thus, while the managers clearly saved transition costs, their activity increased the difficulty of the remaining trade package.

III. CROSSES: DIRECT TRADING WITH OTHER INSTITUTIONAL INVESTORS

At this point there was no demand within the SBI system for the remaining 5.3 million shares worth $182 million. Buyers with interests opposed to those of the SBI had to be found.

If a natural buyer can be found directly, the fee to a broker for finding that party can be avoided. More importantly, a balanced buy/sell trade is market neutral: no excess of buying or selling pressure.

The natural partners for such trades are index funds and pension plans in the process of restructuring. Index funds are net buyers and not motivated by information on the securities sought. Public plans that manage internally or centralize trading are also desirable "crossing" partners.

In total, fourteen potential trade partners were contacted and trades executed with five organizations. One was another fund of Wilshire Asset Management, two were other index fund managers, and two were public funds, one a Wilshire client and one made known by a broker. The high success in finding this many parties was probably enhanced by mid-year manager changes.

Price negotiation was accomplished prior to market close on June 28, with an agreement to set prices as of the market close. In this manner executed at a price equal to "strike" price for zero impact, zero spread, and a penny commission.

In total, 998,200 shares worth $40,528,000.00 were crossed.

CROSS WITH:	SHARES	DOLLARS	PCT	COMM
Boston Safe	214,700	$ 8,743,737,50	3.7%	1 cent
MASS PRIM	325,500	$12,595,987.50	5.4	1
Mellon Capital	147,200	$ 6,513,137.50	2.8	1
Amer National	202,500	$ 8,505,712.50	3.6	1
Florida	108,300	$ 4,169,425.00	1.8	5

Four of the easy and difficult trades were accommodated through crosses, but substantial positions were left in three easy and two difficult issues.

DIFFICULT TRADES

ORIG	COMPANY	SHARES CROSSED	REMAINING	PCT
728000	A&M Food Services	0	0	0%
79400	Novar Electronics	1400	44600	2
5000	Mathematical Applic	0	0	0
46500	Scientific Communic	0	46500	0
	EASY TRADES			
2000	Consolidated Papers	0	0	0
36600	Lockheed	4400	27100	12
25700	RCA	4500	13100	18
37100	Deere	1700	21400	5

No public indication had yet been given of our activity, yet almost forty percent of our trading was complete. The result of the crossing activity was to raise the expected Loeb cost to 2.89% and the average days' trading to 1.11 days. As might be expected, the crosses were easier to accomplish in more liquid names.

IV. TRADING ON THE OPEN MARKET

At this juncture the open market had to be approached to locate buyers and negotiate mutually acceptable prices. The important factors to be considered were:

1) Constant awareness of the presence of buyers and other sellers in the market;

2) A method to signal potential buyers that we are sellers without affecting market price;

3) An awareness of abnormal conditions of price movement, trade volume, or company news.

The classical method of trading listed stocks is to "meet" other traders at the specialist's post on the NYSE. A disadvantage of this process is the need for intermediaries, implying a loss of instantaneous control, potential leakage of information and higher cost. In addition, we are potentially dealing with market makers on a principal basis when we prefer to capture the market makers' profit for the fund by effectively dealing in the market as a principal ourselves.

Fortunately, alternative trading mechanisms are well established. The "third market" consists of firms that trade in stocks without taking the orders to the NYSE floor (although all have access to the floor). These firms operate essentially as a telephone-based clearinghouse to match buyers and sellers at mutually acceptable prices.

In addition a "fourth market" matches trades via computer where traders can indicate their interest without revealing their identity or size.

We made extensive use of the third market (Jefferies and Cantor Fitzgerald) and the fourth market (Instinet). We used the NYSE system when floor conditions were favorable (i.e. more buyers than sellers), using brokers good at keeping us informed about conditions.

As mentioned earlier, we attempted to earn market maker spreads for the fund by providing stock to the market on demand. Our offering price equaled the price asked by the market maker. From that most favorable price we would negotiate within the bid-asked spread unless conditions were particularly favorable to our side.

Why would anyone trade with us under these conditions? We had stock to sell. We were willing to sell it at a price as good as available anywhere else. We traded through channels that left the public markets unperturbed. Finally, we offered our trades through lower commission cost avenues.

Clearly, if buyers were as insistent on the bid price as we were on the asked, little trading would be accomplished. However, other parties do offer price concessions for immediate execution while we wait for buyers willing to deal on our terms.

We were able to liquidate stock at a steady rate. During the first seven days of trading we averaged fifteen million dollars per day, roughly 6.4% of the initial package. After seven days less than $30 million remained, and the dollars per day dropped off as positions were completed and fewer candidates were available.

Our most successful avenue for trading was Jefferies, not in number of tickets but in dollar volume. Jefferies exhibited an ability to locate buyers and accomplished 60% of our market trading. Next most successful was Instinet, through which we did 25% of our trading. Only six percent of our trading was done through NYSE members.

Before we describe the results of this trading, several side issues need to be discussed.

It is far more difficult to deal in the above manner in over-the-counter securities. Except for crosses and Instinet, the avenues to deal on an agency basis are not well established. OTC markets operate on a "net" basis where no commission is charged and the broker takes his profit in the spread. Furthermore, there is no size shown by the OTC brokers and it is difficult to find who is truly making the market at any point. We used Instinet for more OTC trades. One significant insight into our ability to bargain was the numerous times we split the usual one-eighth spread and traded in sixteenths.

We also disposed of some bonds, some preferred stock in arrears, and a "Pink Sheets" company with no established market place. In these cases where regular markets on stocks do not exist we asked for competitive bids (if any!) and accepted the highest bid.

TRADE EVALUATION METHODS

In a very real sense it is impossible to measure trade costs. The most accurate measure would compare the actual price received to the (unobservable) price which would have prevailed if we were not present. Any other method of evaluation will necessarily introduce estimation error.

Notwithstanding, the following trade evaluation method seems fair and unbiased. We record the market price at the time the assets are under control, which we designate the "strike price." We then adjust his strike price for movement in the stock's sector between the time of strike and execution. The actual execution price is then divided by this adjusted strike price to compute the trade impact. Commission costs are added in to total the execution cost.

The method is imperfect because news about an individual issue could drive the price up or down independent of our market presence. It is impossible to distinguish between news related movement and price pressure. We expect, however, that averaging over many trades will reduce the inaccuracies as good news cancels bad.

Trades are further evaluated in groups according to relative trade size, company size, market direction, and the number of tickets.

MARKET TRADE EVALUATION

These measures applied to the easy/difficult trades show most gain was accomplished in the difficult issues.

DIFFICULT TRADES

ORIG	COMPANY	SHARES TRADED	NO OF TRADES	DAYS TOT	IMPACT EST	LOEB EST
72800	A&M Food Service	0			0.0%	16.7%
79400	Novar Electronics	44600	4	14	5.0	15.0
5000	Mathematical Applic	0			0.0	21.9
465000	Scientific Communic	46500	2	7	1.0	16.7

EASY TRADES

ORIG	COMPANY	SHARES TRADED	NO OF TRADES	DAYS TOT	IMPACT EST	LOEB EST
2000	Consolidated Papers	0			0.0	1.1
36600	Lockheed	27100	3	10	-5.9	1.4
25700	RCA	13100	2	7	1.6	1.4
37100	Deere	21400	3	8	0.1	1.4

Note that there was an apparent profit in Lockheed and a higher than Loeb cost in RCA. These are probable both due to information based movement in those stocks and illustrates the difficulty of accurately measuring impact.

The overall result of the evaluation, a summary of which appears on the next page, shows an execution impact of 0.4% of an adjusted strike price basis, in contrast to the 2.81% estimated Loeb cost based on the entire package, and the 2.89% estimated Loeb cost based on the market trades alone.

On a comparison of execution prices to unadjusted strike prices, the impact was 0.2%, reflecting a slight upward trend during the time of trading. (This trend can be hedged out through the use of futures, if it is desired to eliminate market risk during transition).

On average, it took 5.8 days to liquidate the securities, roughly equivalent to moving a quarter of a day's volume per day.

	SHARES TRADED	DAYS TO EXEC	STRIKE PRICE	EXEC. PRICE	SECTOR ADJ PRICE	EST. IMPACT	RAW IMPACT	ISSUE/ SECTOR DIFF	CAP /1000	% DAILY VOLUME	VOLUME
MARKET DIRECTION											
UP > 0.5%	0.	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.	0.0	
FLAT	3882971.	5.85	33.10	32.96	33.15	-0.4	-0.2	0.0	1543.	30.5	
DOWN > 0.5%	0.	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.	0.0	
% OF VOLUME											
LT 10%	933525.	5.93	40.17	40.14	40.19	-0.3	-0.2	-0.7	2784.	4.9	
10% - 50%	2042215.	5.89	31.06	30.92	31.12	-0.1	0.0	0.5	1356.	26.0	
GT 50%	907231.	5.67	30.44	30.15	30.50	-1.0	-0.8	-0.3	686.	67.1	
DAYS TO COMPLETE											
SAME DAY	464885.	0.00	32.25	31.90	32.25	-0.9	-0.9	0.0	1375.	43.1	
1 DAY	654300.	1.00	31.72	31.99	31.71	1.8	1.8	2.1	1565.	33.3	
GT 1 DAY	2763786.	7.98	33.57	33.36	33.65	-0.8	-0.6	-0.5	1566.	27.8	
NUMBER OF TICKETS											
1	1867115.	3.30	34.34	34.27	34.34	0.2	0.2	0.6	1883.	35.1	
1 - 5	1924756.	8.09	32.53	32.26	32.62	-1.1	-0.8	-0.7	1266.	26.3	
GT 6	91100.	10.63	19.89	20.71	20.06	2.8	3.6	3.4	428.	26.8	
CAPITALIZATION											
GT $1 BIL.	1469931.	5.84	44.48	44.42	44.55	-0.4	-0.2	-0.4	3288.	21.8	
1BIL - 100MIL	2190110.	5.85	27.45	27.25	27.50	-0.3	-0.2	0.4	526.	32.7	
LT 100MIL	222930.	5.84	13.56	13.38	13.58	-0.6	-0.5	-0.1	32.	66.8	
GRAND AVERAGES	3882971.	5.85	33.10	32.96	33.15	-0.4	-0.2	0.0	1543.	30.5	

Analyses of the factors affecting trade cost are generally consistent with expectations:

* Trades involving a high percent of the daily volume were more costly, with a one percent cost for trades greater than half a day's volume and a 0.1 to 0.3 percent cost for trades of lesser volume.

* One anomaly: Trades that were completed within two days generate 1.8% negative impact (i.e., made money) while trades completed in one day or trades that took longer than two days cost 0.8 to 0.9 percent.

* Trades that took more than one ticket to complete cost more than trades completed in one ticket.

* Trades in companies less than one hundred million in capitalization were twice as expensive as trades in larger companies.

Part of the difference in the trade impact figures can be explained by separating the trades by broker. The following table is constructed by separating the trading activity by broker for evaluation.

BROKER	SHARES TRADED	ESTIMATED IMPACT COST	RAW IMPACT COST
Jefferies	2138400	0.9%	0.6%
Instinet-discr	669910	-0.9	-1.3
Instinet-direct	322530	1.2	0.9
Cantor Fitzgerald	251800	2.7	1.9
Interstate	111300	0.3	-1.2
Kidder Peabody	32300	2.7	1.6

The trades labeled Instinet-discr represents those trades for which Instinet's trade desk had discretionary control of the orders. The trades designated Instinet-direct were negotiated directly by WAM's trade desk.

As the table shows, the trades handled through the Instinet desk appear superior in execution, to the extent of generating negative impact. An inspection of the detailed data shown in the following summary pages shows superiority across all categories of company size and in cases where the trade represented less than half a day's volume. The ability of Jefferies to move larger amounts of stock at one time at a reasonable cost must be considered. The trades that were done directly through Instinet were in many cases those in which outside brokers had been unable to move the stock, and higher costs might be expected.

There was not a sufficient number of trades to evaluate NYSE members. Trades that were done by NYSE members (Kidder Peabody, Smith Barney, Interstate) were often situations in which supply was available on the floor. The brokers were put to work at a time selected by Wilshire and selected on their past abilities to execute well according to our instructions.

In very few cases were trades executed without a last moment check with Wilshire. The differences that show up in the evaluations of the brokers are a direct consequence of the directions established, implemented, and monitored by us. In that sense, Wilshire is directly responsible for the brokers' results. Yet, the evaluations remain a powerful tool for us to understand our own effectiveness and to communicate to the brokers what we consider to be a job well done.

Overall, the trade cost reduction was accomplished well within our expectations. The general conclusion is that accommodative, liquidity-provider trading accomplished the goal of significantly reducing total cost of liquidation, particularly for thinly traded issues.

NORMAL PORTFOLIOS
CONCEPTS AND APPLICATIONS

Staff Position Paper
September 1985

EXECUTIVE SUMMARY

The widespread use of multiple specialty investment managers by pension plans has created a need for more sophisticated selection and monitoring procedures. Normal portfolios can aid the plan sponsor both in designing a multiple manager configuration and evaluating its effectiveness.

A normal portfolio is a passive representation of the investment style of a specific money manager (or aggregation of money managers). It reflects the prominent risk characteristics that a manager's portfolio would exhibit if the manager were making no active investment judgements. In a sense, it represents the average risk-return posture that the manager would assume over a sufficiently long period of time.

Normal portfolios can be utilized on two levels by a pension plan sponsor. On the total fund level, a normal portfolio reflects the plan's long-run risk-return objectives, as represented by the normal portfolio's asset mix. Active strategies that cause the plan to temporarily deviate from its long-run investment policy can be evaluated using the normal portfolio as a benchmark.

Normal portfolios can also be used on the individual manager level. A manager's normal portfolio characterizes its investment style. Thus, normal portfolios can be used by a plan sponsor when searching for managers of a particular style. In addition, the normal portfolios of the managers of a pension plan can be aggregated to provide a measure of the total portfolio's long-run risk exposure. Finally, normal portfolios provide a useful

benchmark against which to compare the value that a manager adds to (or subtracts from) its investment style.

The construction of a normal portfolio for an investment manager entails five basic steps: First, a qualitative understanding of the manager's investment decision-making process must be gained; second, the manager's past portfolio holdings should be analyzed to identify prominent financial characteristics; third, a list of securities that will comprise the normal portfolio must be developed; fourth, these securities must be appropriately weighted and a normal cash position assigned; fifth, and finally, the normal portfolio should be backtested and compared against the manager's past performance. Actual examples for three Minnesota State Investment Board managers are described below.

Normal portfolios are not without significant drawbacks. Most importantly, their construction is more of an art than a science. Quantitatively identifying a manager's investment style is difficult, given the subjectivity and volatility associated with investment management. A lack of precision is an inherent problem of normal portfolios. Further, normal portfolios are costly to produce, in terms of both human and computer time. Despite these problems, normal portfolios have much to offer the plan sponsor seeking to design and monitor an effective multiple manager pension plan.

INTRODUCTION

Pension management has evolved considerably over the last twenty years. Previously, a pension plan's investment portfolio often was managed by a single balanced manager. Now, numerous specialized managers perform specific, predetermined functions, coordinated to varying degrees, within the typical pension plan's total portfolio.

The process of monitoring a pension plan's total investment program, as well as the plan's individual money managers, has also changed significantly. The advent of more powerful and cheaper computers, along with the concomitant expansion of computerized databases, has increased the ability of a plan sponsor to frequently analyze the risk-return characteristics of its total portfolio and individual investment managers. These increased capabilities have provided a plan sponsor with the means to take a more active role in determining an appropriate asset mix for the plan and in positioning individual managers within a total portfolio context. Further, a plan sponsor is now more capable of providing a dispassionate and thorough analysis of the value that it and its managers bring to the investment of the plan's assets.

Many plan sponsors, however, still retain and evaluate their multiple managers by overly simplistic means. These plan sponsors fail to view their investment managers' portfolios as individual components within a larger pool of financial assets. Valuable tools for alleviating these deficiencies are "normal portfolios." The purpose of this paper is to define the concept of normal portfolios, to discuss their applications, to give real life examples of their construction, and finally to present the potential drawbacks of their use.

MANAGER INVESTMENT STYLES

Typical institutional money managers today pursue consistent and distinct investment styles. A manager's investment style is a set of fundamental investment principals and decision rules that the manager utilizes, on a consistent basis, to construct a portfolio. These principals and rules run the gamut from asset class choice to individual security selection.

Manager firms develop investment styles out of organizational necessity. The ability to marshal and coordinate the individuals within the firm, as well as to market the firm's resources to plan sponsors, requires the adoption of certain fundamental policies and methods of operation. To the extent that the organization is successful and becomes well-recognized, its investment style will become more firmly established and more impervious to the substitution of individuals in and out of the organization.

Obvious examples of investment styles are equity managers who concentrate in very narrowly defined segments of the stock market, such as emerging growth stock managers. Other managers may utilize more broadly defined investment approaches. Nevertheless, it is the rare manager firm indeed which cannot verbalize its own particular investment style. Investment styles usually can be quantitatively evaluated by identifying the consistently prominent financial characteristics of the managers' current and past portfolios.

Managers following particular investment styles usually will construct portfolios that differ significantly in composition from the market portfolio. (Obvious exceptions include index fund managers and managers using other highly diversified investment approaches.) The multiple manager plan sponsor should attempt to identify these different investment styles and combine managers of the appropriate styles into a total portfolio so as to best fulfil the plan's long-run objectives. Normal portfolios can play an important role in effectively constructing and controlling a multiple manager pension plan.

DEFINITION OF A NORMAL PORTFOLIO

A normal portfolio is a passive representation of the investment style of a money manager (or an aggregation of money managers). That is, a normal portfolio reflects the prominent risk characteristics that a manager's portfolio would exhibit if the manager were making no active investment judgments.

Of course, at any particular time the risk attributes (and returns) of a manager's actual portfolio are likely to differ from those of its normal portfolio. However, if the normal portfolio is properly conceived, the differences should represent active decisions to deviate from the passive investment style in order to capture specific returns that the manager believes are temporarily available in the marketplace.

In a sense, a manager's normal portfolio represents the average risk-return posture that the manager would assume over a sufficiently long period of time. Prominent risk characteristics that persist should be captured by the normal portfolio. Active management decisions, which cause the actual portfolio to deviate from the normal portfolio, should tend to "wash out" over an extended time interval, revealing the manager's true investment style.

For example, consider the emerging growth stock manager referred to earlier. Assume that one could pose to the manager the hypothetical situation in which the manager had no strong beliefs concerning the future course of the economy and stock market, or the relative value of specific individual securities. Under this scenario, a plan sponsor would not expect this manager to hold a broadly diversified portfolio of securities resembling the market portfolio. Rather, the manager would more likely select a portfolio of common stocks concentrated in those immature companies that exhibit significant growth potential. Within this distinct group of stocks the portfolio would be diversified, with no significantly different weighting of any one issue, except for possible liquidity considerations. Further, the manager would likely hold some cash that would represent its normal risk aversion to the emerging growth sector, as well as "frictional" cash that occurs as a result of trading, income flows, etc.

The collection of stocks and cash described above would comprise that particular manager's normal portfolio. It would represent the true essence of the manager's investment style. As noted, the manager frequently may hold a portfolio that differs in terms of risk composition and ex post returns. Active bets stimulated by specific perceived market opportunities will result in these deviations. Nevertheless, the ability to conceptualize and measure the normal portfolio can greatly facilitate the manager monitoring process.

The normal portfolio concept can be traced back a number of years. Barr Rosenberg is commonly associated with the term "normal portfolio." He described a normal portfolio in the following manner.

> It is extremely useful... to consider what would be the optimal portfolio for the client if management were completely passive. Passive management would make no use of special information but, instead, would consider only the relatively permanent aspects of the capital market-those aspects which characterize equilibrium. The client's equilibrium portfolio is shaded toward those assets that are relatively favorable for him, in comparison with the average investor... The equilibrium portfolio reflects the unique circumstances of the investor but not the special information that is generated in the competitive research progress of active managers.[3]

Martin Leibowitz also has long advocated the use of normal portfolios. He has concentrated on applying normal (or "baseline") portfolios to bond management.

> Since the Baseline Portfolio structure should be determined primarily by long-range considerations, it should be relatively independent of the manager's day-to-day market judgements. Thus, the Baseline Portfolio could be defined as the most balanced possible fulfillment of all the fund's complex objectives and goals in the absence of an active market-related management activity.[2]

Water Good also has expounded the benefits of utilizing normal portfolios from a plan sponsor's perspective.

> ... we define the manager's normal portfolio as the universe of securities in which he

> prefers to operate... The fundamental characteristics of a particular universe, such as lower price-earnings ratios or high growth rates, are very likely to continue over extended periods...[1]

APPLICATIONS OF NORMAL PORTOFLIOS TO ASSET MIX DECISIONS

The widespread use of multiple managers by pension plans has left the asset mix decision largely in the hands of the plan sponsor. Previously, a single balanced manager usually made the choice of a specific allocation to stocks, bonds and cash equivalents. Under a multiple manager system the plan sponsor must choose an optimal long-run mix between these asset classes and perhaps others as well (e.g., real estate, venture capital). The plan sponsor must also decide if, and when, to deviate from its long-run asset mix.

A pension plan's long-run asset mix represents that combination of financial assets that the plan sponsor believes best meets the plan's long-run objectives. This asset mix can be viewed as reflecting the plan sponsor's investment philosophy. Appropriately then, a normal portfolio can be created that formally represents this optimal asset mix and, hence, the plan's investment style. A normal portfolio is a convenient format for describing the plan's investment policy to trustees, employees, and other interested groups. Further, temporary deviations from the normal portfolio resulting from the sponsor's specific investment strategies likewise can be described relative to the normal portfolio.

A normal portfolio also provides a benchmark for measuring the success of short-run deviations from a pension plan's long-run investment policy. By using readily available indexes of broad asset classes (e.g., Wilshire 5000 as a proxy for the stock market), the performance of the normal portfolio, or long-run investment policy, can be measured. The returns generated by each particular asset class index are multiplied by the corresponding asset class weights in the normal portfolio. This normal portfolio return can then be compared with the return calculated by multiplying the actual weights assigned to each asset class in the plan's total portfolio times the returns on each corresponding asset class index. If the plan sponsor's asset mix strategies are successful, the difference between returns on the actual asset mix portfolio and the normal portfolio should be consistently positive.

The use of a normal portfolio in measuring the effectiveness of a plan sponsor's asset mix strategies is relatively simple and is applied by many pension plans. As such, examples are not presented here. (See Good [1] for additional insights into this subject.)

APPLICATIONS OF NORMAL PORTFOLIOS TO MANAGER MONITORING

From the plan sponsor's perspective, manager monitoring is composed of three primary functions. First, the plan sponsor must select individual investment managers. Second, these managers must be positioned within the sponsor's total portfolio to fulfil, *ex ante*, certain risk-return objectives. Finally, managers' performances must be evaluated. This evaluation must consider not only whether the manager has produced acceptable rates of return, but whether the manager has met predetermined risk objectives as well. Normal portfolios can facilitate the execution of all three monitoring functions.

With respect to the manager selection function, a clear understanding of manager investment styles is crucial in a multiple manager plan. The plan sponsor presumably is searching for managers that will fill certain niches within the total portfolio. Those niches correspond to investment management styles. As discussed, normal portfolios provide a quantitative representation of manager investment styles. Thus, armed with a list of managers, their normal portfolios, and a knowledge of the particular investment styles desired, a plan sponsor can readily whittle down the initial list of candidates to a small group of managers who meet the sponsor's immediate needs. The plan sponsor can focus its attention on this group in terms of the entire regimen of interviews and questionnaires. Further, the past performance of these managers can be evaluated relative to their normal portfolios as will be discussed below.

In addition, once a manager has been hired, the existence of an agreed upon normal portfolio should facilitate a smoother relationship between the plan sponsor and manager. The normal portfolio clearly defines the manager's role in the plan sponsor's total portfolio. Thus, there is less likelihood of disagreements developing over the manager's actual strategies and results versus the plan sponsor's expectations.

With respect to the second function, that of positioning managers within the total portfolio, a plan sponsor's individual manager normal portfolios, within a particular asset class, can be aggregated. The risk characteristics of the aggregate normal portfolio provides a plan sponsor with a measure of the total portfolio's long-run risk factor exposure in that asset class. To the extent that the aggregate of the normal portfolios is over or under-exposed to a particular source of risk, the allocation of assets to the various managers can be rearranged or other actions taken to offset the unwanted biases. The goal of such changes would be to shift the total portfolio to a risk posture consistent with long-run plan objectives.

Finally, normal portfolios can be used to evaluate the value that managers add to (or subtract from) their specific investment styles. Just as is the case in an evaluation of a plan sponsor's asset mix decisions, an individual manager's normal portfolio can serve as an appropriate benchmark against which to judge its active management decisions.

Managers are frequently evaluated by plan sponsors who compare the managers' rates of return to that of some broad market index (e.g., the S&P 500 in the case of equity managers). A naive direct comparison ignores the differences in risk between the manager's portfolio and the benchmark. On the other hand, serious questions have been raised regarding risk-adjusted performance evaluation procedures using the Capital Asset Pricing Model. No satisfactory model of the relationship between systematic sources of risk and return currently exists.

Normal portfolios, however, can deal with the differences in market and extra-market risk among managers. As discussed previously, a normal portfolio represents the prominent risk characteristics that a manager tends to assume consistently. A plan sponsor expects the manager to hold a portfolio that exhibits the particular risk posture exhibited by the manager's normal portfolio. Further, the plan sponsor is (or at least should be) willing to accept the returns associated with that investment style at a given point in the market cycle. To the extent that the manager deviates from the normal portfolio for strategy purposes, the plan sponsor is justified in expecting a positive incremental return. If the manager fails to produce such a return, then it has not performed up to expectations and should be graded poorly.

NORMAL PORTFOLIO CONSTRUCTION

There exist no widely-accepted set of procedures that can guide a plan sponsor or manager in constructing a normal portfolio. However, we have constructed a number of normal portfolios for managers retained by the Minnesota State Board of Investment. Based on our experience there do appear to be a number of steps that, if followed, will greatly facilitate the consistency and quality of the normal portfolios produced.

The first step in the construction of a normal portfolio can be stated simply as "know thy manager." The more the designer is familiar with the manager's decision-making process, the more accurately the designer is able to model that process. In-person, give-and-take interviews with the manager are the best means of developing an understanding of the manager's decision-making process. The manager should be asked to describe that process in detail. The manager should provide examples of how that process is implemented. Consultants and other pension plan sponsors who have experience with the manager also may provide useful input.

The second step of the normal portfolio construction process entails examining the manager's past portfolio holdings. Portfolio data going back as far as practically possible should be obtained. Of course, the cost of collecting, loading, and verifying data must be weighed against the benefits of a larger sample size. If possible, however, at least five years of quarterly data is desirable. Using any of a number of commercially available computerized data bases, the portfolio holdings data should be analyzed in terms of factors that characterize the manager's investment style. With respect to common stock portfolios, these factors include the portfolio's R-squared (diversification), equity allocation, equity beta, price-to-book, price-to-earnings ratio, market capitalization, yield, earnings growth, leverage, etc. Access to a fundamental factor model (such as offered by Wilshire Associates or BARRA) also can be useful in categorizing a manager's distinguishing portfolio risk characteristics.

This portfolio data should be examined closely for significant levels, trends, and shifts. It is this data that provides the designer with a quantitative window on to the manager's investment style. The data should be reviewed with the manager. It should be consistent with the designer's understanding of the manager's investment style. To the extent that the data is not consistent with that understanding, the manager should be requested to provide a satisfactory explanation.

The third step in the normal portfolio construction process is to develop a list of stocks that will comprise the normal portfolio. A limited number of selection criteria should be used to screen a broad list of available securities. Capitalization is a simple but effective screening tool. Most managers have practical minimum (and sometimes maximum) market capitalization levels for stocks held in their portfolios. While these limits may be occasionally violated, stocks outside these limits rarely represent a significant proportion of their portfolios.

Removing certain industry sectors also is a useful screening criteria. Managers may consistently avoid particular industries. Stocks in these industries can be removed from consideration.

Finally, certain financial data items may be useful in screening potential candidates for inclusion in the normal portfolio. We have found such items as yield and price-to-book to be quite useful. The particular constraints placed on these financial data items will depend on the manager's investment style (e.g., value managers should tend to own higher yielding, lower price-to-book stocks).

Using the above mentioned criteria, the initial broad list of stocks can be narrowed to a group that is reflective of the type of securities that the manager will frequently hold. The manager is unlikely to hold all of these securities. Further, the manager at times may own other securities not included in the normal portfolio. Rather, the securities included in the normal portfolio, in aggregate, should characterize the manager's investment style. Concentrated holdings in particular normal portfolio securities or the ownership of issues outside of the normal portfolio represent active management decisions.

The fourth step in the normal portfolio construction process is to appropriately weight the securities included in the normal portfolio and assign a normal equity allocation position. The weighting scheme employed will vary among managers. Often though, we have found that a technique we call capitalization tiering works well. This technique is a cross between equal and capitalization weighting. It reflects the fact that while managers frequently will hold equal-weighted positions in their portfolios, they also will frequently skew their portfolios toward securities in particular capitalization ranges. Capitalization tiering is described in greater detail in the examples below.

The list of selected securities, appropriately weighted, composes the non-cash segment of the manager's normal portfolio. Its aggregate financial characteristics should resemble those of the manager's historical portfolio averages if the manager's style has been accurately modeled. At this point a normal cash allocation must be assigned. Most managers do not remain fully invested at all times. Some may hold, on average, substantial cash positions. This fact should be represented by allocating a specific cash level to the normal portfolio.

The fifth, and final, normal portfolio construction step is to backtest the normal portfolio's performance. This performance should be compared with the manager's actual portfolio returns and versus some broad benchmark, such as the market portfolio. One should not necessarily expect the normal portfolio's returns to closely track those of actual manager's portfolio. The manager may have been making significant active bets that could cause large deviations. However, there should be recognizable correlations between the two sets of returns. Further, the normal portfolio's performance relative to the market should reflect the known performance of the manager's investment style. For example, in a period when growth stocks have done well one should expect that a growth manager's normal portfolio will outperform the stock market.

NORMAL PORTFOLIO CONSTRUCTION EXAMPLES

To illustrate the normal portfolio construction process, three examples are provided below. The normal portfolios designed in these examples represent actual applications developed for common stock managers retained by the Minnesota State Board of Investment. The managers used in these examples are representative of three broad common stock investment styles usually identified by institutional investors as Value, Growth and Rotational. Each broad style category offers a unique set of investment characteristics that must be modeled, in addition to the individual idiosyncracies of the specific managers considered.

Value Manager. The investment style of Manager A is to search for companies whose stock prices are low in comparison to estimated tangible book value or companies whose P/E's are low in relation to earnings quality and expected earnings growth. The manager is contrarian and defensive by nature. The manager's portfolio returns exhibit much lower volatility than do the returns of managers pursuing more aggressive investment styles.

Manager A is not an active market timer and rarely raises cash above minimal levels.

Quarterly portfolio data was available only since third quarter 1982. This distribution of portfolio financial data through year-end 1984 is:

	R2	EQ. ALLOC.	EQ. BETA	EAR. VAR.	P/B	5 YR. EAR.	MKT CAP	SIZE RISK	YIELD	GROW RISK	FINL RISK
MEAN	.80	91	1.08	3.04	1.44	- 0.3	4,949	73	4.50	48	54
MINIMUM	.71	72	1.01	1.62	1.18	- 7.7	3,428	65	3.67	36	48
MAXIMUM	.86	99	1.14	4.41	1.62	14.9	6,687	79	6.29	57	58
STD DEV.	.04	9	.04	0.91	0.13	7.2	1,006	4	0.79	7	3
S&P 500	N.M.	N.M.	N.M.	2.12	1.76	7.1	11,237	40	4.67	46	48

Prominent average financial statistics include a high equity allocation, average equity portfolio beta and below average price-to-book ratio. On average the portfolios generally maintain a high exposure to companies with variable earnings, below average market capitalization and significant financial leverage. The manager's portfolios have a low exposure to growth-oriented companies.

To develop a list of stocks for Manager A's normal portfolio, the Wilshire 5000 first was screened for stocks with a minimum capitalization of $200 million. From this $200 million-plus capitalization list were removed stocks in industries in which Manager A cannot invest (due to SBI policies) or is unlikely to invest. These industries are Liquor, Tobacco, Utilities, Real Property, and Gold. Finally the remaining stocks were searched for those with either dividend yields greater than or equal to 5.0% or a price-to-book ratio less than or equal to 1.20. (Stocks with both data items unavailable were not eligible for inclusion in the normal portfolio.)

The weighting scheme applied to Manager A's normal portfolio was the capitalization tiering method. Based on the manager's historical portfolio data, various market capitalization ranges (or tiers) are assigned specific weights within the normal portfolio. Within each tier, all stocks included in that tier are equal-weighted. The distribution of weights and stocks among the tiers is as follows:

CAPITALIZATION ($ MILLION)	WEIGHT (PERCENT)	NUMBER OF STOCKS 12/83	6/84	12/84	6/85
200-499	25.0	151	194	166	126
500-999	20.0	88	107	86	73
1000-1999	30.0	67	65	69	44
2000-3999	15.0	29	41	35	35
4000 and above	10.0	31	31	33	31
	100.0	366	438	389	309

Because Manager A does little in the way of market timing, a small normal cash position of 5% is assigned.

The normal portfolios generated using the procedures described above resembled Manager A's historical data in terms of portfolio financial characteristics. This similarity can be observed by comparing the normal portfolio financial statistics shown below to Manager A's historical averages presented above. The price-to-book ratio and the market capitalization of the normal portfolios are below those of the average historical data.

	EQ. ALLOC.	EQ. BETA	EAR. VAR.	P/B	5 YR. EAR.	MKT CAP	SIZE RISK	YIELD	GROW RISK	FINL RISK
12/31/83	95	1.09	2.76	1.02	1.2	1,956	74	4.53	46	58
6/30/84	95	1.18	2.81	0.98	-3.2	1,972	73	4.98	43	56
12/31/84	95	1.19	2.89	1.01	-3.8	2,010	74	4.66	43	54
6/30/85	95	1.13	3.00	1.04	-5.1	2,050	73	4.28	41	54

From the perspective of portfolio performance, the normal portfolio's superior performance relative to the Wilshire 5000 points out the generally favorable environment for low price-to-book, defensive issues during the measurement period. However, the normal portfolio did not outperform the market by as much as might be expected, due largely to its poor second quarter 1984 performance. Manager A significantly outperformed its normal portfolio, indicating that it had added considerable value to its investment style through active management. Buy-hold normal portfolio returns, semi-annually rebalanced, are shown below, along with Manager A's actual returns and the Wilshire 5000's returns. The manager's returns include the impact of management fees.

QUARTER	NORMAL PORTFOLIO EQUITY ONLY	NORMAL PORTFOLIO INC. CASH	MANAGER A ACTUAL	WILSHIRE 5000
1Q 1984	- 1.3	- 1.1	- 0.6	- 4.2
2Q	- 6.5	- 6.0	- 2.8	- 2.8
3Q	10.3	9.9	9.3	9.2
4Q	3.2	3.2	4.9	1.3
1Q 1985	10.3	9.9	10.7	10.3
2Q	7.3	7.0	7.5	7.5
Cumulative	24.3	24.0	31.8	22.1

Growth Manager. Manager B pursues an investment style that emphasizes the search for companies that it expects to experience above consensus earnings gains. These earnings gains may be either cyclical or secular in nature. As we found to be the case with a number of growth managers, Manager B focuses on two types of growth companies: First, companies whose products are expected to produce high consistent unit volume growth rates; and, second, companies undergoing a positive life cycle change (e.g., new management, financial restructuring, new uses for products, etc.). The proportion of Manager B's portfolio represented by these types of companies varies over time. However, on average, the high unit growth companies tend to dominate the portfolio. Manager B is not an active market timer and will usually maintain a fully invested position.

Quarterly portfolio data analyzed covered the period from year-end 1978 through year-end 1984. (However, interim quarterly 1979 and 1980 data were not available.) The distribution of portfolio financial data through year-end 1984 is:

	R2	EQ. ALLOC.	EQ. BETA	EAR. VAR.	P/B	5 YR. EAR.	MKT CAP	SIZE RISK	YIELD	GROW RISK	FINL RISK
MEAN	.79	94	1.34	2.71	2.67	9.8	4,078	68	2.12	66	49
MINIMUM	.66	85	1.18	1.84	1.59	-1.3	854	46	1.16	52	45
MAXIMUM	.89	99	1.61	3.64	3.69	19.3	9,020	89	2.75	80	55
STD DEV.	.07	3	0.12	0.50	0.47	5.6	2,365	11	0.49	7	3
S&P 500	N.M.	N.M.	N.M.	2.05	1.69	10.1	10,085	39	5.02	47	49

Prominent average financial statistics include a consistently high equity allocation, and a high equity portfolio beta and price-to-book ratio. Further, on average the portfolios appear to maintain significant exposures to companies with variable earnings and growth orientation. The portfolios also appear to have above average exposure to small capitalization companies.

Because Manager B will invest in two quite different types to growth companies we decided to create a normal portfolio divided into two segments individually representing each type. The high unit growth segment was created by first screening the Wilshire 5000 for companies possessing three characteristics: a capitalization of $50 million or greater; a price-to-book ratio of 2.0 or greater; and, a dividend yield of 3.0% or less. From this list of companies stocks in industries in which Manager B cannot invest (due to SBI policies) or is unlikely to invest as part of its high unit growth strategy were removed. The number of excluded industries was large. Those industries remaining were Media, Drugs & Medicine, Soaps & Cosmetics, Business Machines, Electronics, Optical Photographic Equipment, Non-durables & Entertainment, Business Services, and Travel & Recreation. To reflect liquidity considerations the high unit growth segment was capitalization-weighted.

The life cycle change segment of the normal portfolio was created by screening the Wilshire 5000 for companies with the following three features: a market capitalization above $300 million; a price-to-book ratio 2.0 or less; and, a yield of 1.5% or greater. From this list were eliminated stocks in industries in which Manager B cannot invest (due to SBI policies) or is unlikely to invest as part of its life cycle change strategy. The excluded industries were Liquor, Tobacco, Drugs and Medicines, Electronics, Optical Photographic Equipment, Utilities, Rent Property, Business Services, Travel and Recreation, and Gold. The capitalization tiering method was used to weight the life cycle change segment. Because of the difficulty of identifying past weighting patterns within the life cycle change segment, a somewhat arbitrary capitalization tiering scheme used. (More information is currently being collected from

Manager B regarding its weighting tendencies in the two segments.) The distribution of weights and stocks among the life cycle tiers was as follows:

CAPITALIZATION ($ MILLION)	WEIGHT (PERCENT)	NUMBER OF STOCKS 12/83	6/84	12/84	6/85
300-499	20.0	98	116	111	97
500-999	20.0	113	128	114	111
1000-1999	20.0	85	76	92	81
2000-3999	20.0	44	56	54	58
4000 and above	20.0	41	35	38	43
	100.0	381	411	411	390

The high unit growth segment is assigned 60% of the normal portfolio's weight. The life cycle change segment is given the remaining 40% weight. Because Manager B generally maintains a fully invested equity position, a small 5% normal cash allocation is used.

The normal portfolios produced using the methods described above compared adequately to Manager B's historical financial data. The major deviations were lower normal portfolio market-related risk, market capitalization, financial risk, and a higher normal portfolio yield. The normal portfolio financial data is shown below.

	EQ. ALLOC.	EQ. BETA	EAR. VAR.	P/B	5 YR. EAR.	MKT CAP	SIZE RISK	YIELD	GROW RISK	FINL RISK
12/31/83	95	1.19	2.10	2.96	8.8	2,619	70	2.48	63	46
6/30/84	95	1.25	2.08	2.50	5.5	2,409	71	2.66	64	45
12/31/84	95	1.26	2.06	2.55	5.9	2,454	72	2.63	61	44
6/30/85	95	1.17	1.97	2.66	6.3	3,093	65	2.61	58	42

Manager B's normal portfolio's performance over the last six quarters has been mixed relative to that of the manager's actual portfolio. However, on a cumulative basis, Manager B has outperformed the normal portfolio over this period, thus adding value to its investment style. The poor market for growth stocks over this period is illustrated by the normal portfolio's poor performance relative to the Wilshire 5000. Buy-hold normal portfolio returns, semi-annually rebalanced, are shown below along with Manager B's and the Wilshire 5000's actual returns. The manager's actual return include the impact of management fees.

	NORMAL PORTFOLIO			
QUARTER	EQUITY ONLY	INC. CASH	MANAGER C ACTUAL	WILSHIRE 5000
1Q 1984	- 8.1	- 7.6	- 7.0	- 4.2
2Q	- 2.4	- 2.2	- 3.5	- 2.8
3Q	6.7	6.5	8.0	9.2
4Q	- 0.8	- 0.6	0.2	1.3
1Q 1985	10.2	9.8	7.2	10.3
2Q	6.5	6.3	9.1	7.5
Cumulative	11.4	11.6	13.6	22.1

Rotational Manager. Manager C employs an investment style that entails shifting among industry sectors based upon its outlook for the economy and the financial markets. Over a market cycle, Manager C will invest in a wide range of industries. Like most rotational managers, Manager C emphasizes liquid, medium to large capitalization stocks. However, also like many rotational managers, despite its willingness to shift from sector to sector Manager C appears to have a long-run bias toward high beta, growth oriented stocks. Manager C is an active market timer, willing to make significant shifts in and out of cash over a market cycle.

Quarterly portfolio data was available over the period year-end 1979 through year-end 1984. The distribution of portfolio financial data over this period is:

	R2	EQ. ALLOC.	EQ. BETA	EAR. VAR.	P/B	5 YR. EAR.	MKT CAP	SIZE RISK	YIELD	GROW RISK	FINL RISK
MEAN	.80	79	1.15	1.91	2.27	13.3	5,194	65	2.92	62	48
MINIMUM	.70	55	1.04	1.17	1.63	6.2	954	42	1.90	44	38
MAXIMUM	.92	96	1.30	2.42	3.06	20.4	11,416	80	3.75	70	54
STD DEV.	.05	9	0.07	0.31	0.44	4.6	3,415	10	0.55	7	4
S&P 500	N.M.	N.M.	N.M.	2.05	1.67	10.9	9,777	39	5.10	48	48

Manager C's most prominent characteristic is the varying level of almost all of its portfolio financial data over time. This variation is consistent with the manager's rotational style. Average equity allocation is relatively low. Average equity portfolio beta is above that of the market as is the price-to-book ratio and the portfolio growth orientation. Further, market capitalization is below that of the market, on average.

In constructing a rotational manager's normal portfolio, the designer must take care to reflect that the manager's style requires it to invest in a broad range of stocks. Excluding whole classes of stocks, such as in the case of Value and Growth managers, is not permissible. On the other hand, rotational managers generally do not hold portfolios that closely resemble the market, on average. The designer must therefore build a normal portfolio that reflects the manager's long-run biases, without overly constraining the portfolio.

Manager C's normal portfolio was designed by first screening the Wilshire 5000 for stocks with a minimum market capitalization of $200 million. From this $200 million-plus capitalization list were removed stocks in which the manager cannot (due to SBI policies) or is unlikely to invest. These excluded industries are limited to Liquor, Tobacco, Real Property and Gold.

Based on historical portfolio data the large list of eligible stocks was capitalization tiered. The distribution of weights and stocks among tiers is as follows:

CAPITALIZATION ($ MILLION)	WEIGHT (PERCENT)	NUMBER OF STOCKS 12/83	6/84	12/84	6/85
200-999	30.0	868	811	797	861
1000-1999	25.0	202	163	194	184
2000-3999	20.0	86	101	103	134
4000-9999	10.0	62	42	53	67
10000 and above	15.0	17	15	15	16
	100.0	1235	1132	1162	1262

In order to increase the growth orientation of the normal portfolio, without excluding whole segments of the equity market, a segment composed of growth-oriented stocks is blended into the diversified segment designed above. These growth stocks include all stocks from the diversified segment that possess a price-to-book ratio of 2.0 or greater and a yield of 3.0% or less. The effect of including these stocks twice in the normal portfolio is to increase their relative importance. The growth segment is capitalization-weighted to reflect liquidity considerations.

Based on an examination of the historical portfolio risk, the growth segment is assigned a 25% weight in the normal portfolio. The diversified portfolio is given an 75% weight. Further, the normal portfolio was assigned a 20% cash position to reflect Manager C's moderate market timing strategies.

Given the difficulty of attempting to model Manager C's broad rotational style without overly constraining the portfolio, the resulting normal portfolios bear a surprising close resemblance to the manager's historical portfolio data. The only major difference is that the normal portfolio has a slightly lower growth orientation.

	EQ. ALLOC.	EQ. BETA	EAR. VAR.	P/B	5 YR. EAR.	MKT CAP	SIZE RISK	YIELD	GROW RISK	FINL RISK
12/31/83	80	1.14	2.27	2.40	9.0	4,414	64	3.37	57	49
6/30/84	80	1.17	2.26	2.08	5.8	4,074	64	3.79	56	49
12/31/84	80	1.18	2.26	2.16	5.7	4,053	65	3.59	54	48
6/30/85	80	1.14	2.18	2.29	5.6	4,412	62	3.24	53	47

Over the last six quarters, Manager C's normal portfolio has underperformed the market, primarily due to its small capitalization growth bias. Over this period Manager C has cumulatively outperformed the normal portfolio, although quarterly results varied widely. Thus, the manager added value to its investment style over the period of analysis. Buy-hold normal portfolio returns, rebalanced semi-annually, are shown below along with Manager C's and the Wilshire 5000's actual returns. The manager's actual returns include the impact of management fees.

QUARTER	NORMAL PORTFOLIO EQUITY ONLY	INC. CASH	MANAGER C ACTUAL	WILSHIRE 5000
1Q 1984	- 5.9	- 4.2	- 4.9	- 4.2
2Q	- 2.3	- 1.3	- 2.8	- 2.8
3Q	8.3	7.2	10.7	9.2
4Q	0.4	0.8	5.7	1.3
1Q 1985	10.6	8.9	6.4	10.3
2Q	7.9	6.7	6.4	7.5
Cumulative	19.3	18.7	22.4	22.1

NORMAL PORTFOLIO CAVEATS

Normal portfolios have much to offer to the plan sponsor administering today's complex pension plans. However, the practical problems of normal portfolio construction are not trivial. Most of the problems result from the ad hoc design of normal portfolios. Unfortunately, their construction currently represents more of an art form than a science. Two individuals designing a normal portfolio for the same manager are likely to arrive at two (perhaps considerably) different results.

There are two reasons for this problem. First is the fact that it is difficult to specify, particularly in quantitative terms, a manager's investment style. The investment decision rules that a manager utilizes usually will possess a high degree of subjectivity. This subjectivity is difficult to model. Persons attempting to construct a normal portfolio may differ in terms of how they interpret quantitatively the manager's decision rules.

The second reason is that a manager's investment style may not be highly stable over time. Investment management is a dynamic process. Pinning it down to a relatively static set of quantitative decisions rules is like hitting a moving target. The less stable is a manager's investment style, the less useful is the manager's past portfolio data in discerning prominent risk exposures. Uncertainty as to manager's investment style will introduce noise into the modeling process. This will lead persons designing a normal portfolio to develop different conclusions.

Beyond these design problems is the difficulty associated with permitting the normal portfolio concept to "overintellectualize" the manager monitoring process. Normal portfolios certainly are not a panacea from the perspective of the plan sponsor. It is too easy to imbue the concept with a sense of precision that is unrealistic. The field of portfolio management is constantly evolving. Normal portfolios simply represent part of that evolution. They should be viewed as another tool available to plan sponsor, along-side existing analytical techniques and plain common sense.

Finally, normal portfolios are costly to produce. Despite the widespread availability of computerized databases, screening through thousands of securities and their associated financial data can be very expensive. Further, the time required to construct individual manager normal portfolios is considerable and adds a large human cost factor as well. In addition, the periodic rebalancing of normal portfolios, while by no means as costly as the initial construction, is nevertheless a recurring expense.

A manager can more efficiently produce a normal portfolio and distribute it to a number of plan sponsors, than can plan sponsors separately construct normal portfolios for their many managers. Unfortunately, few managers have yet been willing to design normal portfolios for themselves, leaving the task in the hands of plan sponsors and consultants.

REFERENCES

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2. Leibowitz, Martin L., Total Return Management, Salomon Brothers, 1979.

3. Rosenberg, Barr, "The Capital Asset Pricing Model and the Market Model," Journal of Portfolio Management, Winter, 1981.

AI

STATE OF MINNESOTA

STATE BOARD OF INVESTMENT

EQUITY INVESTMENT MANAGER STATUS REPORT: 12/31/84 - 6/30/85

($ millions)

	EQUITY ASSETS UNDER MANAGEMENT				SECOND QUARTER 1985							
	3/31/85		6/30/85		Gained		Lost					
nvestment anager	# of Accts	Asset Size	# of Accts	Asset Size	# of Accts	Asset Size	# of Accts	Asset Size	Professional Staff Turnover	Organizational Changes	Investment Style Changes	Comments
red Alger	59	$1,645	77	$2,358	4	$ 44.0	3	$ 96.9	-	-	-	-
lliance Capital anagement inneapolis)	43	$1,095	46	1,819	1	140.0	1	15.6	-	-	-	-
entel, Goodman apital Management	5	$ 104	25	800	7	135.0	-	-	-	-	-	-
K Capital Corp.	5	$ 160	18	323	-	-	1	13.5	Frederick Prunier, analyst, joined the firm.	-	-	-
A Asset anagement	126	$4,800	85	3,918	1	2.3	8	216.7	A. Lawrence Groo, portfolio manager/analyst, left firm.	-	-	-
ellman Jordan anagement	22	$ 440	33	969	1	75.0	-	-	-	-	-	-
S Advisory Group	81	$3,361	74	3,210	-	-	4	73.3	Anthony J. Basile, responsible for fixed income investments, left firm. Edward Labenski assumed his responsibilities.	-	-	-
IDS Equity Advisors			48	2,423	1	0.0	2	38.5		-	-	-
nvestment Advisers, nc.	79	$1,001	90	1,617	1	12.5	-	-	-	-	-	-
isher & Co.	29	$ 389	42	681	3	103.4	-	-	Dennis Trittin, analyst, joined firm.	-	-	-
vergreen Total Return			23	194								
vergreen Fund			18	676								
vergreen Limited			1	9								

EAI

STATE OF MINNESOTA

STATE BOARD OF INVESTMENT

EQUITY INVESTMENT MANAGER STATUS REPORT: 12/31/84 - 6/30/85

($ millions)

	EQUITY ASSETS UNDER MANAGEMENT				SECOND QUARTER 1985							
	3/31/83		6/30/85		Gained		Lost					
stment ...er	# of Accts	Asset Size	# of Accts	Asset Size	# of Accts	Asset Size	# of Accts	Asset Size	Professional Staff Turnover	Organizational Changes	Investment Style Changes	Comments
...is-Sayles & Co. ...ital Growth ...gement)	12	$ 540	12	$ 477	1	$ NA	-	$ -	-	-	-	-
...st Bank	3	49	3	105	-	-	-	-	-	-	-	-
...ell & Reed ...t Management	6	471	9	671	-	-	-	-	John Engelen, analyst, joined firm.	-	-	-

EAI

STATE OF MINNESOTA

STATE BOARD OF INVESTMENT

FIXED INCOME INVESTMENT MANAGER STATUS REPORT: 12/31/84 - 6/30/85

($ millions)

Investment Manager	EQUITY ASSETS UNDER MANAGEMENT 6/30/84 # of Accts	Asset Size	6/30/85 # of Accts	Asset Size	SECOND QUARTER 1985 Gained # of Accts	Asset Size	Lost # of Accts	Asset Size	Professional Staff Turnover	Organizational Changes	Investment Style Changes	Comments
Investment Advisers, Inc.	48	$ 275	49	$ 364	-	$ -	-	$ -	-	-	-	-
Lehman Management Co. Inc.	36	3,000	43	4,000	5	280	-	-	Francis L. Fraenkel to chairman and chief executive officer. C. Charles Hetzel to vice chairman. Coleman M. Brandt to president.	-	-	-
Miller, Anderson & Sherrerd	37	2,184	49	3,524	2	15	-	-	-	-	-	-
Morgan Stanley	29	1,040	47	2,311	9	285	-	-	-	-	-	-
Norwest Bank	5	170	5	260	-	-	-	-	-	-	-	-
Western Asset Mgt.	30	1,599	33	2,100	2	266	-	-	-	-	-	-

Tab F

EXECUTIVE DIRECTOR
HOWARD J. BICKER

STATE OF MINNESOTA
STATE BOARD OF INVESTMENT

Room 105, MEA Building
55 Sherburne Avenue
Saint Paul 55155
296-3328

September 16, 1985

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

FROM: Alternative Investment Committee

SUBJECT: Alternative Investment Strategy Recommendations

As a strategy to increase overall portfolio diversification and provide a hedge against inflation, the Investment Advisory Council's Asset Allocation Committee has recommended that 15% or $525 million of the $3.5 billion Basic Retirement Fund be 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.

STRATEGY FOR INVESTMENTS

VENTURE CAPITAL

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. Considerable progress has been made towards meeting the SBI's venture capital asset allocation target.

With the considerable diversification provided by the SBI's current venture capital portfolio, the Board has expressed a desire to expand its investments in Minnesota venture capital. The Alternative Investment Committee is therefore recommending the Board approve an investment of up to $10 million or 20% of a proposed $25-50 million Minnesota venture capital investment fund being formed by Investment Advisors, Inc. A subsidiary of Investment Advisors would be the general partner of the Fund, with limited partners to include the SBI (up to 20% of the Fund's capitalization) and at least four other institutional investors. This recommendation is subject to final negotiation and review by the Attorney General's office.

Important features of this Fund include:

- The Fund will invest both in venture capital limited partnerships formed in Minnesota and directly in operating companies within the State. Investments will be diversified by stage of corporate development and industry.

- Investments in venture capital limited partnerships will focus on smaller funds, under approximately $50 million in size. These funds generally have shorter track records, a more specialized investment focus, and general partners with less experience working together as a single organization. Because of these features, the Partnership formed by IAI, with its hands-on experience in the venture capital industry, will be better suited to analyze these opportunities. The SBI staff will continue to analyze the larger, more experienced and diversified funds for investment directly by the Board. By consolidating small fund investments into a single investment, the proposed IAI Fund would provide a more practical and meaningful way for the SBI to invest in these potentially attractive, Minnesota venture capital limited partnerships.

- The general partners of the Fund will include Noel P. Rahn, Richard C. Pflager and Mitchell Dann, all experienced venture capital managers. The general partners are also responsible for the management of IAI Venture Partners, a Minnesota Limited Partnership that is similar in nature to the proposed Fund.

The Alternative Investment Committee also recommends a $50 million investment in Kohlberg, Kravis and Roberts (KKR) 1986 Fund. The SBI has a $25 million investment in KKR's 1984 Fund. Other than an increase in size, the 1986 Fund will be essentially similar to the 1984 Fund.

The Alternative Investment Committee and staff have conducted extensive reviews of both Investment Advisors and KKR, including in-depth interviews with each manager at SBI offices.

REAL ESTATE

The real estate investment strategy involves three steps. The first step calls for investment of 30-40% of the real estate portfolio in diversified open-end commingled funds. The second step calls for investment of 30-40% of the real estate portfolio in diversified closed-end commingled funds. The third step calls for investment of 20-30% of the real estate portfolio in less diversified, more focused (specialty) commingled funds. Considerable progress has been made towards meeting the SBI's real estate asset allocation target.

With substantial diversification provided by the SBI's current real estate portfolio, the Board has expressed a desire to expand its investments in Minnesota real estate. The Alternative Investment Committee has therefore solicited proposals from a number of real estate organizations within Minnesota and throughout the country to manage a proposed Minnesota-only real estate fund. The Committee received six written proposals. After reviewing the proposals and after interviews with potential managers, the Alternative Investment Committee recommends the Board approve Washington Square Capital/Union Bank and Trust for an investment of $10-20 million and First Asset Realty Advisors for an investment of $10-20 million. Both recommendations are subject to final negotiation and Attorney General approval.

Washington Square Capital, a wholly-owned subsidiary of Northwestern National Life Insurance Company, and Union Bank and Trust have joined in the effort to form and manage a $50-100 million Minnesota-only closed-end commingled real estate fund. The Fund will be made up largely of developmental equity real estate investments.

First Asset Realty Advisors, a wholly-owned subsidiary of First Bank Minneapolis, will form and manage a $50-100 million Minnesota-only closed-end commingled real estate fund that will invest primarily in existing, fully developed real estate.

In addition to the above investments, the Alternative Investment Committee recommends the Board approve a follow-on investment of $30 million in Heitman Group Trust II, a $200 million closed-end real estate fund. The SBI has a $20 million investment with Heitman Group Trust I. Other than an increase in size, Group Trust II will be essentially similar to Group Trust I.

For all of the above recommended real estate investments, the Alternative Investment Committee and staff have conducted extensive reviews, including interviews with each manager at SBI offices.

RESOURCE PROGRAMS

The strategy for resource investments requires that investments be made over a three to five year period in oil and gas partnerships that focus investment in conservative, lower risk type investments (i.e., proved producing properties and royalties diversified geographically and/or geologically). In addition, investments should be structured to "trade-off" or minimize tax benefits in order to enhance the SBI's overall rate of return. Substantial progress is being made towards meeting the Board's resource asset allocation target.

The Alternative Investment Committee is recommending the Board approve a $23 million investment with Apache to finance Apache's acquisition of certain developed and undeveloped oil and gas properties. Investment terms and conditions will be similar to those of the SBI's existing investment with Apache, whereby the SBI receives a 10% current return and a share of the project revenues. The Alternative Investment Committee and staff have conducted an extensive review of Apache, including interviews of key Apache staff members.

ALTERNATIVE EQUITY INVESTMENTS

FUND	COMMITMENT	FUNDED
REAL ESTATE:		
Equitable	$ 40.0 Million	$ 40.0 Million
Aetna	40.0	40.0
Prudential	40.0	40.0
RREEF	75.0	36.0
Heitman I	20.0	20.0
Heitman II*	30.0	0.0
TCW	40.0	20.0
State Street	20.0	5.0
Washington Square*	20.0	0.0
First Asset*	20.0	0.0
Total:	$345.0 Million	$201.0 Million

Target: ($350 Million or 10% of Basic Retirement Funds)

FUND	COMMITMENT	FUNDED
VENTURE CAPITAL:		
Norwest	$10.0 Million	$7.0 Million
KKR I	25.0	19.4
KKR II*	50.0	0.0
Summit	10.0	5.0
First Century	10.0	2.5
DSV IV	10.0	4.0
Matrix	10.0	2.5
Inman/Bowman	7.5	2.0
Allied	5.0	1.6
Superior Venture*	10.0	0.0
Total:	$147.5 Million	$44.0 Million

Target: ($87.5 Million or 2.5% of Basic Retirement Funds)

FUND	COMMITMENT	FUNDED
RESOURCE:		
Amgo I	$15.0 Million	$15.0 Million
Amgo II	7.0	7.0
Apache I	22.5	0.3
Apache II*	23.0	19.0
Total:	$67.5 Million	$41.3 Million

Target: ($87.5 Million or 2.5% of Basic Retirement Funds)

* Indicates managers currently being recommended to the SBI for commitment and funding.

VENTURE CAPITAL MANAGER INFORMATION

I. BACKGROUND

FUND MANAGER:	Investment Advisors, Inc.
TYPE OF FUND:	$25-50 Million Limited Partnership
INTERVIEW DATE:	September 18, 1985
REPRESENTING MANAGER:	Mitchell Dann Noel Rahn
MANAGER CONTACT:	Mitchell Dann
ADDRESS:	1100 Dain Tower, Minneapolis, MN
TELEPHONE:	(612) 371-7740

I. ORGANIZATION AND STAFF

Superior Venture Partners (SVP) will be managed by the General Partner, Superior Venture Managers L.P., a Minnesota Limited Partnership. The Partners of Superior Venture Managers L.P. are Noel P. Rahn, Richard C. Pflager and Mitchell Dann, all experienced venture capital managers and senior officers of Investment Advisors, Inc. (IAI). The General Partners of SVP are also responsible for the management of IAI Venture Partners, a $50 million Minnesota Limited Partnership that is similar in nature to SVP.

IAI is a wholly-owned subsidiary of Inter-Regional Financial Group, Inc., a NYSE listed corporation. IAI has been a registered investment advisor since 1947 and manages over $2.5 billion in assets for profit sharing, pension, endowment and foundation accounts, both national and regional.

In addition to Mr. Rahn, Mr. Pflager and Mr. Dann, IAI's full investment staff will be available to be used, whenever necessary, by the Fund. Also it is the intention of Investment Advisors to hire an additional, full time venture capital staff member.

III. INVESTMENT STRATEGY

Two types of investments will be used for SVP:

- SVP will invest in other venture capital limited partnerships who in turn will invest directly into operating company's in accordance with their investment strategy. The investments in other venture capital limited partnerships will focus on smaller funds, under approximately $50 million in size. These partnerships will be based in Minnesota. The General Partner of SVP will be solely responsible for selecting the partnership investments.

The Partnership portfolio will diversify across a set of criterion to yield a balanced portfolio of venture capital limited partnerships ranging from seed and early stage to more balanced funds and may include leveraged buy-out funds. The Fund will not invest more than 25% of its committed capital in any one venture capital limited partnership.

- SVP will also invest directly into operating companies satisfying rigorous investment criteria based on thorough fundamental and rate of return analysis. Investments will be made in operating companies that are based in Minnesota. The General Partner will be solely responsible for investment decisions.

  The Partnership will invest over a broad range of industries and in various stages of development. Potential investments will range from early stage, including conceptual start-ups and technology transfers to expansion financings and leveraged buy-outs.

The Fund expects the majority of investments to be direct investments (at least 65% of the Fund but no more than 85%) and the balance to be partnership investments (at least 15% but no more than 35%).

IV. INVESTMENT AGREEMENT

FEES AND CARRIED INTEREST

The General Partners will receive an annual fee of 1.25% annually of the greater of committed capital or net asset value of the Fund's assets invested in or designated to be invested in venture capital limited partnerships and 2.5% annually of the Funds committed capital designated for direct investment. The management fee will be adjusted annually until 1991 by the consumer price index.

Profits from direct investments will be allocated 80% to Limited Partners based on capital contribution and 20% to the General Partner. Profits from Partnership investments will be allocated to Limited Partners based on capital contributions. No carried interest will accrue to the General Partner on Partnership investments. No distribution of the General Partner's carried interest on direct investments will be made until all Partners have received distributions in an amount equal to their capital contributions to the Fund.

TERM

Eleven years from the date of the initial capital contributions to the Fund, subject to extensions by the General Partner for not more than four one year periods. With the consent of the General Partner and the holders of 75% of the partnership interests, the term of the Partnership may be further extended, but not beyond a total term of 20 years, or may be terminated at any time.

TAKEDOWNS

Limited Partners of the Fund will be required to make 25% of their capital contribution upon the initial closing of the fund. Subsequent takedowns are not expected to occur in less than four month time intervals. Superior Venture Managers anticipates drawing down the majority of the capital contributions within 48 months, of the initial closing. Limited Partners will receive 30 days notice prior to subsequent takedowns.

REAL ESTATE MANAGER INFORMATION

I. BACKGROUND DATA

FUND MANAGER:	Washington Square Capital/Union Bank and Trust
TYPE OF FUND:	$50-100 Million Closed End Commingled Fund
INTERVIEW DATE:	September 11, 1985
REPRESENTING MANAGER:	Steve Wishart, Gary Kallsen, Bob Richey, Mike Christiansen
MANAGER CONTACT:	Bob Richey
ADDRESS:	512 Nicollet Avenue, Minneapolis, MN
TELEPHONE:	(612) 342-3401

II. ORGANIZATION AND STAFF

Washington Square Capital (WSC), a wholly owned subsidiary of Northwestern National Life Insurance Company (NWNL), and Union Bank and Trust Company have joined in the effort to sponsor a Minnesota only closed-end commingled real estate fund hereafter referred to as MINN RE.

NWNL currently manages $130mm in real estate assets with 30 years of experience in real estate investing. Also NWNL has $1.2 billion in real estate mortgages with 75 years experience. Union Bank and Trust Company manages $75mm of tax exempt employee benefit assets with $30mm of these currently in construction loans.

The professionals employed by Washington Square Capital include ten analysts with an average experience level of over 10 years. Also, the staff includes two professional property managers who are actively managing property, as well as overseeing hired property managers. In addition, there are two debt portfolio managers and one equity portfolio manager on staff. Their function is to review the structure and quality of each suggested investment and agree to allow the investment in or out of their portfolios. The portfolio managers are also responsible for managing the overall portfolio. Washington Square Capital's mortgage and real estate area also includes a senior business manager as well as two real estate attorneys and the clerical staff needed to support all the above professionals.

III. INVESTMENT STRATEGY

The composition of the MINN RE Fund will be made up of largely developmental equity investments in real estate. The Fund will be comprised of developmental properties to the 80% to 90% level with the remaining dollars available for purchases of existing completed real estate projects. The developmental portion of the Fund will be comprised of the following two structures:

- The first type of developmental real estate structure will be the hybrid structure of participating mortgages. These will be structured so that the Fund would make a below market rate mortgage and in return receive the rights to 50% of the cash flow and 50% of the gains on sale from the property.

- The second structure used in the developmental portion of the Fund will be a true joint venture where the Fund and a developer will form a partnership on a 50%-50% basis. The Fund will be the limited partner and the developer will be the general partner. Leverage would comprise approximately 70% of each project placed in this joint venture section of the Fund.

The size of any one investment within the Fund will be limited to no more than 10% of the ultimate total dollars to be invested in this Fund. In addition, all of the following property types will be included; office buildings, including medical offices, office showrooms, and standard office buildings. Other property types suggested to be in the Fund would include industrial properties, apartment projects, neighborhood shopping centers, with the Fund being open to a possible joint venture in either a hotel or retail warehouses. No one property type will have any larger than a 1/3 position in the total dollars in the Fund. Term of the Fund will be 12 years. Where possible, the Fund will be providing the construction financing in an effort to enhance the short term yield.

IV. INVESTMENT PROCESS

A staff of ten analysts review investment opportunities and third party appraisals that accompany investment packages worked up by mortgage bankers, among others. The underwriting process on a developmental property takes approximately one month. The next step is for one of these ten analysts to review an opportunity that he would recommend with the Portfolio Manager and he must receive the Portfolio Manager's approval before he then can take this investment to the formal Investment Committee. This Committee meets once a week and is comprised of the senior officers of Washington Square Capital, namely, Steven Wishart, Susan Ecker, Harold Leiferman and Bartley Foster. Also on this Investment committee are the Chairman of the Board, John Pearson, and the President, John Turner, of Northwestern National Life Insurance Company. After receiving the Investment Committee's approval, the legal staff of Washington Square Capital draws up a participating mortgage document and/or joint venture partnership agreement that is then signed by all parties, which allows construction to begin.

The ongoing management of the property is handled by a hired property manager. Quite often the developer-general partner provides this service. Also, Washington Square Capital has two full time professional property managers that will act as overseers of the management and reporting functions for each of the properties to be in MINN RE.

The procedure for disposing of any property is similar to the acquisition process. The investments within the portfolio are analyzed yearly to decide to hold and manage the property or sell the property.

V. INVESTMENT AGREEMENT

FEES

A. 1.15% per year investment advisory fee charged quarterly on the net asset value of the fund plus a 10% incentive fee on any real rate of return in excess of 10% annually. Real rate of return is defined as the annualized yield above the annualized GNP Deflator. This incentive fee would be calculated and paid at the termination of the fund.

ALLOCATION PROCEDURE

The allocation procedures for real estate investments within MINNN RE will work as follows:

A. The portfolio manager would determine which of his equity funds may qualify under the investment standards set up for each of the funds that he is responsible for. If it is determined that more than one of his equity portfolios could benefit from the individual real estate project, he than goes to step two.

B. Step two is a dollars and days formula that simply takes the number of dollars needed to fill out any one particular fund times the number of days that has been since an investment has been placed into the fund. The resulting number would indicate which of two equally receptive funds would receive that particular investment at that point in time.

REAL ESTATE MANAGER INFORMATION

I. BACKGROUND DATA

FUND MANAGER:	First Asset Realty Advisors (FARA)
TYPE OF FUND:	$50-100 Million Closed-end Commingled Fund
INTERVIEW DATE:	September 11, 1985
REPRESENTING MANAGER:	Chuck Ingwalson Mike Kelly
MANAGER CONTACT:	Chuck Ingwalson
ADDRESS:	First Bank Place, Minneapolis, MN 55480
TELEPHONE:	(612) 370-4729

II. ORGANIZATION AND STAFF

Management of the First Minnesota Real Estate Fund (FMREF) will be provided by First Asset Realty Advisors (FARA), a wholly-owned subsidiary of First Bank Minneapolis.

FARA was organized in 1981 and offers asset management services in the field of U.S. real estate to institutional investors. FARA's officers and Board members are real estate professionals, entrepreneurs, and corporate executives experienced in the various disciplines of real estate investment and financial management. The Board will take an active part in managing FMREF; including selection and disposition of real estate investments, subject to approval by the Bank as fund trustee. FARA currently manages First Asset Real Estate Equity Fund (FAREEF), an open-end commingled real estate fund for qualified pension plans. FAREEF was established in September 1981 with initial cash contributions of $17 million. FAREEF's present assets total just in excess of $50 million.

The Center Companies is Minnesota based and the 10th largest property management firm in the U.S., with over 1,000 employees nationwide, including 100 located in their Minneapolis corporate headquarters. The Center Companies will provide acquisition and property management services for FMREF which will include locating, screening, and analyzing properties as well as negotiating contracts.

The members of FARA's Board of Directors are:

Austin H. Evans, Private Real Estate Investor, Minneapolis, Minnesota.

James A. Graaskamp, Chairman of the Department of Real Estate and Urban Land Economics, School of Business, University of Wisconsin, Madison, Wisconsin.

Russell W. Lindquist, Senior Partner, Dorsey & Whitney, Minneapolis, Minnesota.

Kenneth N. Stensby, President of United Properties, Minneapolis, Minnesota.

Dennis E. Evans, Vice Chairman, First Bank System, Chairman and Chief Executive Officer, Metropolitan Division, First Bank System and Chairman, First Bank Minneapolis and First Bank St. Paul.

Richard W. Jensen, Managing Director of First Asset Management, First Bank Minneapolis.

Advisors to FARA's Board of Directors are:

Robert P. Boblett, Chairman of Robert Boblett Associates, Inc., Minneapolis, Minnesota.

Michael F. Kelly, President and Chief Executive Officer of The Center Companies, Minneapolis, Minnesota.

Officers of FARA are:

Dennis G. Gethmann, Director of Acquisitions for FARA and Vice President and Manager of Financial Services of The Center Companies.

Charles S. Ingwalson, President of FARA.

III. INVESTMENT STRATEGY

FARA will apply its "value added" investment strategy in investing for FMREF. More precisely, FARA will seek out those properties where, through the skills of FARA's Board, the application of The Center Companies property management skills and the use of additional capital, the value of the asset can be enhanced. FARA is currently emphasizing the purchase and subsequent redirection of older shopping centers in its FAREEF account.

This same strategy can be successfully applied to FMREF's portfolio. This investment approach is also particularly appropriate in today's low inflation environment and can be applied to all three property types targeted for FMREF, i.e., office buildings, office/warehouse, and retail.

Up to 25% of FMREF may also be invested in new development and/or joint ventures. These investments, if made, would be done on a "take-out" basis only and would not subject the Fund to risks during the construction process.

Primary investment structure utilized by the Fund will be fee ownership. Aggregate debt will be limited to 25% of the aggregate Fund value and to 50% of any single investment. Individual investments may range in size from $5-15 million. Term of the Fund will be ten years.

IV. INVESTMENT PROCESS

Implementation of FMREF's investment program, within the guidelines established by FARA's Board of Directors, will be carried out by The Center Companies (TCC) and its financial Services Department. TCC accepts prospective investment offerings from both owner/developers and commercial real estate brokers. Offerings that meet FMREF's investment guidelines and pass TCC's due diligence investigation are presented to FARA's Board of Directors for review and final purchase decision. In addition, TCC will provide the property management services for FMREF.

Properties in the FMREF portfolio will be continually reviewed as to their appropriateness for sale. Sale decisions will be made on the basis of maximizing the investment returns to FMREF. FARA's Board of Directors will make the final decision regarding disposition of any asset, including establishing a sale price. TCC will provide disposition services, include preparation of any offering package, marketing, and negotiations.

V. INVESTMENT AGREEMENT

FEES

The following fee structure will be paid to FARA for the real estate investment services provided to the Fund:

Acquisition Fees:	1% of each properties' total purchase price when acquired for the Fund.
Portfolio Management Fees:	1% annually of total asset value up to $50,000,000.
	.75% annually of total asset value from $50,000,000 to $75,000,000.
	.50% annually of total asset value from $75,000,000 to $100,000,000.
Disposition Fees:	1% of each properties' total disposition price at the time of sale.

ALLOCATION PROCEDURE

At the present time FARA is advisor to two commingled funds, First Asset Real Estate equity Fund (FAREEF) and the Common Real Estate Equity Fund (CREEF), both of which have investments in the State of Minnesota.

However, neither fund presents an allocation conflict with FMREF. FAREEF is not currently seeking additional Minnesota investments due to portfolio considerations and CREEF's size limits it to investments in properties in the $1 million to $3 million price range.

ALTERNATIVE INVESTMENT MANAGER INFORMATION
June 30, 1985

FIRM NAME: Aetna Life and Casualty Company
FUND NAME: Real Estate Separate Account (RESA)
CONTACT: Tom Anathan
ACCOUNT INCEPTION: 10/81
SBI COMMITMENT: $40 Million
SBI CURRENT INVESTMENT: $40 Million

INVESTMENT DESCRIPTION: RESA is an open-end commingled real estate fund formed in January, 1978. The Fund invests primarily in existing equity real estate diversified by location and property type. On-site property management is primarily contracted to outside firms or conducted by a joint venture partner. The Fund has no termination date, although investors have the option to withdraw all or a portion of their investment.

RESA CURRENT PORTFOLIO COMPOSITION

PROPERTY MARKET VALUE	# OF PROPERTIES	LOCATION	%	PROPERTY TYPE	%
$1.3 Billion	127	East	18%	Office	43%
		Midwest	10	Retail	20
		South	19	Industrial	29
		West	53	Hotel	7
				Residential	1

INVESTMENT ACTIVITY-LAST QUARTER

ACQUISITIONS $	#	DISPOSITIONS $	#
$19.3 M	1	$7.8 M	2

UNIT VALUE RETURNS

	LAST QUARTER	LAST FOUR QUARTERS	FIVE YEAR AVERAGE
RESA	1.6%	9.3%	13.3%
EAI Composite Median	2.7	12.4	13.4
CPI (Inflation)	1.1	3.7	5.4

STAFF COMMENTS: For the year ending June 30, 1985, Aetna's 9.3% total rate of return was composed of 8.6% income and 0.7% appreciation. This return outperformed the inflation rate and underperformed the EAI Real Estate Composite Fund Median. During the quarter, the Fund invested in an office development in San Antonio through a mortgage loan which will convert to a partnership interest and permanent loan. The Fund also sold two small industrial warehouses. The Fund's cash position remained at 8.8%.

ALTERNATIVE INVESTMENT MANAGER INFORMATION
June 30, 1985

FIRM NAME:	Equitable Real Estate Group, Inc.
FUND NAME:	Separate Account #8
CONTACT:	Harry Pierandri
ACCOUNT INCEPTION:	10/81
SBI COMMITMENT:	$40 Million
SBI CURRENT INVESTMENT:	$40 Million

INVESTMENT DESCRIPTION: Equitable Separate Account #8 is an open-end commingled real estate fund formed in August 1973. The Fund invests primarily in existing equity real estate diversified by location and property type. On-site property management is primarily contracted to outside firms or conducted by joint venture partners. The Fund has no termination date although investors have the option of withdrawing all or a portion of their investment.

SEPARATE ACCOUNT #8 CURRENT PORTFOLIO COMPOSITION

PROPERTY MARKET VALUE	# OF PROPERTIES	LOCATION %		PROPERTY TYPE %	
$2.4 Billion	232	East	27%	Office	41%
		Midwest	20	Retail	35
		South	31	Industrial	12
		West	22	Hotel	10
				Residential	0
				Other	2

INVESTMENT ACTIVITY-LAST QUARTER

ACQUISITIONS $	ACQUISITIONS #	DISPOSITIONS $	DISPOSITIONS #
$19.7 M	1	$2.4 M	2

UNIT VALUE RETURNS

	LAST QUARTER	LAST FOUR QUARTERS	FIVE YEAR AVERAGE
Separate Account #8	2.9%	12.5%	13.9%
EAI Composite Median	2.7	12.4	13.4
CPI (Inflation)	1.1	3.7	5.4

STAFF COMMENTS: For the year ending June 30, 1985, Equitable's 12.5% total rate of return was composed of 7.2% income and 5.3% appreciation. The 12.5% return outperformed the inflation rate and the EAI Real Estate Composite Fund Median. Similar to the last several quarters, the volume of acquisitions remained low, with the purchase of an office building in Maryland. During the quarter the Fund commited to buy an industrial property in California and an office building in Virginia. The Fund sold two small industrial properties after an average 6 year holding period. The cash component decreased from 10.9% at the end of the previous quarter to 8.6%.

ALTERNATIVE INVESTMENT MANAGER INFORMATION
June 30, 1985

FIRM NAME:	Prudential Investment Management Corporation
FUND NAME:	PRISA I
CONTACT:	Don Davis
ACCOUNT INCEPTION:	9/81
SBI COMMITMENT:	$40 Million
SBI CURRENT INVESTMENT:	$40 Million

INVESTMENT DESCRIPTION: PRISA I is an open-end commingled real estate fund formed in July 1970. PRISA invests primarily in existing properties diversified by location and property type. On-site property management is primarily contracted to outside firms or is conducted by joint venture partners. The Fund has no termination date, although investors have the option quarterly to withdraw a portion or all of their investment.

PRISA CURRENT PORTFOLIO COMPOSITION

PROPERTY MARKET VALUE	# OF PROPERTIES	LOCATION	%	PROPERTY TYPE	%
$5.1 Billion	455	East	25%	Office	53%
		Midwest	14	Retail	18
		South	21	Industrial	15
		West	40	Hotel	8
				Residential	4
				Other	2

INVESTMENT ACTIVITY-LAST QUARTER

ACQUISITIONS $	#	DISPOSITIONS $	#
$66.7 M	1	$1.8 M	1

UNIT VALUE RETURNS

	LAST QUARTER	LAST FOUR QUARTERS	FIVE YEAR AVERAGE
PRISA	1.7%	10.8%	12.2%
EAI Composite Median	2.7	12.4	13.4
CPI (Inflation)	1.1	3.7	5.4

STAFF COMMENTS: For the year ending June 30, 1985, PRISA's 10.8% total rate of return was composed of 7.6% income and 3.2% appreciation. This return outperformed the inflation rate and underperformed the EAI Real Estate Composite Fund Median. During the quarter, PRISA purchased an office building in Virginia, and sold a small industrial property after an 8 year holding period. PRISA's cash component declined from 4.9% at the end of the previous quarter to 1.5%.

ALTERNATIVE INVESTMENT MANAGER INFORMATION
June 30, 1985

FIRM NAME:	Rosenberg Real Estate Equity Funds (RREEF)
FUND NAME:	RREEF USA III
CONTACT:	Paul Sack
ACCOUNT INCEPTION:	4/25/84
SBI COMMITMENT:	$75 Million
SBI CURRENT INVESTMENT:	$31.0 Million

INVESTMENT DESCRIPTION: RREEF USA III is a $773 million commingled real estate Group Trust. Term of the Fund is twelve years with optional extensions. The Fund is investing primarily in unleveraged, wholly-owned, equity real estate diversified by location and property type. On-site property management will be conducted by RREEF employees.

RREEF USA III INVESTMENTS (AT COST)				CASH RETURNS TO SBI		
CURRENT TOTAL #	CURRENT TOTAL $	LATEST QUARTER #	LATEST QUARTER $	LATEST QUARTER	LAST FOUR QUARTERS	CUMULATIVE SINCE INCEPTION
6	$304.8 Million	1	$67.3 Million	$0	$132,357	$132,357

SUMMARY DESCRIPTION OF CURRENT PORTFOLIO
(% OF TOTAL FUND COST)

LOCATION	%	STAGE OF DEVELOPMENT	%	INDUSTRY GROUPS	%
East	0.0%	Fully Developed	100.0%	Office	55.0%
Midwest	22.0	Partially Developed	0.0	Retail	38.0
South	41.0			Industrial	7.0
West	37.0			Hotel/Motel	0.0
				Apartments	0.0
				Other	0.0

STAFF COMMENTS: As of June 30, 1985, RREEF USA III had investments in six properties which together represent 40% of total Fund Capital. One of these six properties, a 37-story, multi-tenant office building located in Chicago's Central Business District, was acquired in the second quarter of 1985. Going forward, the Fund has under contract and study a three-anchor mall in a suburb of Denver.

ALTERNATIVE INVESTMENT MANAGER INFORMATION
June 30, 1985

FIRM NAME:	Norwest Venture Capital Management, Inc.
FUND NAME:	Norwest Venture Partners I (NVPI)
CONTACT:	Dan Haggerty
ACCOUNT INCEPTION:	1/12/84
SBI COMMITMENT:	$10 Million
SBI CURRENT INVESTMENT:	$7 Million

INVESTMENT DESCRIPTION: NVPI is a $60 million venture capital limited partnership formed in January 1984. Term of the Fund is 10 years with optional extensions. Investment focus of NVPI will be on high technology private companies in the early stages of development. The Fund will not invest in leveraged buyouts.

NVPI I INVESTMENTS				CASH RETURNS TO SBI		
CURRENT TOTAL #	$	LATEST QUARTER #	$	LATEST QUARTER	LAST FOUR QUARTERS	CUMULATIVE SINCE INCEPTION
22	$14.8 Million	2	$1.3 Million	$0.00 Million	$0.06 Million	$0.06 Million

SUMMARY DESCRIPTION OF CURRENT PORTFOLIO
(% OF TOTAL FUND COST)

LOCATION	%	STAGE OF DEVELOPMENT	%	INDUSTRY GROUPS	%
East	8.9%	Early Stage Financing	94.9%	Computer Related	75.1%
Midwest	27.3	Expansion Financing	5.1	Machinery/Equipment	0.0
South	5.1	Bridge Financing	0.0	Industrial/Manufacturing	3.4
West	58.7	Leveraged Buyouts	0.0	Consumer Products/Services	0.0
				Communications	8.8
				Energy Related	4.6
				Medical Related	6.1
				Other	2.0

STAFF COMMENTS: During the second quarter of 1985, the general partners of Norwest Venture Partners I continued to focus their efforts on the management of the existing portfolio. Two of the investments were sold during the period for modest gains and five of the remaining companies received additional financing. Another of the investments was written off due to a severely diminished outlook for the company's products. Nevertheless, new investment activity picked up slightly during the quarter with the completion of two investments totalling $1.3 million. Both of the new portfolio companies are Oregon-based, early stage firms in the computer industry.

ALTERNATIVE INVESTMENT MANAGER INFORMATION
June 30, 1985

FIRM NAME:	Heitman Advisory Corporation
FUND NAME:	HAC Group Trust I
CONTACT:	David Glickman
ACCOUNT INCEPTION:	6/14/84
SBI COMMITMENT:	$20.0 Million
SBI CURRENT INVESTMENT:	$18.0 Million

INVESTMENT DESCRIPTION: HAC Group Trust is a $113.0 million real estate Group Trust formed in May 1984. Term of the Fund is fifteen years with optional extensions. The Fund is investing primarily in equity real estate diversified by location and property type. Centre Properties, Ltd., an affiliate of Heitman, manages all 100% owned properties.

HAC GROUP TRUST I INVESTMENTS (AT COST)				CASH RETURNS TO SBI		
CURRENT TOTAL		LATEST QUARTER				
#	$	#	$	LATEST QUARTER	LAST FOUR QUARTERS	CUMULATIVE SINCE INCEPTION
6	$83.5 Million	0	$0.0	$353,329	$689,136	$689,136

SUMMARY DESCRIPTION OF CURRENT PORTFOLIO
(% OF TOTAL FUND COST)

LOCATION	%	STAGE OF DEVELOPMENT	%	INDUSTRY GROUPS	%
East	8.0%	Fully Developed	100.0%	Office	35.0%
Midwest	47.0	Partially Developed	0.0	Retail	37.0
South	28.0			Industrial	28.0
West	5.0			Hotel/Motel	0.0
				Apartments	0.0
				Other	0.0

STAFF COMMENTS: As of June 30, 1985 the Fund owned interests in six properties representing approximately 74% of total Fund capital. No new properties were acquired for the Fund during the quarter ended June 30, 1985. In the last quarter of 1985, Heitman has committed to fund a shopping center located in Elizabethtown, Kentucky. Other investments are under review which could bring the Fund to a fully invested position by the end of 1985. Heitman Group Trust II, a proposed $200 million successor Fund to Group Trust I, is currently offering subscriptions.

ALTERNATIVE INVESTMENT MANAGER INFORMATION
June 30, 1985

FIRM NAME:	Kohlberg, Kravis, Roberts and Co. (KKR)
FUND NAME:	1984 Investment Partnership (KKR III)
CONTACT:	George Roberts
ACCOUNT INCEPTION:	March 21, 1984
SBI COMMITMENT:	$25 Million
SBI CURRENT INVESTMENT:	$14.0 Million

INVESTMENT DESCRIPTION: KKR III is a $1 billion leveraged buyout limited partnership formed in March 1984. The term of the Fund is twelve years with optional extensions. Investment focus of KKR III will be on stable and mature, cash generating, low technology companies with diversified operations.

KKR III INVESTMENTS (AT COST)				CASH RETURNS TO SBI		
CURRENT TOTAL		LATEST QUARTER				
#	$	#	$	LATEST QUARTER	LAST FOUR QUARTERS	CUMULATIVE SINCE INCEPTION
5	$544.0 Million	0	$0.0	$0	$35,470	$35,470

SUMMARY DESCRIPTION OF CURRENT PORTFOLIO
(% OF TOTAL FUND COST)

LOCATION	%	STAGE OF DEVELOPMENT	%	INDUSTRY GROUPS	%
East	16.0%	Leveraged Buyouts	100.0%	Conglomerates	100.0%
Midwest	34.0	Other	0.0	Other	0.0
South	22.0				
West	28.0				

STAFF COMMENTS: No new acquisitions were completed during the latest quarter ended June 30, 1985. However, during the quarter, KKR made offers to buy two companies, Union Texas Petroleum and Storer Communications. If completed, these two new acquisitions will bring the KKR Fund to full investment. In anticipation of full investment, KKR is currently offering subscriptions to a successor Fund, KKR 1986 Fund.

ALTERNATIVE INVESTMENT MANAGER INFORMATION
June 30, 1985

FIRM NAME: Summit Partners, L.P.
FUND NAME: Summit Ventures, L.P.
CONTACT: Roe Stamps, Steve Woodsum
ACCOUNT INCEPTION: 12/20/84
SBI COMMITMENT: $10 Million
SBI CURRENT INVESTMENT: $2.5 Million

INVESTMENT DESCRIPTION: Summit Ventures is a $93 million venture capital limited partnership. The term of the partnership is ten years plus optional extensions. The partnership was formed in December 1984 by Stamps, Woodsum & Co. of Boston, Mass., the managing general partners of the fund, and Shearson/American Express. Stamps and Woodsum focus on actively generating investment opportunities, targeting portfolio companies that are already profitable yet have not received any venture backing. The fund's investment emphasis will be on high-tech, expansion stage companies. However, the Summit portfolio may include early stage firms and, in addition, will be diversified by industry type and location.

SUMMIT INVESTMENTS				CASH RETURNS TO SBI		
CURRENT TOTAL #	$	LATEST QUARTER #	$	LATEST QUARTER	LAST FOUR QUARTERS	CUMULATIVE SINCE INCEPTION
7	$7.4 Million	3	$3.6 Million	$0	$0	$0

SUMMARY DESCRIPTION OF CURRENT PORTFOLIO
(% OF TOTAL FUND COST)

LOCATION	%	STAGE OF DEVELOPMENT	%	INDUSTRY GROUPS	%
East	37.0%	Early Stage Financing	13.0%	Computer Related	54.0%
Midwest	0.0	Expansion Financing	87.0	Machinery/Equipment	0.0
South	0.0	Bridge Financing	0.0	Industrial/Manufacturing	0.0
West	63.0	Leveraged Buyouts	0.0	Consumer Products/Services	0.0
				Communications	33.0
				Energy Related	0.0
				Medical Related	13.0
				Other	0.0

STAFF COMMENTS: Second quarter 1985 was a period of considerable activity for Summit Ventures. Three young technology companies were added to the portfolio and two others were identified for investment in the third quarter of the year. As would be expected from Summit's investment strategy, four of the five are profitable, expansion stage companies. The fifth company, however, represents the beginning of a small early-stage component of the portfolio. Three of the five investments are in computer-related industries. The remaining two companies are in the telecommunications and medical industries, respectively.

ALTERNATIVE INVESTMENT MANAGER INFORMATION
June 30, 1985

FIRM NAME:	Smith Barney Venture Corp. (SBVC)
FUND NAME:	First Century III (FCIII)
CONTACT:	Mike Myers
ACCOUNT INCEPTION:	12/14/84
SBI COMMITMENT:	$10 Million
SBI CURRENT INVESTMENT:	$2.5 Million

INVESTMENT DESCRIPTION: FCIII is a New York based $100 million venture capital limited partnership formed in December 1984. Term of the Fund is 10 years with optional extensions. Investment focus of FCIII will be on high technology private companies in the early stages of development. FCIII is the third venture fund formed by SBVC since 1972.

FCIII INVESTMENTS				CASH RETURNS TO SBI		
CURRENT TOTAL		LATEST QUARTER				
#	$	#	$	LATEST QUARTER	LAST FOUR QUARTERS	CUMULATIVE SINCE INCEPTION
6	$4.5 Million	1	$1.0 Million	$0	$0	$0

SUMMARY DESCRIPTION OF CURRENT PORTFOLIO
(% OF TOTAL FUND COST)

LOCATION	%	STAGE OF DEVELOPMENT	%	INDUSTRY GROUPS	%
East	33.0%	Early Stage Financing	100.0%	Computer Related	56.0%
Midwest	0.0	Expansion Financing	0.0	Machinery/Equipment	0.0
South	27.0	Bridge Financing	0.0	Industrial/Manufacturing	0.0
West	40.0	Leveraged Buyouts	0.0	Consumer Products/Services	0.0
				Communications	0.0
				Energy Related	0.0
				Medical Related	46.0
				Other	0.0

STAFF COMMENTS: During the first quarter ended June 30, 1985, Smith Barney Ventures invested $1.0 million into one new portfolio company. The new investment is in a company that manufacturers gallium arsenide integrated circuits. Gallium arsenide is a material that can be used to replace silicon in the manufacturing of high performance semiconductors. With this additional new investment, Smith Barney now has investments in six portfolio companies having an aggregate cost of $4.5 million.

ALTERNATIVE INVESTMENT MANAGER INFORMATION
June 30, 1985

FIRM NAME:	DSV Management, Ltd.
FUND NAME:	DSV Partners IV (DSV IV)
CONTACT:	Morton Collins
ACCOUNT INCEPTION:	4/10/1985
SBI COMMITMENT:	$10 Million
SBI CURRENT INVESTMENT:	$4 Million

INVESTMENT DESCRIPTION: DSV Partners IV, a $60 million venture capital limited partnership, was formed in April, 1985. The term of the Fund will be 12 years with an optional 3 year extension. DSV IV's investment focus will be on start-up and early stage, high-technology portfolio companies. The geographic emphasis of the Fund will be on East and West Coast firms. DSV IV is the fourth venture capital fund formed by DSV Management since the firm's inception in 1968.

DSV IV INVESTMENTS				CASH RETURNS TO SBI		
CURRENT TOTAL #	CURRENT TOTAL $	LATEST QUARTER #	LATEST QUARTER $	LATEST QUARTER	LAST FOUR QUARTERS	CUMULATIVE SINCE INCEPTION
1	$0.2	1	$0.2	$0	$0	$0

SUMMARY DESCRIPTION OF CURRENT PORTFOLIO
(% OF TOTAL FUND COST)

LOCATION	%	STAGE OF DEVELOPMENT	%	INDUSTRY GROUPS	%
East	100.0%	Early Stage Financing	100.0%	Computer Related	100.0%
Midwest	0.0	Expansion Financing	0.0	Machinery/Equipment	0.0
South	0.0	Bridge Financing	0.0	Industrial/Manufacturing	0.0
West	0.0	Leveraged Buyouts	0.0	Consumer Products/Services	0.0
				Communications	0.0
				Energy Related	0.0
				Medical Related	0.0
				Other	0.0

STAFF COMMENTS: DSV IV's second and final closing occurred in April. After the completion of the fundraising activities, the general partners turned their attention full-time to the management of the DSV III portfolio and the generation of investments for DSV IV. During the quarter, the general partners made one investment which will be shared equally between the III and IV portfolios. The investment, which represents the culmination of several years of investigation by the general partners, is in a very early-stage firm in a niche area of the semi-conductor industry. A second young company in the medical diagnostics industry has been targetted for third quarter investment.

ALTERNATIVE INVESTMENT MANAGER INFORMATION
June 30, 1985

FIRM NAME:	First Reserve Corporation
FUND NAME:	Amgo I
CONTACT:	Jon Hill
ACCOUNT INCEPTION:	July 1981
SBI COMMITMENT:	$15 Million
SBI CURRENT INVESTMENT:	$15 Million

INVESTMENT DESCRIPTION: Amgo I is a $144 million oil and gas Limited Partnership formed in July 1981. Term of the Fund is 20 years. Investment strategy of Amgo I is to provide a diversified portfolio of investments in terms of geographic locations, geological structures, investment types and operating companies.

AMGO I INVESTMENTS (AT COST)				CASH RETURNS TO SBI		
CURRENT TOTAL		LATEST QUARTER				
#	$	#	$	LATEST QUARTER	LAST FOUR QUARTERS	CUMULATIVE SINCE INCEPTION
23	$132.5 Million	1	$7.3 Million	$123,500	$535,000	$2,298,000

SUMMARY DESCRIPTION OF CURRENT PORTFOLIO
(% OF TOTAL FUND COST)

LOCATION	%	SECURITY INTEREST	%	INDUSTRY GROUPS	%
Texas	20.8%	Proved Developed Reserves	53.0%	Acreage	7.0%
Oklahoma	22.7	Probable Reserves	0.0	Drilling	11.1
Louisiana	18.0	Possible Reserves	3.0	Equity	6.0
Rocky Mtns.	13.8	General Recourse	44.0	Production	23.0
Mississippi	8.1			Royalty	26.2
California	7.7			Surface Facilities	0.0
Gulf Coast	5.7			Conv. Note and Preferred	26.2
New Mexico	1.6			Other	0.5
Other	1.6				

STAFF COMMENTS: Out of approximately 30 investments that were formally reviewed, First Reserve did commit to one new investment during the latest quarter. As of June 30, 1985, Amgo I had committed to 23 oil and gas investments for a $132.5 million total investment out of the original capitalization of $144 million. Investment strategy continues to focus on actively working with existing portfolio companies in addition to acquiring producing properties and the convertible securities of exploration and production companies.

ALTERNATIVE INVESTMENT MANAGER INFORMATION
June 30, 1985

FIRM NAME:	First Reserve Corporation
FUND NAME:	Amgo II
CONTACT:	Jon Hill
ACCOUNT INCEPTION:	February 1983
SBI COMMITMENT:	$7 Million
SBI CURRENT INVESTMENT:	$7 Million

INVESTMENT DESCRIPTION: Amgo II is a $36 million oil and gas limited partnership formed in December 1982. Term of the Fund is 19 years. Investment strategy of Amgo II is to provide a diversified portfolio of investments in terms of geographic locations, geological structures, investment types and operating companies.

AMGO II FUND INVESTMENTS (AT COST)				CASH RETURNS TO SBI		
CURRENT TOTAL #	CURRENT TOTAL $	LATEST QUARTER #	LATEST QUARTER $	LATEST QUARTER	LAST FOUR QUARTERS	CUMULATIVE SINCE INCEPTION
10	$23.1 Million	1	$2.8 Million	$124,500	$468,400	$539,100

SUMMARY DESCRIPTION OF CURRENT PORTFOLIO
(% OF TOTAL FUND COST)

LOCATION	%	SECURITY INTEREST	%	INDUSTRY GROUPS	%
Texas	24.6%	Proved Developed Reserves	40.0%	Acreage	0.0%
Oklahoma	16.7	Probable Reserves	0.0	Drilling	0.0
Louisiana	13.8	Possible Reserves	0.0	Equity	12.0
Rocky Mtns.	14.3	General Recourse	60.0	Production	14.0
Gulf Coast	21.2			Royalty	15.0
New Mexico	3.9			Surface Facilities	0.0
Other	5.5			Conv. Note and Preferred	59.0
				Other	0.0

STAFF COMMENTS: Out of approximately 30 investments that were formally reviewed, First Reserve did commit to one new investment during the latest quarter. As of June 30, 1985, Amgo II had committed to 10 oil and gas investments for a $23.1 million total investment out of the original capitalization of $36 million. Investment strategy continues to focus on actively working with existing portfolios companies in addition to acquiring producing properties and the convertible securities of exploration and production companies. Upon full commitment of remaining Amgo II funds, First Reserve is planning on forming Amgo III.

ALTERNATIVE INVESTMENT MANAGER INFORMATION
June 30, 1985

FIRM NAME:	Apache Corporation
FUND NAME:	10% Equipment Financing Notes
CONTACT:	Charlie Hann
ACCOUNT INCEPTION:	May 1984
SBI COMMITMENT:	$22.5 Million
SBI CURRENT INVESTMENT:	$262,878

INVESTMENT DESCRIPTION: The Apache Corp. 10% Equipment Financing Notes are a $150 million private placement to finance Apache's portion of production facility expenditures under the terms of a series of offshore joint ventures in the Gulf of Mexico organized by Shell Oil Company. In addition to fixed interest payments of 10% per annum, noteholders will receive additional interest of 2% of Apache's share of gross revenues from the joint ventures. Principal and interest on the notes are estimated to be repaid by 1992. The 2% additional interest will be paid to noteholders throughout the life of producing properties.

10% EQUIPMENT FINANCING NOTE INVESTMENTS (AT COST)				CASH RETURNS TO SBI		
CURRENT TOTAL		LATEST QUARTER				
#	$	#	$	LATEST QUARTER	LAST FOUR QUARTERS	CUMULATIVE SINCE INCEPTION
1	$1.7 Million	0	$0.0 Million	$20,240	$71,670	$71,670

SUMMARY DESCRIPTION OF CURRENT PORTFOLIO
(% OF TOTAL FUND COST)

LOCATION	%	SECURITY INTEREST	%	INDUSTRY GROUPS	%
Texas	100.0%	Proved Developed Reserves	100.0%	Acreage	0.0%
Louisiana	0.0	Probable Reserves	0.0	Drilling	0.0
Other	0.0	Other	0.0	Production	100.0

STAFF COMMENTS: A total of 45 prospects comprised of 72 leases, have been acquired. Only ten prospects have been definitively evaluated, nine of which are indicated productive. Fourteen prospects have undergone one unsuccessful drilling attempt and additional evaluation is continuing. Twenty-one remaining prospects either have initial drilling started or planned for 1985 or 1986. As a consequence of significantly lower land costs and equipment costs than had been originally estimated, the full amount of the investor commitments will not be required. Apache expects to release one-fourth of the commitments to the equipment loan during the second quarter of 1985.