1993 ANNUAL REPORT

MINNESOTA STATE BOARD OF INVESTMENT

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Governor Arne H. Carlson

State Auditor Mark B. Dayton

State Treasurer Michael A. McGrath

Secretary of State Joan Anderson Growe

Attorney General Hubert H. Humphrey III

MINNESOTA STATE BOARD OF INVESTMENT

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The Minnesota State Board of Investment is pleased to submit its 1993 Annual Report.

Returns from the capital markets were very strong for fiscal year 1993. Both the stock and bond markets exceeded their historical averages over the twelve months ending June 30, 1993. The stock market performed well primarily due to lower interest rates and positive economic news. The bond market also performed well for the fiscal year due to the decline in interest rates. Returns on most financial assets exceeded the rate of inflation for the year.

Several events should be highlighted for the year:

- The Basic Retirement Funds, the largest group of funds managed by the Board, produced a total rate of return of 14.4% for fiscal year 1993. (Refer to page 7.)
- The Post Retirement Investment Fund will provide a life-time benefit increase of 6.0% for eligible retirees beginning January 1, 1994. This is the first post retirement benefit increase generated under the new formula enacted by the 1992 Legislature. (Refer to page 31.)
- The Basic Retirement Funds reached its 10% allocation target in international stocks. (Refer to page 7.)
- The Post Retirement Investment Fund moved from a 10% stock position at the end of fiscal year 1992 to its new target allocation of 50% stocks by the end of fiscal year 1993. (Refer to page 31.)
- The Board selected eight insurance companies to provide tax sheltered annuity contracts to teachers statewide under the 403(b) program. (Refer to page 79.)

On June 30, 1993, assets under management totaled $22.6 billion. This total is the aggregate of several separate pension funds, trust funds and cash accounts, each with differing investment objectives. In establishing a comprehensive management program, the Board develops an investment strategy for each fund which reflects its unique needs. **The primary purpose of this annual report is to communicate the investment goals, policies, and performance of each fund managed by the Board.** Through the investment programs presented in this report, the Minnesota State Board of Investment will continue to enhance the management and investment performance of the funds under its control.

Sincerely,

Howard Bicker

Howard J. Bicker
Executive Director

INVESTMENT ADVISORY COUNCIL

The Legislature has established a 17-member Investment Advisory Council to advise the Board and its staff on investment-related matters.

- The Board appoints ten members experienced in finance and investment. These members traditionally have come from the Minneapolis and St. Paul corporate investment community.
- The Commissioner of Finance and the Executive Directors of the three statewide retirement systems are permanent members of the Council.
- Two active employee representatives and one retiree representative are appointed to the Council by the Governor.

The Council has formed three committees organized around broad investment subjects relevant to the Board's decision-making: Asset Allocation, Stock and Bond Managers and Alternative Investments.

All proposed investment policies are reviewed by the appropriate Committee and the full Council before they are presented to the Board for action.

Members of the Council

Gary Austin	Executive Director	Teachers Retirement Association
David Bergstrom	Executive Director	Mn. State Retirement System
John E. Bohan	Vice President, Pension Investments	Grand Metropolitan - Pillsbury
James R. Eckmann	Assistant Treasurer	Dayton Hudson Corporation
Kenneth F. Gudorf	President	Gage Investments
John M. Gunyou	Commissioner	Mn. Department of Finance
Laurie Fiori Hacking	Executive Director	Public Employees Retirement Assoc.
David B. Jeffery	Vice President and Resident Manager	Shearson Lehman Bros.
Keith Johnson	Retiree Representative	
P. Jay Kiedrowski	Executive Vice President	Norwest Bank Minnesota
Han Chin Liu	Active Employee Representative	
Malcolm W. McDonald**	Director & Corporate Secretary	Space Center, Inc.
Gary R. Norstrem	Sr. Vice Pres., Institutional Marketing	Piper Capital Management
Barbara Schnoor	Active Employee Representative	
Michael L. Troutman	Sr. Manager, Investment Programs	Board of Pensions, ELCA
Deborah Veverka	Vice President, Pension Investments	Honeywell, Inc.
Jan Yeomans*	Director, Benefit Funds & Fin'l. Markets	3M Co.

*Chair **Vice-Chair

CONSULTANTS

Richards & Tierney, Inc.	General Consultant	Chicago, Illinois
Pension Consulting Alliance	International Consultant	Studio City, California

INVESTMENT BOARD STAFF

Howard Bicker	Executive Director
Beth Lehman	Assistant Executive Director
James E. Heidelberg	Assistant to the Executive Director

Investment Management Staff*

Michael J. Menssen	Manager, Domestic Equity Investments
Lois Buermann	Investment Analyst, External Equities
Roger W. Henry	Index Portfolio Manager
A. Arthur Kaese	Investment Analyst, Internal Equities
James H. Lukens	Manager, Fixed Income Investments
Mansco Perry III	Investment Analyst, External Fixed Income
N. Robert Barman	Investment Analyst, Internal Fixed Income
John N. Griebenow	Manager, Alternative Investments
Daniel L. Egeland	Investment Analyst, Alternative Investments
John T. Kinne	Manager, Short-Term Accounts
Harold L. Syverson	Security Trader, Short-Term
Arthur M. Blauzda	Investment Analyst, Shareholder Services
Deborah F. Griebenow	Investment Analyst, Management Reporting

Administrative Staff

L. Michael Schmitt	Administrative Director
Mable E. Patrick	Accounting Supervisor
Thomas L. Delmont	Accounting Officer, Intermediate
Nancy L. Wold	Accounting Officer
Kathy Sears	Computer Operator
Charlene Olson	Secretary to the Executive Director
Lin Nadeau	Secretary, External Programs
Carol Nelson	Secretary, Internal Programs
Lavern Jagg	Receptionist

* as of January 1994

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Part One

PART TWO of the Minnesota State Board of Investment's 1993 Annual Report contains financial statements, asset listings and accounting data.

All investments undertaken by the Minnesota State Board of Investment (SBI) are governed by the common law prudent person rule and other standards codified in *Minnesota Statutes*, Chapter 11A and Chapter 356A.

Prudent Person Rule

The prudent person rule, as codified in *Minnesota Statutes* 11A.09, requires all members of the Board, Investment Advisory Council, and SBI staff to "*...act in good faith and ...exercise that degree of judgment and care, under circumstances then prevailing, which persons of prudence, discretion and intelligence exercise in the management of their own affairs, not for speculation, but for investment, considering the probable safety of their capital as well as the probable income to be derived therefrom.*" *Minnesota Statutes* 356A.04 contains similar codification of the prudent person rule applicable to the investment of pension fund assets.

Authorized Investments

In addition to the prudent person rule, the *Minnesota Statutes* contain a specific list of asset classes available for investment, including common stocks, bonds, short term securities, real estate, venture capital, and resource funds. The statutes prescribe the maximum percentage of fund assets that may be invested in each asset class and contain specific restrictions to ensure the quality of the investments.

Investment Policies

Within the requirements defined by state law, the State Board of Investment, in conjunction with SBI staff and the Investment Advisory Council, establishes investment policies for all funds under its management. These investment policies are tailored to the particular needs of each fund and specify investment objectives, risk tolerance, asset allocation, investment management structure, and specific performance standards.

The Board's policy concerning investment in companies with direct investment in South Africa is described in the Major Policy Initiatives section of this report. The Board's prohibition on holding the stock of any company which generates more than fifty percent of its revenues from the sale of liquor or tobacco was lifted as of April 1, 1993. Its prohibition on investing in the stock of American Home Products remained in effect throughout fiscal year 1993.

In recent years, the Board, its staff, and the Investment Advisory Council have conducted detailed analyses of each of the funds under the SBI's control that address investment objectives, asset allocation policy and management structure. The results of these studies guide the on-going management of these funds and will be updated periodically.

Report Format

All SBI returns shown in this report are net of transactions costs and management fees. **The annual report is published in two volumes.** This volume, **Part One,** contains the text describing the investment policies and performance for each of the funds managed by the SBI. It also contains statistical data on the Board's managers. The second volume, **Part Two,** contains audited financial statements, asset listings and accounting data.

FUNDS UNDER MANAGEMENT

Basic Retirement Funds

Post Retirement Investment Fund

Supplemental Investment Fund

Permanent School Trust Fund

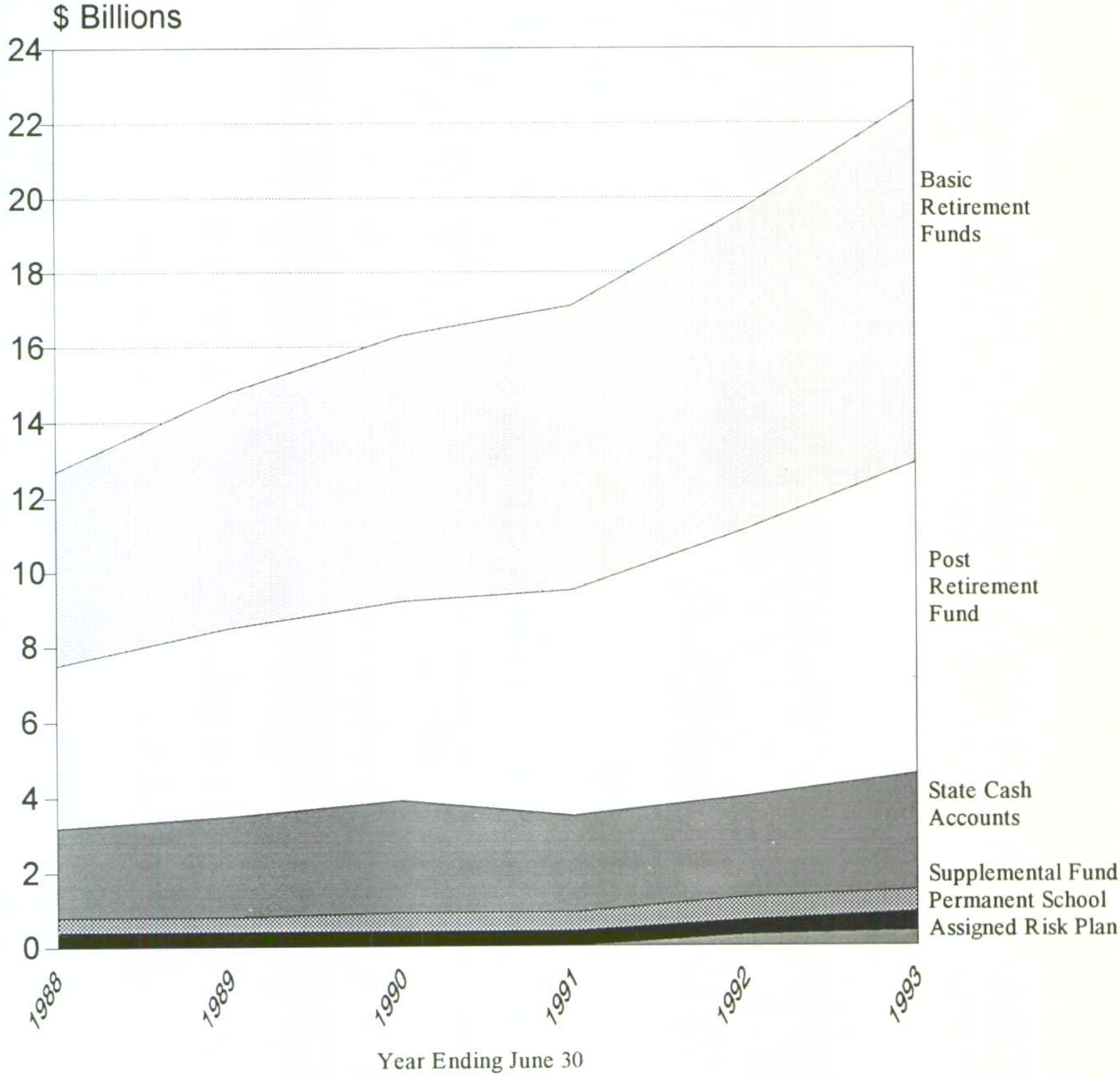
Assigned Risk Plan

Environmental Trust Fund

State Cash Accounts

Growth in Assets

Fiscal Years 1989 - 1993



	Market Value June 30, 1993
Basic Retirement Funds	**$ 9.7 billion**

The Basic Retirement Funds contain the pension assets of the currently working participants in eight major statewide retirement plans:

• Teachers Retirement Fund	$ 4,230 million
• Public Employees Retirement Fund	2,216 million
• State Employees Retirement Fund	1,951 million
• Public Employees Police and Fire Fund	913 million
• Highway Patrol Retirement Fund	144 million
• Correctional Employees Fund	102 million
• Police and Fire Consolidation Fund	159 million
• Judges Retirement Fund	7 million

Post Retirement Investment Fund — $ 8.3 billion

The Post Retirement Investment Fund is composed of the reserves for retirement benefits to be paid to retired employees. Life-time retirement benefit increases are permitted based on both inflation and investment performance.

Supplemental Investment Fund — $ 0.6 billion

The Supplemental Investment Fund includes assets of the state deferred compensation plan, supplemental benefit arrangements, various retirement programs for local police and firefighters, and the unclassified employees of the state. Participants may choose among six separate accounts with different investment emphases designed to meet a wide range of investor needs and objectives.

• Income Share Account	stocks and bonds	$ 307 million
• Growth Share Account	actively managed stocks	98 million
• Common Stock Index Account	passively managed stocks	36 million
• Bond Market Account	actively managed bonds	19 million
• Money Market Account	short-term debt securities	67 million
• Fixed Interest Account	guaranteed investment contracts	71 million

Permanent School Trust Fund — $0.5 billion

The Permanent School Trust Fund is a trust established for the benefit of Minnesota public schools.

Assigned Risk Plan — $ 0.4 billion

The Minnesota Workers Compensation Assigned Risk Plan is the insurance company of last resort for companies unable to obtain private worker compensation insurance. The SBI is the investment manager for the fund's portfolio.

Environmental Trust Fund — * (less than 0.1 billion)

The Environmental Trust Fund is a trust established for the protection and enhancement of Minnesota's environment. It is funded with a portion of the proceeds from the state's lottery. The fund was $47 million on June 30, 1993.

State Cash Accounts — $ 3.1 billion

These accounts are the cash balances of state government funds, including the Invested Treasurers Cash Fund, transportation funds, and other miscellaneous cash accounts. All assets are invested in high quality, liquid short-term debt securities.

Total Assets — $22.6 billion

BASIC RETIREMENT FUNDS

Investment Objectives

Asset Allocation

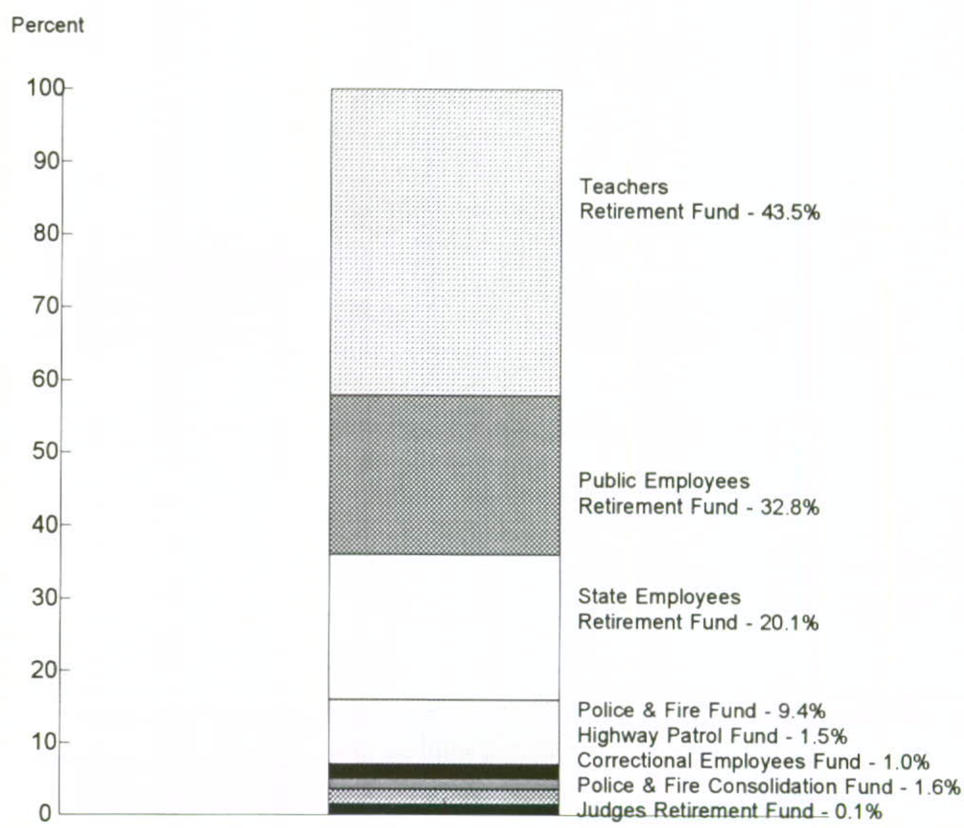
Investment Management

Investment Performance

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

Figure 1 identifies the individual retirement funds which comprise the Basic Funds. The Funds serve as accumulation pools for the pension contributions of public employees and their employers during the employees' years of active service. Approximately 250,000 public employees participate in the Basic Funds. On June 30, 1993 the market value of the Funds was $9.7 billion.

Figure 1. Participating Funds FY 1993



INVESTMENT OBJECTIVES

The State Board of Investment (SBI) has one overriding responsibility with respect to its management of the Basic Funds: to ensure that sufficient funds are available to finance promised retirement benefits.

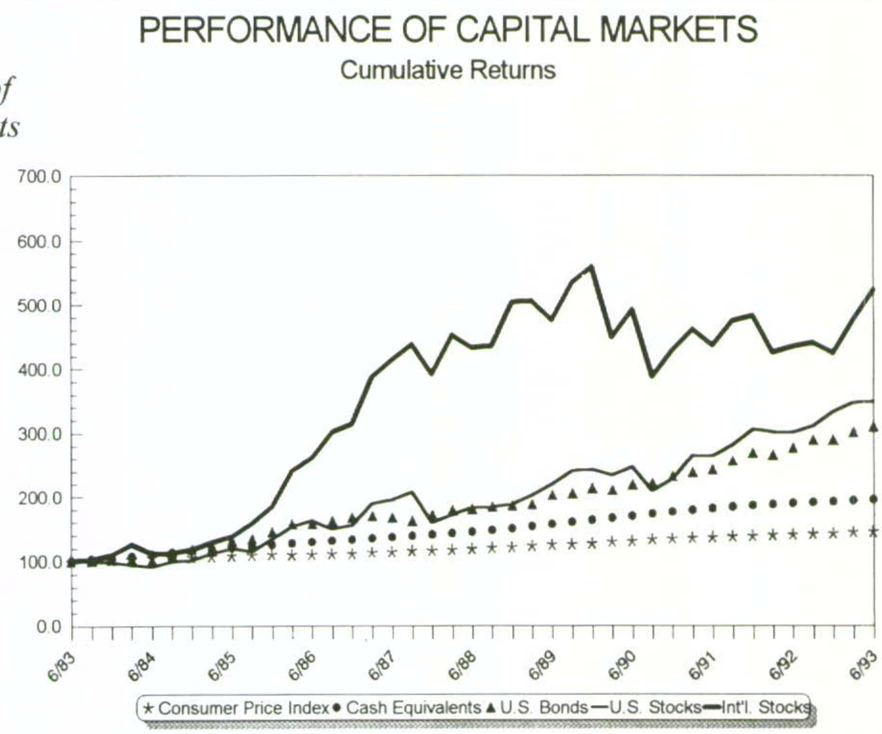
Actuarial Assumed Return

The Basic Funds invest the pension contributions of most public employees in the State of Minnesota during their working years. Employee and employer contribution rates are specified in state law as a percentage of an employee's salary. The rates are set so that contributions plus expected investment earnings will cover the projected cost of promised pension benefits. In order to meet these projected pension costs, the Basic Retirement Funds must generate investment returns of at least 8.5% on an annualized basis, over time.

Time Horizon

Normally, pension assets will accumulate in the Basic Retirement Funds for thirty to forty years during an employee's years of active service. This provides the Basic Funds with a long investment time horizon and permits the Board to take advantage of the long run

Figure 2. Performance of Capital Markets FY 1984-1993



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

return opportunities offered by the capital markets in order to meet its actuarial return target.

As illustrated in Figure 2, historical evidence strongly indicates that common stocks (both domestic and international) will provide the greatest opportunity to maximize investment returns over the long-term. As a result, the Board has chosen to incorporate a large commitment to common stocks in its asset allocation policy for the Basic Funds. In order to limit the short run volatility of returns exhibited by common stocks, the Board includes other asset classes such as bonds and real estate in the total portfolio. These assets diversify the Basic Funds and reduce wide fluctuations in investment returns on a year to year basis. This diversification should not impair the Basic Funds' ability to meet or exceed their actuarial return target over the long-term.

Long-Term Objectives

Within this context, the Board has established several long-term investment objectives for the Basic Retirement Funds. Monitoring actual performance against these return objectives helps the Board to ensure that the Basic Funds will meet their long-term funding obligations:

- **Provide Real Returns.** Over a ten year period, the Basic Funds are expected to generate total returns that are 3-5 percentage points greater than the rate of inflation.

- **Exceed Market Returns.** Over a five year period, the Basic Funds are expected to outperform a composite of market indices weighted in a manner that reflects their long-term asset allocation policy.

- **Exceed Median Fund Returns.** Over a five year period, the Basic Funds are expected to outperform the median fund from a representative universe of public and private funds with a balanced asset mix of stocks and bonds.

ASSET ALLOCATION

The allocation of assets among common stocks, bonds, and alternative investments can have a dramatic impact on investment results. In fact, asset allocation decisions overwhelm the impact of individual security selection within a total portfolio. Consequently, the Board has focused considerable attention on the selection of an appropriate long-term asset allocation policy for the Basic Funds.

Long-Term Allocation Policy

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

• Domestic Stocks	50.0%
• International Stocks	10.0
• Domestic Bonds	24.0
• Alternative Investments	15.0
• Unallocated Cash	1.0

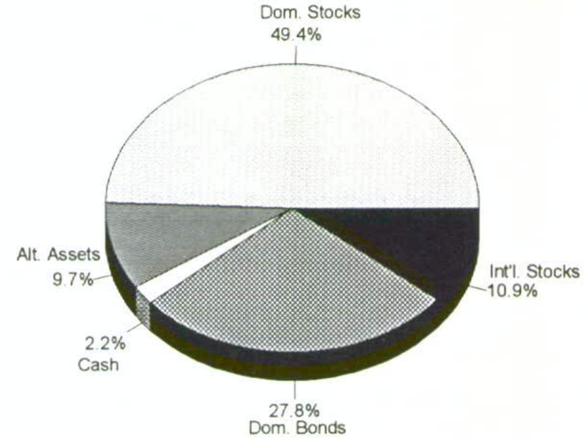
During fiscal year 1993, the SBI funded the international stock allocation. The international stock segment received initial funding on October 1, 1992 and reached its 10% target shortly before the end of the fiscal year.

Figure 3 presents the actual asset mix of the Basic Funds at the end of fiscal year 1993. Historical data on the Basic Funds' actual asset mix over the last five years are displayed in Figure 4.

Total Return Vehicles

The SBI invests the majority of the Basic Funds' assets in common stocks (both domestic and international). A large allocation is consistent with the investment time horizon of the Basic Funds and the advantageous long-term risk-return characteristics of common

Figure 3. Asset Mix June 30, 1993



	Market Value $Millions	Actual Asset Mix	Policy Target
Domestic Stocks	$4,804	49.4%	50.0%
International Stocks	1,060	10.9	10.0
Domestic Bonds	2,706	27.8	24.0
Alternative Assets*	943	9.7	15.0
Unallocated Cash	210	2.2	1.0
Total	$9,723	100.0%	100.0%

* The alternative assets allocation is invested in bonds until deployed.

stocks. Including international stocks in the asset mix allows the SBI to diversify its holdings across world markets and offers the opportunity to enhance returns and reduce the risk/volatility of the total portfolio. The rationale underlying the inclusion of venture capital is similar. However, the relatively small size of the venture capital market presents a practical limit to the amount that may be invested in this asset class.

The Board recognizes that this sizable policy allocation to common stock and venture capital likely will produce more volatile portfolio returns than a more conservative policy focused on fixed income securities. It is understood that this policy may result in quarters or even years of disappointing results. Nevertheless, the long run return benefits of this policy are expected to compensate for the additional volatility.

Diversification Vehicles

The Board includes other asset classes in the Basic Funds both to provide some insulation against highly inflationary or deflationary environments and to diversify the portfolio sufficiently to avoid excessive return volatility.

Real estate and resource (oil and gas) investments provide an inflation hedge that other financial assets cannot offer. In periods of rapidly rising prices, these "hard" assets have appreciated in value at a rate at least equal to the inflation rate. Further, even under more normal financial conditions such as low to moderate inflation, the returns on these assets are not highly correlated with common stocks. Thus, their inclusion in the Basic Funds serves to dampen return volatility.

The bond component of the Basic Funds acts as a hedge against a deflationary economic environment. In the event of a major deflation, high quality fixed income assets, particularly long-term bonds, are expected to protect principal and generate significant capital gains. And, like real estate and resource funds, under normal financial conditions, bonds help to diversify the Basic Funds, thereby controlling return volatility.

INVESTMENT MANAGEMENT

All assets in the Basic Retirement Funds are managed externally by private money management firms under contracts or agreements with the SBI.

Domestic Stock Segment

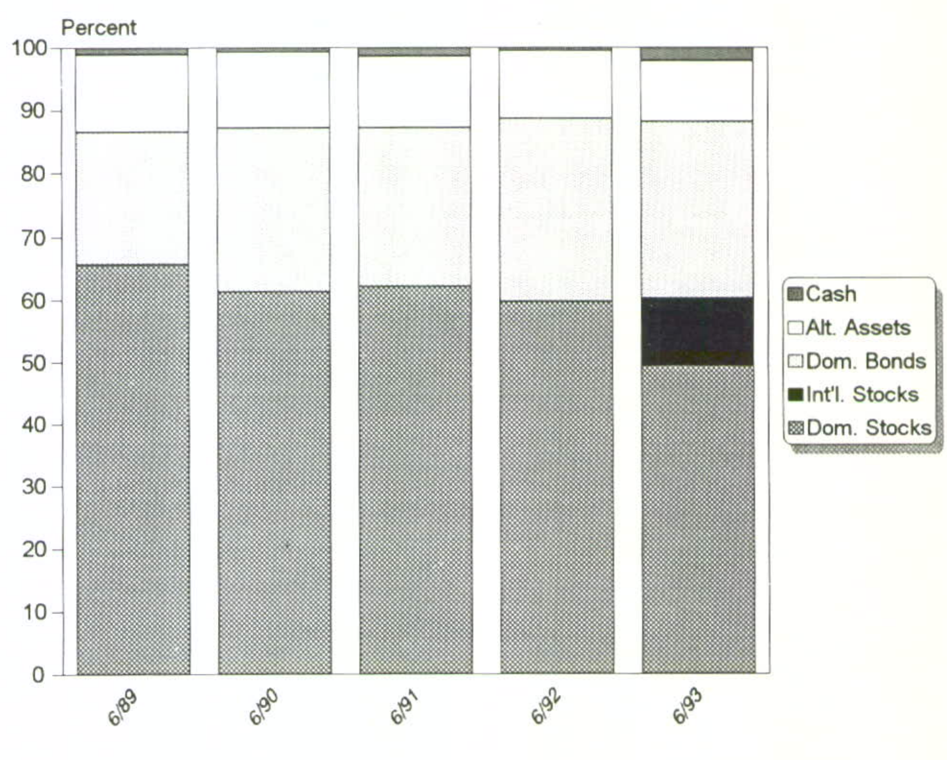
The Board allocates 50% of the Basic Funds to domestic common stocks. The SBI utilizes a two-part approach to the management of this segment:

- **Active Management.** No more than one-half of the stock segment will be actively managed. At the end of fiscal year 1993, approximately 42% of the stock segment was actively managed by a group of nine external money managers.

- **Passive Management.** On an on-going basis, at least one-half of the stock segment will be passively managed, i.e. invested in an **index fund.** At the end of fiscal year 1993, approximately 58% of the stock segment was indexed.

The **actively managed segment** of the Basic Funds' domestic common stock portfolio is designed to add value. Each active manager is expected to add incremental value over the long run relative to a customized benchmark which reflects its unique investment approach or style.

Figure 4. Historical Asset Mix FY 1989-1993



This type of active manager structure can result in misfit or style bias. "Misfit" can be defined as the difference between the aggregate benchmarks of the active managers and the asset class target (i.e. the Wilshire 5000). Historically, the SBI experienced three major areas of misfit in its active manager group:

- persistent over-exposure to small capitalization stocks
- persistent over-exposure to growth oriented stocks
- persistent under-exposure to yield oriented stocks

The SBI uses the **passively managed segment** of the domestic stock portfolio to compensate for misfit. Because of its large size, the index fund can be a powerful lever in managing the characteristics of the entire domestic stock segment. By making relatively minor changes in its holdings, the index fund is modified or "tilted" to compensate for the existing misfit in the active manager group. This strategy should result in a decrease in the volatility of total segment returns and allow the value added through active management to benefit the total domestic common stock segment returns. The tilt strategy was phased-in during fiscal

Figure 4 (con't). Historical Asset Mix FY 1989-1993

	Market Value June 30, 1989	1990	1991	1992	1993
Dom. Common Stocks					
$Million	4,154.0	4,358.0	4,727.0	5,143.0	4,804.0
Percent	65.7	61.3	62.1	59.7	49.4
Int'l. Common Stocks					
$Million	0.0	0.0	0.0	0.0	1,060.0
Percent	0.0	0.0	0.0	0.0	10.9
Bonds					
$Million	1,318.0	1,840.0	1,899.0	2,489.0	2,706.0
Percent	20.8	25.9	25.0	28.9	27.8
Real Estate					
$Million	502.0	525.0	456.0	388.0	391.0
Percent	7.9	7.4	6.0	4.5	4.0
Venture Capital					
$Million	181.0	241.0	295.0	437.0	442.0
Percent	2.9	3.4	3.9	5.1	4.6
Resource Funds					
$Million	96.0	84.0	112.0	101.0	110.0
Percent	1.5	1.2	1.5	1.2	1.1
Unallocated Cash					
$Million	74.0	58.0	121.0	50.0	210.0
Percent	1.2	0.8	1.5	0.6	2.2
Total Fund					
$Million	6,325.0	7,106.0	7,610.0	8,608.0	9,723.0
Percent	100.0	100.0	100.0	100.0	100.0

years 1991 and 1992. It was fully implemented during all of fiscal year 1993.

A comprehensive monitoring system has been established to ensure that the many elements of the domestic common stock portfolio conform to the Basic Funds' investment policy. Customized performance benchmarks have been established for each of the Board's managers. These benchmarks enable the SBI to evaluate the managers' results, both individually and in aggregate, with respect to risk incurred and returns achieved.

FY 1993 Changes

No domestic stock managers were added or deleted during fiscal year 1993. However, the SBI conducted an extensive manager search during the year and the Board approved several new active domestic stock managers. These new managers will be funded on July 1, 1993. The larger manager group will manage domestic stock assets of both the Basic and Post Retirement Funds in the future.

A description of each domestic common stock manager's investment approach is included in the Manager Summary section. Their portfolio characteristics are included in the Statistical Data Appendix.

International Stock Segment

The Board allocates 10% of the Basic Funds to international common stocks. As with domestic stocks, the SBI will use a two part approach to the management structure of this segment:

- **Passive Management.** No more than one-half of the international stock segment will be passively managed when the SBI's program is fully implemented. During the initial year of the program, however, the SBI chose to rely more heavily on indexation. This approach was selected as a transition strategy because an index manager could be retained and funded more quickly and at a lower implementation cost. At the end of fiscal year 1993, approximately 80% of the international stock segment was passively managed. This percentage will be reduced during fiscal year 1994 when additional active managers are retained.

- **Active Management.** At least one-half of the international stock segment will be actively managed when the SBI's program is fully implemented. As referenced above, during the initial year of the program, the SBI elected to index a greater proportion of the international segment. At the end of fiscal year 1993, approximately 20% of the segment was actively managed. This percentage will increase during fiscal year 1994 after additional active managers are retained and funded.

FY 1993 Changes

The Board approved an international investing implementation plan in June 1992. In accordance with the plan, the manager selection process was conducted in three phases:

- **Index Manager Search.** State Street Global Advisors was retained as the SBI's international index manager in September 1992 and received initial funding in October 1992. Additional funding was provided over the months of November through March in an effort to "dollar cost average" the entry into the international markets.

- **Active/Passive Search.** Baring International Investment and Brinson Partners were retained to manage active country/passive stock portfolios in March 1993 and were funded in April 1993.

- **Fully Active Search.** Finalists for the fully active (active country/active stock) manager search were approved in June 1993. The SBI expects to retain and fund three to four additional active managers from this group during fiscal year 1994.

A description of each international stock manager's investment approach is included in the Manager Summary section.

Domestic Bond Segment

The Board allocates 24% of the Basic Funds to domestic bonds. The SBI uses a two-part approach to the management of the bond segment:

- **Active Management.** No more than one-half of the bond segment will be actively managed. At the end of the fiscal year 1993, approximately 45% of the bond segment was actively managed by a group of four external money managers.

- **Semi-Passive Management.** At least one-half of the assets allocated to bonds will be managed by semi-passive managers. At the end of fiscal year 1993, approximately 55% of the bond segment was invested using an **enhanced index** approach.

The group of **active bond managers** was selected for its blend of investment styles. Each of the managers invests in high quality fixed income securities. The managers vary, however, in the emphasis they place on interest rate anticipation and in the manner in which they approach issue selection and sector weighting decisions.

In keeping with the objective of utilizing the bond portfolio as a deflation hedge, the active managers are restricted regarding the minimum average life of their portfolios. This requirement is designed to prevent the Basic Funds' total bond portfolio from assuming an excessively short-lived position and thus, severely diluting its deflation hedge capacity. In addition, to avoid extreme variability in total bond segment returns, the SBI constrains the maximum duration (average life) of the managers' portfolios to a band of three to seven years. The bond managers are permitted to purchase only high quality (BAA or better) fixed income assets.

The goal of the **enhanced index managers** is to add incremental value to the Salomon Broad Investment Grade (BIG) Index through the superior selection of bonds for the portfolios. The enhanced index portfolios adhere very closely to characteristics of the Salomon BIG and essentially match its duration and maturity structure. The semi-passive managers seek to add value by exploiting perceived mispricings among individual securities or by making minor alterations in the sector weightings within the portfolio. Although the enhanced index managers seek to exceed the performance of the index, the possibility exists that the semi-passive approach may slightly underperform the target index during some periods.

FY 1993 Changes

One domestic bond manager, Ark Management, was deleted from the manager group at the end of the fiscal year. While no managers were added during the year, the SBI conducted searches for both active and semi-passive managers during the year. Several new managers were approved by the Board and will be funded on July 1, 1993. The enlarged manager group will manage the bond assets of both the Basic and Post Retirement Funds in the future.

A description of each bond manager's investment approach is included in the Manager Summary section. Their portfolio characteristics are presented in the Statistical Data Appendix.

Real Estate Segment

State law authorizes the SBI to invest in real estate through commingled funds, limited partnerships and trusts. Each of the Board's real estate investments involve at least four other participants. In addition, the Board's investment may not exceed 20% of a given commingled fund, partnership or trust. State law does not permit investment in real estate through direct investments, separate accounts or individual transactions.

By investing in several open-end and closed-end commingled funds, the SBI has created a large core portfolio of real estate that is broadly diversified by property type, location and financing structure. The core portfolio is designed to reflect the composition of the aggregate U.S. real estate market and, as such, is expected to earn at least market returns. The broad diversification of the core portfolio enables the SBI to select less diversified, special orientation managers for the remaining portion of the real estate segment. With their more focused approach to real estate management, these funds offer the ability to enhance the return earned by the core portfolio.

Prospective real estate managers are reviewed and selected based on the managers' experience, investment strategy and performance history.

FY 1993 Changes

At fiscal year-end, the market value of the real estate portfolio comprised 4.0% of the Basic Funds. No new commitments to real estate were made during fiscal year 1993. The SBI will continue to review and add new real estate investments as attractive opportunities are identified.

A description of each real estate manager's investment approach is included in the Manager Summary section.

Venture Capital Segment

Under state law, the SBI is authorized to invest in venture capital through limited partnerships and corporations. As with real estate investments, each venture capital investment must involve at least four other investors, and the Board's investment may not exceed 20% of a particular limited partnership.

The SBI maintains a broadly diversified venture capital portfolio that is diversified across three dimensions: location, industry type and stage of corporate development of individual portfolio companies.

Prospective venture capital managers are reviewed and selected based primarily on the managers' experience, investment strategy, diversification potential and performance history.

FY 1993 Changes

At year-end, the market value of the venture capital segment was 4.6% of the Basic Funds. During the fiscal year, the Board approved commitments to Churchill Capital Partners II, Midwest Bank Fund III, and a follow-on commitment to Golder Thoma in Golder Thoma Fund IV. These commitments were finalized by the end of fiscal year 1993. In addition, the Board tentatively approved a commitment in Great Northern Capital. This commitment will be funded if the firm meets certain conditions regarding total commitments. The SBI will continue to review and add new venture capital investments, as attractive attractive opportunities are identified, to replenish commitments that will expire in the mid-1990's.

A description of each venture capital manager's investment approach is included in the Manager Summary section.

Resource Fund Segment

The SBI invests in partnerships structured specifically for pension funds and other tax-exempt investors. There must be four other participants in each of the SBI's resource investments and the Board may invest no more than 20% of a partnership's total capital. The oil and gas partnerships in which the Board invests concentrate their investments in producing properties and royalty interests that are diversified geographically and/or geologically.

Resource investments are selected based on the managers' experience, investment strategy and performance history.

FY 1993 Changes

At year-end, the market value of the resource fund segment was 1.1% of the Basic Funds. During fiscal year 1993, no new commitments were made in the resource area. The Board plans to continue to review resource investments for possible inclusion in the portfolio.

A description of each resource fund manager's investment approach is included in the Manager Summary section.

Unallocated Cash

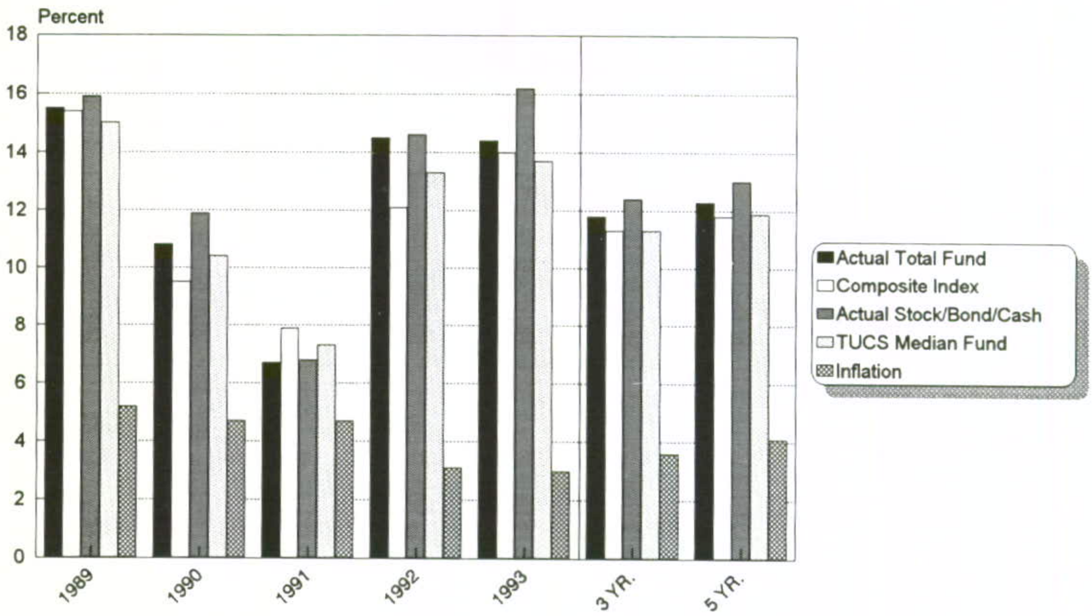
The Board allocates 1% of the Basic Funds to cash. Given the long-term objectives of the Basic Funds and their limited liquidity needs, the Board believes that a minimal commitment to short-term investments is most appropriate.

These cash reserves, as well as any cash held by stock and bond managers, are invested in a short-term investment fund (STIF) managed by State Street Bank and Trust, the Basic Funds' master custodian. The STIF is managed as a separate account invested under the same state statutes which guide all of the SBI's short-term investments.

INVESTMENT PERFORMANCE

The Board has adopted measurable performance objectives which are consistent with the objectives of the Basic Funds. The

Figure 5.
Total Fund Performance
Fiscal Years 1989 - 1993



	1989	1990	1991	1992	1993	(Annualized) 3 YR.	5 YR.
Total Fund	**15.5%**	**10.8%**	**6.7%**	**14.5%**	**14.4%**	**11.8%**	**12.3%**
Composite Index*	15.4	9.5	7.9	12.1	14.0	11.3	11.8
Stocks, Bonds, Cash Only	**15.9**	**11.9**	**6.8**	**14.6**	**16.2**	**12.4**	**13.0**
Median Fund**	15.0	10.4	7.3	13.3	13.7	11.3	11.9
Inflation	5.2	4.7	4.7	3.1	3.0	3.6	4.1

* As of 6/30/93, the composite was weighted **50%** Wilshire 5000/**10%** EAFE/**29%** Salomon BIG/**4.5%** Wilshire Real Estate Index/**1%** 91 Day T-Bills/**4.5%** Venture Capital Funds/**1.0%** Resource Funds. The composite has been adjusted to reflect the SBI's restrictions on liquor and tobacco stocks through 3/31/93.

** Wilshire Assoc. Trust Universe Comparison Service (TUCS) median master trust portfolio. TUCS contains returns of more than 270 public and corporate funds.

evaluation of performance outcomes relative to established policy is an integral part of the SBI's investment program.

Evaluation Framework

Given the long-term investment time horizon of the Basic Funds, the performance evaluation time period is necessarily long-term as well. Recognizing that excessive attention to performance in the short run can be counterproductive, the SBI evaluates investment performance over a time horizon of approximately five years (roughly corresponding to a typical market cycle). While performance is measured and reviewed quarterly to identify trends and control extreme underperformance, decisions regarding the effectiveness of the Board's investment program are made over a considerably longer period.

The Basic Funds' multi-manager structure requires that investment performance be evaluated on two distinct levels:

- **Total Fund.** Risk-return targets for the total fund ensure that long run strategic decisions which affect the total performance of the Basic Funds are implemented in a manner consistent with their investment policy. Specific standards have been selected to monitor performance on a total fund level.

- **Individual Managers.** Risk-return objectives for the individual managers are designed to ensure that they adhere to their assigned investment roles and to permit an evaluation of the value they add to the SBI's investment program. Benchmarks have been developed for each stock and bond manager to monitor performance at the manager level.

Total Fund Performance

To a significant degree, the **risk objective** of the total fund is set implicitly when the asset allocation and investment management structure are determined. Given the adequate funding levels and long-term investment time horizon of the Basic Funds, the Board believes an above-average risk posture is appropriate.

The Board's objective is to take advantage of the established relationship between risk and return. Higher risk investment strategies have been shown to offer higher long run returns than lower risk strategies. The SBI's risk target therefore, is implemented by committing the majority of the Basic Funds' assets to common stocks.

The Basic Funds' risk objectives are met by attaining the targeted policy asset mix. In this regard, the common stock and bond targets have been achieved. As described in previous sections, the SBI reached its funding target for international stocks over the course of the fiscal year. The Basic Funds began commitments to real estate, venture capital and resource funds in the early to middle 1980's. At the present time, the target allocation to alternative assets includes market values of current investments plus the amount of unfunded commitments. Since the SBI has several outstanding commitments that have not yet been funded, only moderate additional activity is expected in the near term.

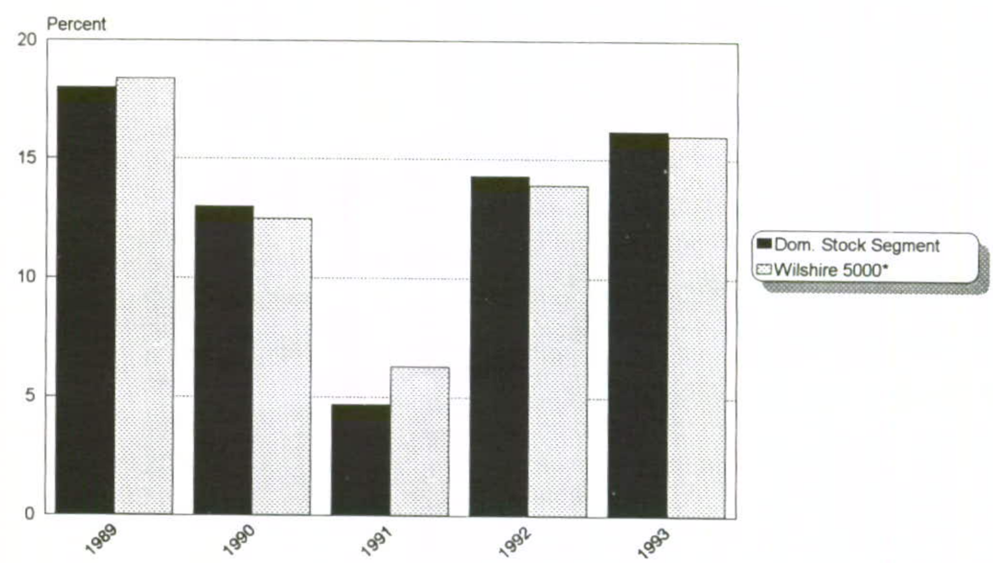
The Basic Funds' **return objectives** are evaluated relative to three specific standards:

- **Real Return.** Over a ten year period, the Basic Funds are expected to produce returns that exceed inflation by 3-5 percentage points annually.

- **Composite Index.** Over a five year period, the returns produced by the total portfolio are expected to exceed those derived from a composite of market indices weighted in the same proportion as the Basic Funds' long-term asset allocation.

- **Median Fund.** Over a five year period, the Basic Funds, excluding alternative assets, are expected to outperform the median return produced by a representative universe of other

Figure 6. Domestic Stock Segment Performance FY 1989 -1993



	1989	1990	1991	1992	1993	(Annualized) 3 YR.	5 YR.
DOM. STOCKS	18.0%	13.0%	4.7%	14.3%	16.2%	11.6%	13.1%
Wilshire 5000	19.5	12.7	7.0	13.9	16.1	12.3	13.8
Wilshire 5000 Adj.*	18.4	12.5	6.3	13.9	16.0	12.0	13.4

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

public and corporate pension and trust funds with a balanced asset mix of stocks and bonds.

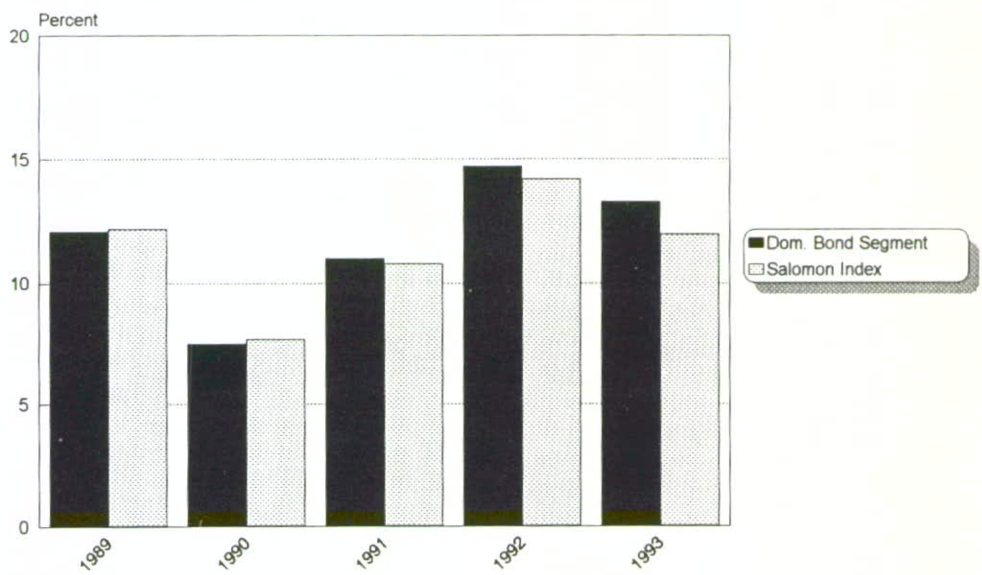
For the period ending June 30, 1993, the Basic Funds exceeded all of these standards:

- **Real Return.** Over the last ten years, the Basic Funds exceeded inflation by 8.1 percentage points annualized. For fiscal year 1993, the Funds' return surpassed inflation by 11.4 percentage points.

- **Composite Index.** Over the last five years, the Basic Funds outperformed their market index composite by 0.5 percentage point annualized. For fiscal year 1993, the Funds exceeded the composite by 0.4 percentage point.

- **Median Fund.** Over the last five years the Basic Funds, excluding alternative assets, were near the top third (35th percentile) of public and corporate pension funds in the Master Trust portion of the Wilshire Associates Trust Universe Comparison Service (TUCS). The Basic Funds ranked near the top third (38th percentile) of TUCS for fiscal year 1993.

Figure 7. Domestic Bond Segment Performance



	1989	1990	1991	1992	1993	(Annualized) 3 Yr.	5 Yr.
DOM. BONDS	12.1%	7.5%	11.0%	14.7%	13.3	13.0%	11.7%
Salomon Index*	12.2	7.7	10.8	14.2	12.0	12.3	11.4

* Salomon Broad Investment Grade Bond Index

Returns from the capital markets were very strong for fiscal year 1993. Both the stock and bond markets exceeded their historical averages for the period ending June 30, 1993. The stock market performed well primarily due to lower interest rates and positive economic news. The bond market also performed well for the fiscal year due to the decline in interest rates. Returns on most financial assets exceeded the rate of inflation for the year.

Over the last five years, the Basic Funds have provided a cumulative return of 78.9%. Annualized returns of 12.3% over the same period continue to exceed the 8.5% actuarial return target by a comfortable margin.

Performance relative to total fund targets is presented in Figure 5. Domestic common stock and bond segment performance are shown in Figure 6 and Figure 7.

Domestic Stock Manager Performance

Two primary long run **risk objectives** have been established for the Basic Funds' domestic common stock managers:

Figure 8. Domestic Stock Manager Performance FY 1993

	Total Portfolio Return	Benchmark Return
Alliance Capital	17.8%	9.2%
Forstmann Leff	12.9	14.3
Franklin Portfolio	28.1	19.9
GeoCapital	15.6	31.5
IDS Advisory	18.5	17.8
Independence Associates	16.1	15.3
Lieber & Company	13.8	19.0
Lynch & Mayer	14.3	18.6
Waddell & Reed	24.0	18.7
Wilshire Associates (tilted index)	15.3	15.7
Basic Funds' Common Stock Segment	**16.4%**	
Stock Segment Performance Standards		
Wilshire 5000	16.1%	
Wilshire 5000 Adjusted*	16.0	
Other Comparisons		
TUCS Median Equity Pool	15.9	
Inflation	3.0%	

* Adjusted for the SBI's liquor and tobacco restrictions through 3/31/93.

- Investment Approach. Each manager (active or passive) is expected to hold a portfolio that is consistent, in terms of risk characteristics, with the manager's stated investment approach.

- **Diversification.** Each active common stock manager is expected to hold a highly non-diversified portfolio, while the index fund manager is expected to hold a well diversified portfolio which tracks its stated target. In the short run, the active common stock managers may depart from their risk targets as part of their specific investment strategies.

The domestic common stock managers successfully fulfilled their long term risk objectives during fiscal year 1993. In general, the managers constructed portfolios consistent with their stated investment approaches and maintained appropriate levels of diversification.

The SBI evaluates a domestic common stock manager's returns against the performance of a customized index constructed to

Figure 9. Domestic Bond Manager Performance FY 1993

	Total Portfolio Return
Ark Asset Management	11.9%
Investment Advisers	16.0
Miller, Anderson & Sherrerd	14.5
Western Asset	14.9
Fidelity Management (enhanced index)	12.5
Lincoln Capital (enhanced index)	12.2
Basic Funds' Bond Segment	**13.3%**
Bond Segment Performance Standards	
Salomon Broad Investment Grade Bond Index	12.0%
Other Comparisons	
TUCS Median Fixed Income Pool	13.3
Inflation	3.0%

represent the manager's specific investment approach. This type of custom index is commonly referred to as a "benchmark portfolio." A **benchmark portfolio** takes into account the equity market forces that at times favorably or unfavorably impact certain investment styles. Thus, an individual benchmark is a more appropriate return target against which to judge a manager's performance than is a broad market index.

From a return perspective, aggregate domestic common stock manager performance was favorable during fiscal year 1993. Five active managers (Alliance, Franklin, IDS, Independence and Waddell & Reed) exceeded their benchmarks for the year. The remainder of the managers underperformed their benchmarks to varying degrees. As a group, the active and passive managers outperformed the broad market by 0.3 percentage points during fiscal year 1993.

Fiscal year 1993 performance data for the individual domestic common stock managers are presented in Figure 8. Historical information is included in the Statistical Data Appendix.

Figure 10. Int'l. Stock Manager Performance FY 1993

	Since Inception	
Baring (active/passive)	5.0%	(since 4/1/93)
Brinson (active/passive)	2.7	(since 4/1/93)
State Street (index)	17.9	(since 10/1/92)
Basic Funds' International Segment	**16.5**	**(since 10/1/92)**
International Segment Performance Standard		
EAFE*	18.5	(since 10/1/92)

* Morgan Stanley Capital International Index of Europe, Australia and the Far East, including dividends and net taxes.

International Stock Manager Performance

The performance of all international stock managers is measured against the Morgan Stanley Capital International Index of Europe, Australia and the Far East (EAFE). This index is capitalization weighted and is measured in US dollar terms.

Performance results for the international stocks managers during fiscal year 1993 are shown in Figure 10. The three month performance of Baring and Brinson was negatively impacted by their underweighting in Japan. State Street's reported underperformance over the nine month period was due entirely to currency pricing differences that occurred during the last month of the fiscal year. Given the high transaction costs associated with funding an international portfolio, the SBI believes that the reported results for the initial months of the program are favorable.

Domestic Bond Manager Performance

The SBI constrains the **risk** of the domestic active bond managers' portfolios to ensure that they fulfill their deflation hedge and total fund diversification roles. The managers are restricted in terms of the duration (average life) of their portfolios and the quality of their fixed income investments.

The domestic bond managers successfully fulfilled their long-term risk objective during fiscal year 1993. In general, the managers constructed portfolios consistent with their stated investment approaches and maintained appropriate levels of quality and duration.

As with the stock segment, the returns of each of the Board's bond managers is compared to an appropriate **benchmark portfolio**. All the domestic bond managers, both active and semi-passive, use the Salomon Broad Investment Grade Bond Index as their performance index. Due to the broad diversification of each manager, customized benchmarks are not necessary.

Relative performance by the domestic bond managers was very favorable. Strong performance by three active managers (Investment Advisers, Miller Anderson and Western) more than offset performance at or below benchmark levels from the remaining manager (Ark). The two semi-passive managers (Fidelity and Lincoln) also provided strong value added for the year. As a group, the active and semi-passive bond managers exceeded the performance of the broad bond market by 1.3 percentage points for the year.

Fiscal year 1993 performance data for the individual domestic bond managers are presented in Figure 9. Historical information is included in the Statistical Data Appendix.

Alternative Asset Manager Performance

The SBI reviews performance of its **real estate** investments relative to two standards:

- the Wilshire Associates Real Estate Index, an index of commingled real estate funds

- inflation, as measured by changes in the Consumer Price Index (CPI)

During fiscal year 1993, the SBI's real estate portfolio outperformed the index but trailed the rate of inflation (SBI real estate -5.8%, Wilshire Real Estate Index -6.2%, CPI 3.0%). Comparisons over the last five years were similar (SBI real estate -1.5% annualized, Wilshire index -2.6% annualized, CPI 4.1% annualized). As the above numbers illustrate, the real estate market as a whole remains in the midst of a significant downturn.

The SBI's **venture capital** portfolio provided a 1.1% return in fiscal year 1993 and 18.5% annualized over the last five years. The **resource** (oil and gas) portfolio returned 8.4% for the year and 6.1% annualized over the last five years. At this time, specific performance objectives have not been established for the venture capital and resource fund managers. The long-term nature of these investments and the lack of comprehensive data on the returns provided by the resource and venture capital markets preclude comprehensive performance evaluation. In the future, as markets for these assets become more institutionalized, the SBI will fully integrate appropriate performance standards for these assets into its performance analysis.

POST RETIREMENT FUND

Benefit Increase Formula

Asset Allocation

Investment Management

Investment Performance

The Post Retirement Investment Fund contains the pension assets of retired public employees covered by nine statewide retirement plans (i.e. the Basic Retirement Funds and the Legislative & Survivors Retirement Fund).

The assets of the Post Fund finance monthly annuities paid to retirees. These annuities may be adjusted upwards over the life of a retiree based on inflation and the investment performance of the Post Fund. On June 30, 1993, the Post Fund had a market value of $8.3 billion with over 65,000 retiree participants.

BENEFIT INCREASE FORMULA

Returns above the actuarially assumed rate of 5% are used to finance lifetime benefit increases for eligible retirees.

New Formula

The benefit increase formula was changed through legislation enacted by the 1992 Legislature. The new formula was effective for fiscal year 1993 and is based on a combination of two components.

- **Inflation Component.** Each year, retirees will receive an inflation-based adjustment equal to 100% of inflation, up to a maximum of 3.5% specified in statute. The inflation component will be granted regardless of investment performance. The limit, or cap, will maintain the actuarial soundness of the entire plan and is the difference between the 8.5% return assumption for the Basic Funds, and the 5.0% return assumption for the Post Fund.

- **Investment Component.** Each year, retirees will also receive an investment-based adjustment, provided net investment gains are above the amount needed to finance the actuarial assumption of 5% and the inflation adjustment. Investment gains and losses will be spread over five years to smooth out the volatility of returns. In addition, all accumulated investment losses must be recovered before an investment-based adjustment is granted.

Because the investment-based component of the new formula will not be implemented fully during the initial years, a temporary transition adjustment may be paid during a phase-in period. The transition adjustment provided in law will be 1.0% for fiscal year 1993, 0.75% for fiscal year 1994, 0.50% for fiscal year 1995 and 0.25% for fiscal year 1996. By statute, retirees will receive either the investment-based component or the transition adjustment, whichever is higher for the respective year.

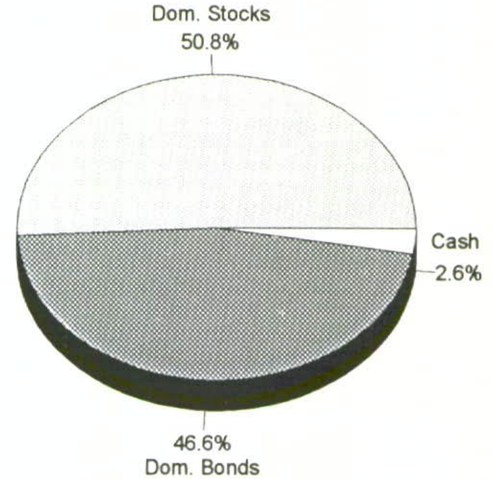
Advantages

The new formula has two primary advantages:

- It provides benefit increases that are more sensitive to inflation than those granted under the old formula.
- It will allow the Post Fund to maximize the long-term earning power of its assets. Without the need to generate the higher levels of current income required under the old formula, the Post Fund can increase its stock exposure and thereby enhance its prospects for higher total rates of return over the long run.

More information on the new benefit increase formula is included in the Statistical Data Appendix.

Figure 11.
Asset Mix
June 30, 1993



	Market Value $Millions	Percent
Common Stocks	$ 4,191	50.8%
Bonds	3,843	46.6
Unallocated Cash	217	2.6
Total	$8,251	100.0%

ASSET ALLOCATION

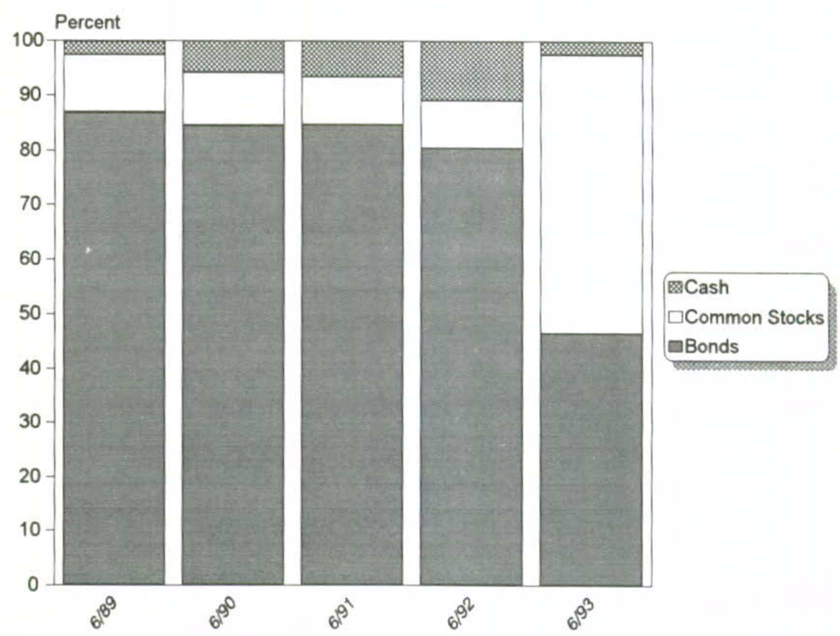
In conjunction with enactment of the new benefit increase formula, the SBI adopted a new long-term asset allocation strategy for the Post Fund with a higher stock exposure. Progress in reaching the new allocation targets proceeded gradually throughout the fiscal year and is shown below:

	6/92	9/92	12/92	3/93	6/93	Target
Stocks	9%	16%	30%	40%	50.8%	50%
Bonds	80	80	66	57	46.6	47
Cash	11	4	4	3	2.6	3

Considering the magnitude of the move (more than $3 billion bonds sold and $3 billion stocks purchased) the change was handled with minimal disruption to the SBI's day-to-day operations. More important, by proceeding gradually, the SBI was able to accomplish the move with no discernable impact on the financial markets.

All bonds were sold in the open market by SBI staff on a competitive bid basis for packages of securities. The stock acquisitions were made through a combination of purchases on the

Figure 12. Historical Asset Mix FY 1989-1993



open market and transfers from the Basic Funds. The transfers were possible as a result of asset allocation changes in the Basic Funds that occurred in tandem with the asset allocation transition in the Post Fund. Since the movement of assets from one fund to the other provided an estimated transaction cost savings of approximately $10 million for each fund compared to the same transaction in the open market, the transfer was advantageous for both the Basic and the Post Funds.

The Post Fund's year-end asset mix is presented in Figure 11. Historical asset allocation data is shown in Figure 12.

INVESTMENT MANAGEMENT

Fiscal year 1993 was a year of transition for the management of the Post Fund as well.

Common Stock Management

Prior to fiscal year 1993, the common stock segment was managed internally by SBI staff, with the focus being on long-term, value-based stock selection. During fiscal year 1993, the stock portfolio was managed by Wilshire Associates. The goal during this year of transition was to replicate the structure and returns of the

Figure 12 (con't). Historical Asset Mix FY 1989-1993

	Market Value June 30,				
	1989	1990	1991	1992	1993
Common Stocks					
$Million	524.0	514.0	523.0	610.0	4,191.0
Percent	10.4	9.6	8.7	8.6	50.8
Bonds					
$Million	4,358.0	4,512.0	5,063.0	5,708.0	3,843.0
Percent	86.9	84.5	84.7	80.5	46.6
Unallocated Cash					
$Million	132.0	313.0	390.0	769.0	217.0
Percent	2.6	5.9	6.6	10.9	2.6
Total Fund					
$Million	5,014.0	5,339.0	5,976.0	7,087.0	8,251.0
Percent	100.0	100.0	100.0	100.0	100.0

S&P 500. The Post Fund's existing portfolio and new market purchases moved toward the S&P 500 during the first half of the fiscal year. For the remainder of the fiscal year, the stock segment was fully indexed to the S&P 500.

Bond Management

The bond segment remained internally managed during this transition year. SBI staff moved the bond portfolio to a market duration in July 1992 and subsequently rebalanced the portfolio on a monthly basis as bonds were liquidated to finance the stock purchases. During the transition, the bond portfolio was targeted to the Shearson Lehman Government/Corporate Bond index.

Future Structure

After the asset allocation transition was complete, the stock and bond assets of the Post Fund were transferred to external managers on July 1, 1993. In future years, the Basics and the Post Fund will share the same groups of external managers.

INVESTMENT PERFORMANCE

The Post Fund generated 12.4% return for the year versus a composite index of 13.1%. The composite index was established to reflect a growing exposure to stocks and decreasing exposure to bonds over the course of the period.

The return for the **domestic common stock segment** for fiscal year 1993 was 10.5% compared to 13.6% return on the S&P 500. The return for the **domestic bond segment** was 13.7% for fiscal year 1993. The Shearson Lehman Government/Corporate bond index return for the same period was 13.1%.

While above market returns in the bond portfolio were offset by below index returns in the stock segment, the SBI believes the overall results are favorable within the context of the massive asset allocation transition that occurred during the year.

Benefit Increase

The Post Fund will provide a benefit increase of 6.0% for fiscal year 1993. As noted earlier, this increase is comprised of two components:

- **Inflation adjustment** of 2.8% which is equal to 100% of the reported Consumer Price Index for wage earners (CPI-W) increase for the twelve months ending June 30, 1993.

- **Investment adjustment** of 3.2%. This represents one-fifth of the market value in excess of the amount needed to cover the actuarial assumed rate of return (5.0%) and the inflation adjustment (2.8%).

Benefit increases granted for the past ten years are shown below. Prior to fiscal year 1993, the benefit increase formula was dependent on the level of excess realized income generated by the Post Fund. The 6.0% increase granted for fiscal year 1993 represents the first post retirement adjustment provided under the new benefit increase formula described above.

Figure 13. Historical Benefit Increases Granted

Fiscal Year	Benefit Increase*
1984	6.9%
1985	7.9
1986	9.8
1987	8.1
1988	6.9
1989	4.0
1990	5.1
1991	4.3
1992	4.6
1993**	6.0

* Payable January 1 of the following calendar year.
** First year of the new benefit increase formula.

SUPPLEMENTAL INVESTMENT FUND

Income Share Account

Growth Share Account

Common Stock Index Account

Bond Market Account

Money Market Account

Fixed Interest Account

The Minnesota Supplemental Investment Fund is a multi-purpose investment program that offers a range of investment options to state and local public employees. The different participating groups use the Supplemental Fund for a variety of purposes:

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

The Supplemental Investment Fund serves more than 24,000 individuals. On June 30, 1993, the market value of the entire fund was $599 million.

Fund Structure

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

Fund Management

The investment objectives, asset allocation, investment management and investment performance of each existing account in the Supplemental Fund are explained in the following sections.

Range of Investment Options

Participants in the Supplemental Fund have six different investment options:

- **Income Share Account**, a balanced portfolio of stocks and bonds
- **Growth Share Account**, a portfolio of actively managed common stocks
- **Common Stock Index Account,** a passively managed common stock portfolio
- **Bond Market Account,** an actively managed fixed income portfolio
- **Money Market Account,** a portfolio of liquid, short-term debt securities
- **Fixed Interest Account,** an investment option utilizing guaranteed investment contracts (GIC's)

Share Values

Each account in the Supplemental Fund establishes a share value and participants may buy or sell shares monthly, based on the most recent unit value.

In the Income Share Account, the Growth Share Account, the Common Stock Index Account and the Bond Market Account, shares are priced monthly based on the market value of the entire account. Individuals measure the performance of these accounts by changes in share values, which in turn are a function of the income and capital appreciation (or depreciation) generated by the securities in the accounts.

In the Money Market Account and the Fixed Interest Account, share values remain constant and the accrued interest income is credited to the accounts through the purchase of additional shares at predetermined intervals.

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

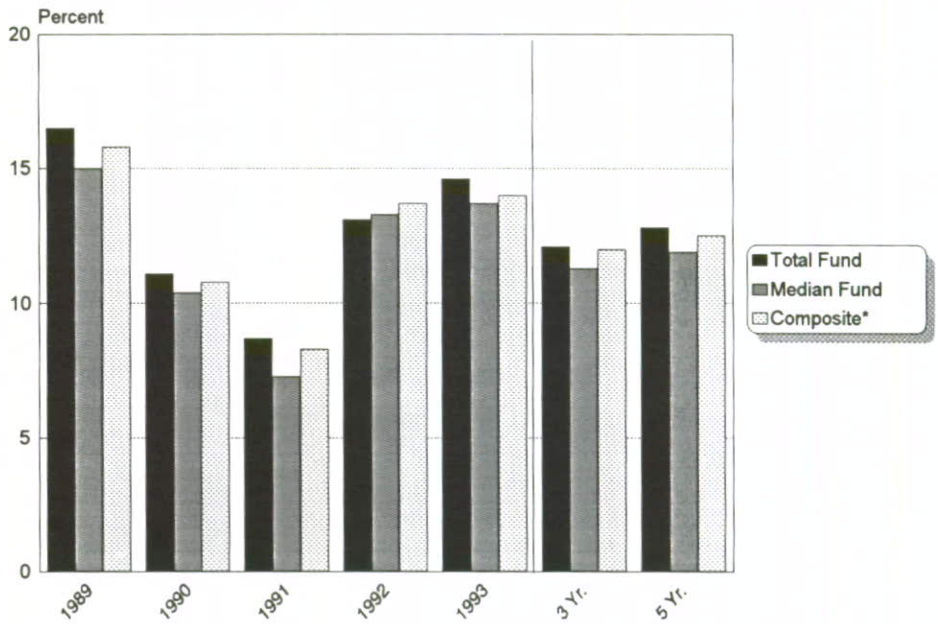
INCOME SHARE ACCOUNT

Objective

The $307 million Income Share Account resembles the Basic Retirement Funds in terms of investment objectives. The Account seeks to maximize long-term inflation-adjusted rates of return. The Income Share Account pursues this objective within the constraints of protecting against disastrous financial environments and limiting short run portfolio return volatility.

The SBI invests the Income Share Account in a balanced portfolio of common stocks and fixed income securities. The Account's policy asset allocation calls for the following long-term asset mix: **60% domestic common stocks, 35% bonds, 5% cash equivalents.** Common stocks provide the potential for significant long-term capital appreciation, while bonds provide both a hedge against deflation and the diversification needed to limit excessive portfolio return volatility.

Figure 14. Income Share Account FY 1989-1993



	1989	1990	1991	1992	1993	3 YR. (Annualized)	5 YR. (Annualized)
TOTAL ACCOUNT	**16.5%**	**11.1%**	**8.7%**	**13.1%**	**14.6%**	**12.1%**	**12.8%**
Median Fund*	15.0	10.4	7.3	13.3	13.7	11.3	11.9
Composite**	15.8	10.8	8.3	13.7	14.0	12.0	12.5

* TUCS Median Master Trust

** **60%** Wilshire 5000 Adj./**35%** Salomon Broad Investment Grade Bond Index/**5%** 91 day T-Bills. The Wilshire 5000 has been adjusted to reflect the SBI's restrictions on liquor and tobacco stocks through 3/31/93.

Management

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

Performance

Similar to the other SBI funds which utilize a multi-manager investment structure, the Board evaluates the performance of the Income Share Account on two levels:

- **Total Account.** The Income Share Account is expected to exceed the returns of a composite of market indices weighted in the same proportion as its policy asset allocation. In addition, the Income Share Account's performance is expected to exceed the performance of the median fund from a universe of other balanced funds over the long-term.

- **Individual Manager.** The passive stock manager is expected to track closely the performance of the Wilshire 5000, adjusted for the SBI's liquor and tobacco restrictions. The internal bond manager for the Account is expected to exceed the performance of the Salomon Broad Investment Grade Bond Index.

The Income Share Account provided a return of 14.6% for fiscal year 1993, outperforming its market index composite and the median fund. A five year history of performance results is presented in Figure 14.

GROWTH SHARE ACCOUNT

Objective

The Board has established above-average capital appreciation as the primary investment objective of the $98 million Growth Share Account. To achieve this objective, the Account maintains a large equity exposure with the following long-term asset allocation: **95% domestic common stocks, 5% cash equivalents**.

The small cash equivalents component represents the normal cash reserves held by the Growth Share Account as a result of new contributions not yet allocated to common stocks. The Growth Share Account's asset mix may vary from its assigned policy allocation at times, depending on the Account managers' near-term outlook for the capital markets.

Because of its substantial common stock policy allocation, the Growth Share Account's returns are more variable than those of the balanced Income Share Account. The Board expects higher long run returns from the Growth Share Account's investments to compensate for the additional variability of returns.

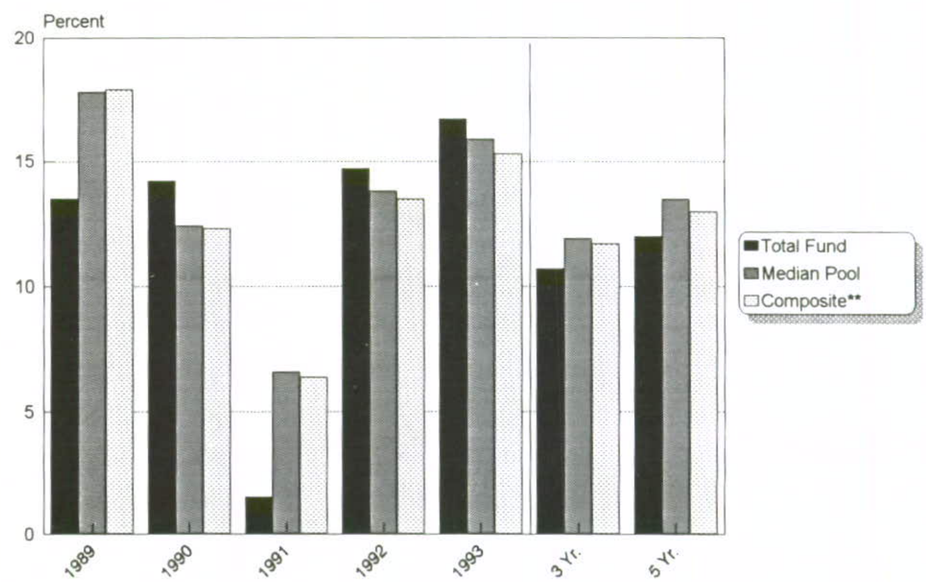
Management

The SBI has assigned the entire common stock portfolio of the Growth Share Account to external managers. The allocation to active common stock managers, rather than to an index fund, reflects the more aggressive investment policy of the Growth Share Account. Currently, these assets are managed by the same active managers utilized by the Basic Retirement Funds.

Performance

Like the Income Share Account, the Board evaluates the performance of the Growth Share Account on two levels:

Figure 15.
Growth Share Account
FY 1989-1993



	1989	1990	1991	1992	1993	(Annualized) 3 YR.	5 YR.
TOTAL ACCOUNT	**13.5%**	**14.2%**	**1.5%**	**14.7%**	**16.7%**	**10.7%**	**12.0%**
Median Fund*	17.8	12.4	6.6	13.8	15.9	11.9	13.5
Composite**	17.9	12.3	6.4	13.5	15.3	11.7	13.0

* TUCS Median Managed Equity Portfolio

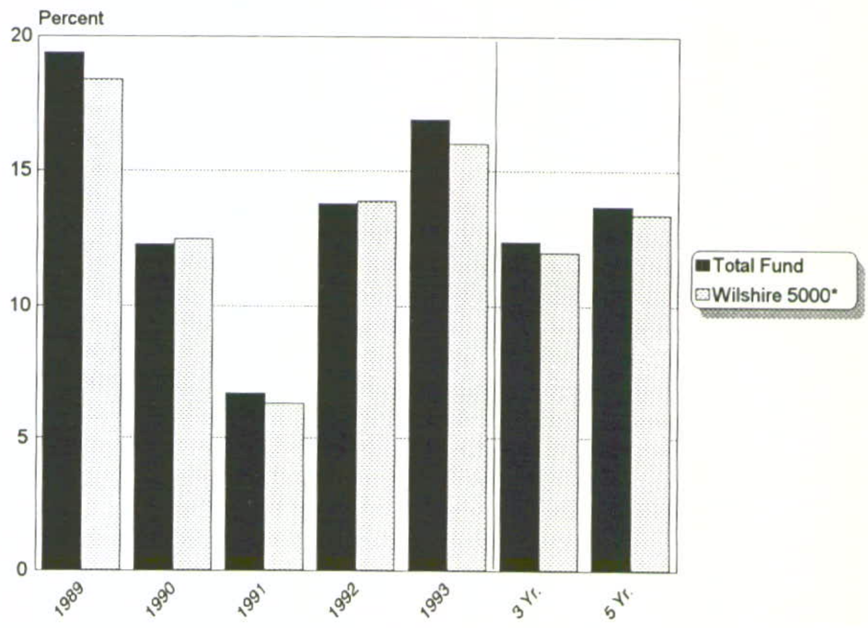
** 95% Wilshire 5000 Adjusted/5% 91 Day T-Bills. The Wilshire 5000 has been adjusted to reflect the SBI's restrictions on liquor and tobacco stocks through 3/31/93.

- **Total Account.** The Growth Share Account is expected to exceed the returns of a composite of market indices weighted in the same proportion as its policy asset allocation. The Account's performance is also expected to surpass the performance of the median portfolio from a universe of managed equity portfolios.

- **Individual Manager.** Performance objectives for the external managers are described in the Basic Retirement Funds discussion.

The Growth Share Account provided a return of 16.7% for the fiscal year, outperforming both the composite and median manager. The Account held sizable positions in the financial sector of the stock market which performed very well during the year. A five year history of performance results is shown in Figure 15.

Figure 16.
Common Stock Index Account
FY 1989-1993



	1989	1990	1991	1992	1993	(Annualized) 3 Yr.	5 Yr.
TOTAL ACCOUNT	**19.4%**	**12.3%**	**6.7%**	**13.8%**	**16.9%**	**12.4%**	**13.7%**
Wilshire 5000 Adj.*	18.4	12.5	6.3	13.9	16.0	12.0	13.4

* Adjusted for the SBI's liquor and tobacco restrictions through 3/31/93.

COMMON STOCK INDEX ACCOUNT

The Common Stock Index Account began accepting contributions at the end of July 1986. At the end of fiscal year 1993, it had a market value of $36 million.

Objective

The investment objective of the Common Stock Index Account is to generate returns that match the performance of the common stock market, as represented by the Wilshire 5000. To accomplish this objective, the SBI allocates all of the Common Stock Index Account's assets to **passively managed domestic common stocks.**

This 100% common stock allocation means that the Common Stock Index Account's returns, like those of the Growth Share Account, are more variable than the returns produced by the balanced Income Share Account. The Board expects that this greater variability in returns will be compensated over the long run by higher returns.

Management

The Common Stock Index Account is invested entirely by Wilshire Associates, the SBI's passive stock manager.

Performance

The performance objective of the Common Stock Index Account is straightforward. The Account is expected to track closely the performance of the Wilshire 5000 adjusted for the SBI's liquor and tobacco restrictions. The SBI recognizes that the Account's returns may deviate slightly from those of the Wilshire 5000 due to the effects of management fees, timing of new contributions and tracking error.

During fiscal year 1993, the Common Stock Index Account produced a return of 16.9%, 0.9 percentage point above the Wilshire 5000 Adjusted. This is somewhat higher than the expected tracking error for this Account. Total account results for the last five years are shown in Figure 16.

BOND MARKET ACCOUNT

The Bond Market Account began accepting contributions at the end of July 1986. At the end of fiscal year 1993, the market value of the Account was $19 million.

Objective

The Bond Market Account is **invested entirely in investment-grade government bonds, corporate bonds and mortgage securities** with intermediate to long maturities. As such, it is a more conservative investment alternative than the accounts described in the previous sections and provides participants the opportunity to further diversify their assets.

The Account earns investment returns through interest income and capital appreciation. Because bond prices move inversely with interest rates, the Account entails some risk for investors. However, historically, it represents a lower risk alternative than the investment options that include only common stocks.

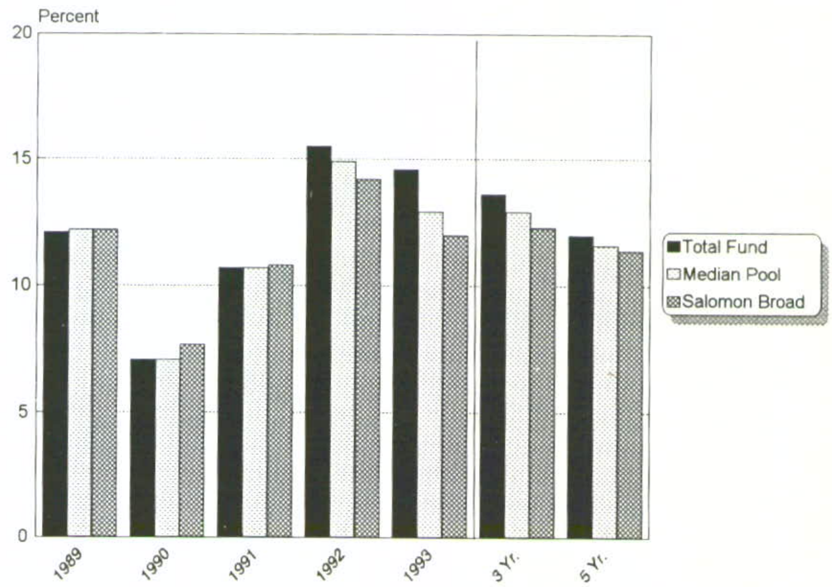
Management

The SBI has assigned the entire bond portfolio to external managers. These assets are managed by the same active managers utilized by the Basic Retirement Funds. A discussion of the SBI's active bond managers is presented in the Basic Funds section.

Performance

The Bond Market Account is expected to exceed the performance of the bond market, as represented by the Salomon Broad Investment Grade Bond Index. For fiscal year 1993, the Bond Market Account outperformed this target by a significant margin, with a 14.6% return compared to the Salomon index return of 12.0%. Total account results for the last five years are shown in Figure 17.

Figure 17. Bond Market Account FY 1989-1993



	1989	1990	1991	1992	1993	(Annualized) 3 Yr.	5 Yr.
TOTAL ACCOUNT	**12.1%**	**7.1%**	**10.7%**	**15.5%**	**14.6%**	**13.6%**	**12.0**
Median Pool*	12.2	7.1	10.7	14.9	12.9	12.9	11.6
Salomon BIG**	12.2	7.7	10.8	14.2	12.0	12.3	11.4

* TUCS Median Fixed Income Pool

** Salomon Broad Investment Grade Index

MONEY MARKET ACCOUNT

Objective

The Money Market Account invests solely in **short-term, liquid debt securities**. The Account's investment objectives are to preserve capital and offer competitive money market returns. At the end of fiscal year 1993, the Money Market Account had a market value of $67 million.

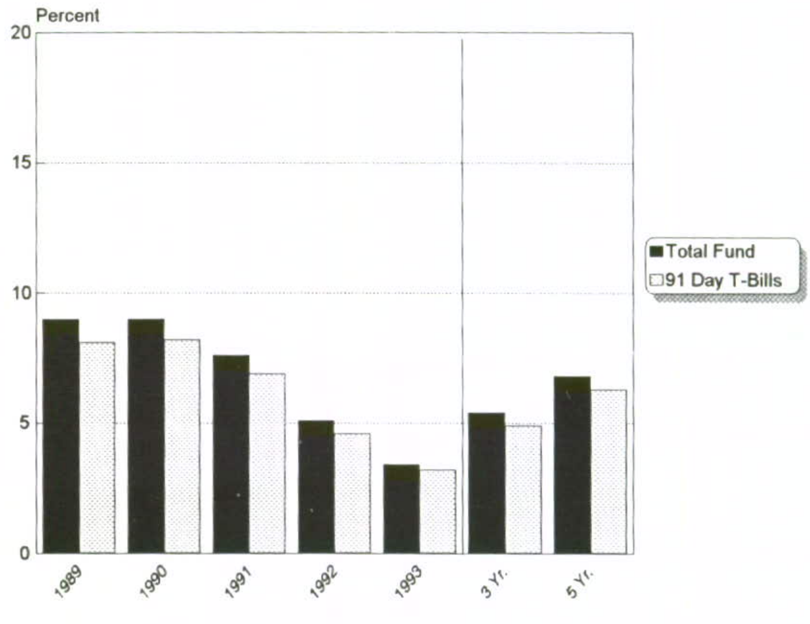
Management

The Account utilizes the same short-term investment manager as the Basic Retirement Funds, which is State Street Bank and Trust Company.

Performance

The Account is expected to produce returns competitive with those available from short-term debt securities. The Money Market Account exceeded that target in fiscal year 1993 with a 3.4% return versus a return on 91 Day Treasury Bills of 3.2%. Total account results for prior years are shown in Figure 18.

Figure 18.
Money Market Account
FY 1989-1993



	1989	1990	1991	1992	1993	(Annualized) 3 Yr.	5 Yr.
Total Account	**9.1%**	**9.0%**	**7.6%**	**5.1%**	**3.4%**	**5.4%**	**6.8%**
91 Day T-Bills	8.1	8.2	6.9	4.6	3.2	4.9	6.3

FIXED INTEREST ACCOUNT

Objective

The Fixed Interest Account (formerly named the Guaranteed Return Account) opened for subscription in November 1986. The Fixed Interest Account is designed to offer participants a fixed rate of return for a specified period of time with negligible risk. At the end of fiscal year 1993, the account totaled $71 million.

Management

The SBI invests the Fixed Interest Account in **three-year guaranteed investment contracts** (GIC's) offered by major U.S. insurance companies and banks. Annually, the SBI accepts bids from banks and insurance companies that meet financial quality criteria defined by State statute. Generally, the insurance company or bank bidding the highest three-year GIC interest rate will be awarded the contract for the three-year period. Participants making contributions over the following twelve months receive the fixed rate for the remainder of the three year contract period.

Within the constraints of permitting only top-rated U.S. insurance companies and banks to bid on the GIC contracts, the SBI desires to maximize the three-year interest rate offered to Fixed Interest Account participants. The Board believes the competitive bidding presents the most effective method of achieving this goal.

Performance

The Board was satisfied with the winning bid of 5.280% on the 1992-1995 GIC, which was 53 basis points over prevailing interest rates on three-year Treasury Notes at the time of the bid.

Contract Period	Annual Effective Interest Rate
Nov. 1, 1990 - Oct. 31, 1993	8.875%
Nov. 1, 1991 - Oct. 31, 1994	6.634
Nov. 1, 1992 - Oct. 31, 1995	5.280

The 1990-1993 contract was awarded to two firms: Mutual of America, New York, NY and Provident National, Chattanooga, TN. Two firms were also awarded the 1991-1994 contract: Continental Assurance, New York, NY and Provident National, Chattanooga, TN. The 1992-1995 contract was awarded to Norwest Bank, Minneapolis, MN.

PERMANENT SCHOOL TRUST FUND

Investment Objectives

Asset Allocation

Investment Management

Investment Performance

The Permanent School Trust Fund is a trust fund created by the Minnesota State Constitution and designated as a long-term source of revenue for public schools. Proceeds from land sales, mining royalties, timber sales, lakeshore and other leases are invested in the Fund. Income generated by the Fund's assets is used to offset state school aid payments. On June 30, 1993 the market value of the Fund was $456 million.

INVESTMENT OBJECTIVES

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

Investment Constraints

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

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

ASSET ALLOCATION

The SBI maximizes current income by investing all of the Permanent School Trust Fund's assets in fixed income securities.

The SBI has a strong incentive not to invest in equity assets for several reasons:

- Common stock yields are considerably lower than bond yields. Thus, common stocks generate less current income than bonds.

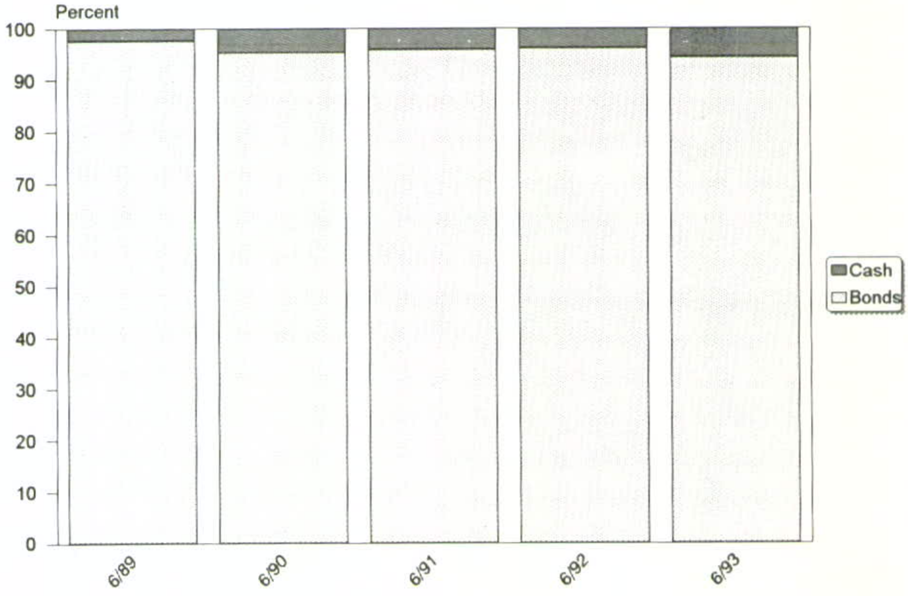
- Stock prices are highly volatile and at times may produce realized capital losses that will reduce spendable income.

- Net capital gains become part of the Permanent School Trust Fund's principal. Therefore, the effect of the volatility of common stock prices on the Permanent School Fund's spendable income cannot be smoothed out by including past realized capital gains in spendable income.

Considering these constraints, the Board completely eliminated the Fund's small common stock component in fiscal year 1986, investing the proceeds in fixed income securities. Historical asset mix data for the Fund are shown in Figure 19.

Legislation was enacted during fiscal year 1992 to change the amortization period for realized gains and losses from five to ten years. This change will make equities a more attractive investment for the Fund. The SBI hopes to re-introduce equities to the portfolio in future years in order to grow the principal over time. Since this

Figure 19. Historical Asset Mix FY 1989-1993



change would reduce spendable income over the near term, the transition should not occur without the knowledge and agreement of the Legislature.

INVESTMENT MANAGEMENT

SBI staff manage all assets of the Permanent School Trust Fund. Given the existing legal restrictions of the Fund, external managers would find it extremely difficult to invest the Fund's portfolio.

The Fund's emphasis on producing high levels of current spendable income through "buy and hold" investments is not compatible with the investment style of most money managers. In addition, with the move to an all fixed income portfolio, SBI staff management of the Fund is the most cost-effective approach.

The staff manage the Fund's bond portfolio primarily through a "buy-and-hold," laddered maturity approach. Virtually all securities are held to maturity after purchase. To minimize reinvestment risk and reduce exposure to dramatic interest rate fluctuations, the portfolio purchases securities with staggered maturity dates.

Figure 19 (con't). Historical Asset Mix FY 1989-1993

	Market Value June 30,				
	1989	**1990**	**1991**	**1992**	**1993**
Bonds					
$Million	375.0	359.0	368.2	402.3	430.2
Percent	97.5	95.2	95.8	96.0	94.3
Unallocated Cash					
$Million	9.6	18.2	23.7	16.6	25.9
Percent	2.5	4.8	4.2	4.0	5.7
Total Fund					
$Million	384.6	377.2	391.9	418.9	456.1
Percent	100.0	100.0	100.0	100.0	100.0

INVESTMENT PERFORMANCE

The Permanent School Trust Fund's investment objective is to maximize spendable income, within the constraint of maintaining adequate portfolio quality.

From a total portfolio **risk perspective,** the Fund is very conservatively structured, as its target asset mix calls for a full commitment to fixed income securities. Within the bond portfolio, SBI staff control risk by establishing a laddered portfolio structure, thereby avoiding significant interest rate bets. Further, the staff purchase only investment-grade bonds and seek to maintain an overall portfolio quality rating of at least AA.

From a **return perspective,** the Board is not concerned with the Fund's total rate of return. Market value changes have no effect on the Fund's ability to produce spendable income. Spendable income is affected only to the extent that any securities are sold at a loss. Thus, the Fund's return objective is to maintain a high current yield on new investments.

The Fund achieved its risk-return performance objectives during the year. On June 30, 1993, the Fund's bond portfolio had a duration of 7.8 years, an average quality rating of AAA and a current yield of 7.5%. (The total rate of return for the Fund was 16.1% for fiscal year 1993 and 12.8% annualized for FY89-93.)

Figure 20. Bond Portfolio Statistics June 30, 1993

Value at Market	$423,368,924
Value at Cost	357,783,350
Average Coupon	8.81%
Current Yield	7.54
Yield to Maturity	6.54
Current Yield at Cost	8.92
Time to Maturity	14.75 Years
Average Duration	7.76 Years
Average Quality Rating	AAA
Number of Issues	121

Spendable income generated by the portfolio over the last five fiscal years is shown below:

Fiscal Year	**Millions**
1989	$33
1990	$33
1991	$34
1992	$35
1993	$34

ASSIGNED RISK PLAN

Investment Objectives

Asset Allocation

Investment Management

Investment Performance

The Minnesota Workers Compensation Assigned Risk Plan was established in 1983 to provide workers' compensation coverage to Minnesota employers rejected by a licensed insurance company. The Plan provides disability income, medical expenses, retraining expenses and death benefits, with payments being made either periodically or in lump sum.

The Assigned Risk Plan operates as a non-profit, tax exempt entity and is administered by the Department of Commerce. Investment management responsibility for the Assigned Risk Plan was transferred from the Department of Commerce to the State Board of Investment (SBI) effective May 1991. On June 30, 1993 the market value of the Plan's portfolio was $402 million.

INVESTMENT OBJECTIVES

The SBI recognizes that the Assigned Risk Plan has limited tolerance for risk due to erratic cash flows, no allowance for surplus, and generally short duration liabilities.

The SBI has therefore established two investment objectives for the Plan:

- to minimize mismatch between assets and liabilities
- to provide sufficient liquidity (cash) for payment of on-going claims and operating expenses.

Performance relative to these objectives is measured against a composite index that reflects the asset allocation of the portfolio.

ASSET ALLOCATION

The SBI believes that due to the uncertainty of premium and liability cash flows, the Plan should be invested very conservatively. The bond segment is invested to fund the shorter-term liabilities (less than 10 years) and the common stock segment invested to fund the longer-term liabilities. This creates a high fixed income allocation which minimizes the possibility of a future fund deficit.

The smaller equity exposure provides higher expected returns and hedges some of the inflation risk associated with the liability stream. In the future, the actual asset mix will fluctuate in reponse to changes in the liability stream projected by the Plan's actuary and further analysis by the investment manager and SBI staff.

Figure 22 presents the allocation targets and actual asset mix of the Assigned Risk Plan at the end of fiscal year 1993.

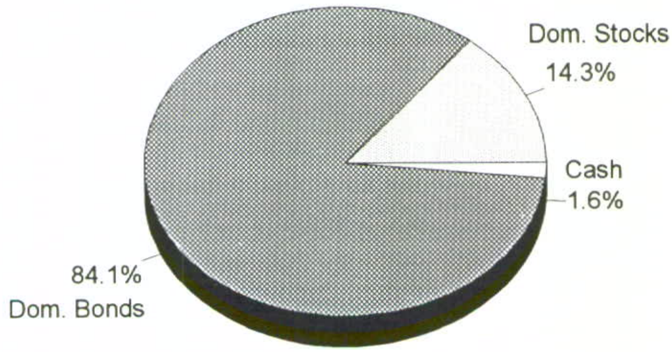
INVESTMENT MANAGEMENT

All assets in the Assigned Risk Plan are managed externally by a single manager. Voyageur Asset Management, Minneapolis, MN, has managed the portfolio since the SBI assumed investment responsibility for the Plan in May 1991.

Bond Segment

During fiscal year 1993 the Board allocated 85% of the Assigned Risk Plan to bonds to fund the shorter-term liabilities of the Plan. The duration of the bond segment was approximately 3 years. The

Figure 21.
Asset Mix
June 30, 1993



	Market Value $ Millions	Actual Asset Mix	Policy Target
Dom. Common Stocks	$ 57	14.3%	15.0%
Dom. Bonds	338	84.1	85.0
Unallocated Cash	7	1.6	0.0
Total	$402	100.0%	100.0%

bond segment is actively managed to add incremental value through sector, security and yield curve decisions.

Stock Segment

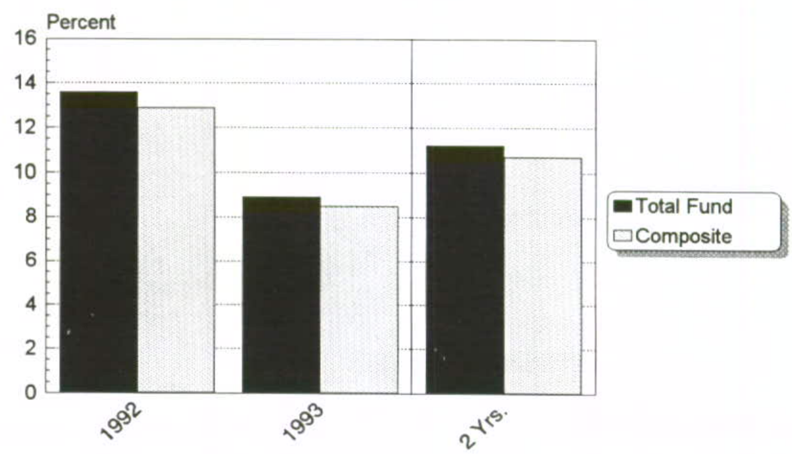
During fiscal year 1993 the Board allocated 15% of the Assigned Risk Plan to common stocks to fund the longer-term liabilities of the Plan. While the SBI believes that the common stock segment should provide broad market coverage, the segment is actively managed to add incremental value over the long run.

INVESTMENT PERFORMANCE

Due to the focus on liability matching, the composition of the Assigned Risk Plan's investment portfolio is conservatively structured. While the portfolio is actively managed, return enhancement plays a secondary role.

The Assigned Risk Plan utilizes a customized benchmark which is weighted to reflect the asset allocation targets of the Plan:

Figure 22. Performance of the Assigned Risk Plan



	1992	1993	Annualized 2 Yrs.
Total Account	**13.6%**	**8.9%**	**11.2%**
Composite	12.9	8.5	10.7
Equity Segment	**11.9**	**6.0**	**8.9**
EquityBenchmark	13.3	5.9	9.5
Bond Segment	**14.2**	**9.6**	**11.9**
Benchmark	12.8	8.9	10.8

- The equity component consists of stocks rated "A" or greater by Standard & Poors. It does not include utility stocks or stocks that are restricted by the SBI's investment guidelines.

- The fixed income component reflects the duration target established for the bond segment (approximately 3 years) as well as the manager's suggested sector allocation.

During fiscal year 1993, the bond segment performed well compared to its benchmark (9.6% actual vs. 8.9% benchmark) due to the manager's decision to hold a duration slightly longer than the benchmark as interest rates declined. The investment manager also overweighted the better performing corporate sector and underweighted the lower performing government sector. The common stock segment essentially matched its benchmark (6.0% actual vs. 5.9% benchmark).

Overall, the Assigned Risk Plan provided a return of 8.9% for fiscal year 1993, outperforming its composite index by 0.4 percentage point. Performance results are presented in Figure 23.

ENVIRONMENTAL TRUST FUND

Investment Objectives

Asset Allocation

Investment Management

Investment Performance

The Environmental Trust Fund was established in 1988 by the Minnesota Legislature to provide a long-term, consistent, and stable source of funding for activities that protect and enhance the environment. In 1990, a constitutional amendment was approved that mandates that 40 percent of the net proceeds from the state lottery be credited to the Fund until the year 2001. The Legislature may fund projects from a portion of revenue deposited in the Fund through 1997 and, thereafter, from interest earnings on the principal of the Fund.

By statute, the State Board of Investment (SBI) invests the assets of the Environmental Trust Fund. On June 30, 1993 the market value of the Fund was $47 million.

INVESTMENT OBJECTIVES

The Environmental Trust Fund's investment objective is to produce a growing level of income, within the constraints of maintaining adequate portfolio quality and liquidity.

Investment Constraints

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

ASSET ALLOCATION

By the start of fiscal year 1993, the Fund had received sufficient contributions to warrant an investment policy that incorporated allocations to longer-term assets such as stocks and bonds. SBI staff worked with the Legislative Commission on Minnesota Resources to establish an asset allocation policy that is consistent with the Commission's goals for spendable income and growth of the Fund.

Over the long-term, the principal of the Fund will be invested in a balanced portfolio with approximately one-half of the portfolio allocated to common stocks. The Commission endorsed this approach in a resolution passed on February 6, 1992.

However, prior to this resolution, the Legislature enacted spending plans for fiscal year 1993 that required a higher level of income than could be generated by a balanced portfolio of stocks and bonds. As a result, the Commission agreed with the SBI staff's recommendation to invest the portfolio entirely in fixed income securities throughout fiscal year 1993. During fiscal year 1994, the SBI will introduce equities into the portfolio and move toward a 50% allocation to domestic common stocks.

INVESTMENT MANAGEMENT

SBI staff manage all the assets of the Environmental Trust Fund. During fiscal year 1993, the Fund's need to generate a specific level of income resulted in a fixed income portfolio with higher weightings in corporate and mortgage securities, relative to the Salomon Broad Investment Grade (BIG) index.

Beginning in fiscal year 1994, the stock segment of the Fund will be invested in an index fund designed to match the performance of the S&P 500. The bond segment will be targeted toward the Salomon BIG Index.

INVESTMENT PERFORMANCE

As referenced above, the near-term goals for the Fund required the entire portfolio to be invested in fixed income securities during fiscal year 1993. Within the bond portfolio segment, the SBI staff controlled risk by diversifying among the major bond sectors and by limiting specific issue risk through smaller individual issue positions.

From a return perspective, the Board met the Fund's spendable income goal for fiscal year 1993. By purchasing longer duration securities at attractive yields early in the fiscal year the Fund met the targeted income level. On June 30, 1993, the Fund's bond portfolio had a duration of 4.36 years, an average quality rating of AAA and a current yield of 6.59%.

Figure 23. Bond Portfolio Statistics June 30, 1993

Value at Market	$46,747,879
Value at Cost	$45,000,000
Average Coupon	7.00%
Current Yield	6.59
Yield to Maturity	6.01
Current Yield at Cost	6.85
Time to Maturity	6.11 years
Average Duration	4.36 years
Average Quality Rating	AAA
Number of Issues	17

CASH MANAGEMENT

Internal Cash Pools

Securities Lending Program

Certificate of Deposit Program

INTERNAL CASH POOLS

State Cash Accounts

The State Board of Investment (SBI) manages the cash balances in more than 400 state agency accounts with the objectives of preserving capital and providing competitive money market returns. To this end, the SBI invests these cash accounts in short-term, liquid, high quality debt securities. These investments include U. S. Treasury and Agency issues, repurchase agreements, bankers acceptances, and commercial paper. On June 30, 1993, the combined value of all agency cash balances was $3.1 billion.

Pool Structure

Most of the cash accounts are managed by SBI staff through two pooled investment vehicles, which operate much like money market mutual funds:

- **Trust Fund Pool.** This pool contains cash balances of retirement-related accounts managed internally as well as the cash in the Permanent School Fund. The Trust Fund Pool had an average daily balance of $68 million during the year.

- **Treasurer's Cash Pool.** This pool contains cash balances from the Invested Treasurer's Cash and other accounts necessary for the operation of state agencies. The Treasurer's Cash Pool had an average daily balance of $1.8 billion during the year.

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

Performance

For fiscal year 1993, the Trust Fund Pool and the Investment Treasurer's Cash Pool outperformed the total return on 91 Day Treasury Bills:

Trust Fund Pool	**5.2%**
Treasurer's Cash Pool	**4.8%**
91 Day Treasury Bills	3.1%

During fiscal year 1993, the Board approved a new benchmark for the Treasurer's Cash Pool. The benchmark is intended to reflect fluctuating cash needs, while also more appropriately measuring the yield advantage present from the maturity structure typically employed for the pooled fund. For the benchmark, 75% of the return is tied to the SBI's custodian Bank's Short Term Investment Fund and 25% is tied to the return of the Merrill Lynch 1 to 3 year index. Measurement against this benchmark began April 1, 1993. For the quarter ending June 30, 1993, the Treasurer's Cash Pool outperformed the benchmark by 0.2 percentage point.

SECURITIES LENDING PROGRAM

As part of its cash management program, the SBI participates in securities lending programs in which securities held by the SBI are loaned to banks and security dealers for a daily fee. These loans are fully collateralized. Currently, the majority of the SBI's securities lending activity is undertaken by the SBI's master custodian bank, State Street Bank and Trust. Securities lending generated additional income of over $5 million during fiscal year 1993 for all portfolios controlled by the SBI.

CERTIFICATE OF DEPOSIT PROGRAM

The SBI also manages a certificate of deposit (CD) program in which it purchases CD's from Minnesota banks and savings and loan institutions. The SBI receives a market rate of return on these investments, using the average secondary CD market rate quoted by the New York Federal Reserve Bank. Only the cash reserves of the Basic Retirement Funds are used in the program. The Federal Deposit Insurance Corporation (FDIC) provides $100,000 in insurance coverage for each retirement plan in the Basic Funds in each of the financial institutions participating in the program. Therefore, the maximum CD investment in any financial institution is $800,000. Within these limits, all CD's purchased by the SBI are fully insured by the FDIC.

The Minnesota Certificate of Deposit program provides a reliable source of capital to Minnesota financial institutions, regardless of size, many of which do not have access to the national CD market. The Board designed the program so that no single institution is favored in the allocation of assets.

During fiscal year 1993, the SBI purchased over $122 million of CD's from Minnesota financial institutions. Since it began the program in 1980, the SBI has purchased over $1.7 billion of CD's from over 475 financial institutions throughout the state.

MAJOR POLICY INITIATIVES

Legislative Update

Manager Searches

403(b) Vendor Selection

Police and Fire Fund Activity

Resolution on South Africa

Mandate on Northern Ireland

Guidelines on International Investing

Proxy Voting

LEGISLATIVE UPDATE

SBI Proposed Legislation

The 1993 Legislature enacted several measures that affect the State Board of Investment (SBI). Most of the changes proposed by the SBI were of a technical nature, but all are important to the on-going management of the funds under the Board's control. All changes included in the SBI's legislative proposal are contained in *Laws of Minnesota 1993,* Chapter 300. The changes enacted by the Legislature are summarized below:

Tax Sheltered Savings Programs. The SBI was given authority to retain consultants to assist the SBI in reviewing and selecting insurance company vendors for various tax deferred savings programs for public employees (i.e., 403(b) program, Deferred Compensation Plan, and IRAP plans for Community College and State University employees).

Certificate of Deposit Program. The new law removes language concerning unworkable collateral requirements in the SBI's certificate of deposit program.

Environmental Trust Fund. The law corrected language in 1992 legislation making the amortization period for gains and losses in the Environmental Trust Fund the same as for the Permanent School Fund, which was the SBI's original intention.

General Investment Authority Clarification. The legislation clarifies that the SBI may invest in securities traded on contract markets or purchase securities from financial institutions regulated by governmental agencies. This change in wording will give the SBI more trading flexibility, particularly with respect to derivative and currency transactions.

Investment Advisory Council. The new law exempts the Investment Advisory Council (IAC) from the general statutory sunset provision covering advisory boards and makes the IAC a permanent advisory board.

Authority to Commingle Pools for Non-Pension Assets. The new authority allows the SBI to pool the assets of various non-pension entities in the same manner the SBI currently commingles pension assets.

Police and Fire Fund Assets. Local police and fire plans may no longer invest non-retirement assets in the Supplemental Investment Fund.

MANAGER SEARCHES

Manager search activity was a major focus during fiscal year 1993. The SBI convened search committees to begin the international manager selection process for the Basic Retirement Funds. The SBI also conducted searches for domestic active stock, active bond and semi-passive bond managers during the fiscal year. The domestic searches were undertaken to enlarge the manager groups and provide capacity to move the assets of the Post Retirement Fund into external managers.

International Stock Managers

Three international managers were retained during the fiscal year. State Street Global Advisors was retained as the international index fund manager in September 1992 and received its initial funding in October 1992. A search for active country/passive stock managers resulted in a recommendation to retain Baring International Investment and Brinson Partners. This recommendation was adopted by the Board in March 1993 and the firms were funded in April 1993.

Ten finalists for the fully active component were approved by the Board in June 1993. Staff expects to complete the search for these managers during early fiscal year 1994.

Domestic Stock Managers

The SBI/IAC approved ten finalists for the domestic stock manager search in September 1992. A Search Committee was convened in early calendar year 1993 to review and interview these firms and recommended that six firms be retained (Brinson Partners, Inc.; Investment Advisers, Inc., Regional Fund; Jundt Associates; Lincoln Capital Management; Oppenheimer Capital and Weiss Peck & Greer). The Board adopted the recommendation at the March 1993 SBI meeting and the managers will be funded on July 1, 1993.

Domestic Bond Managers

The search for active domestic bond managers followed a similar procedure. The SBI/IAC approved ten finalists for the domestic bond manager search in December 1992. A Search Committee was then convened to review and interview these firms and recommended that four firms be retained (BEA Associates; Standish Ayer & Wood; IDS Advisory; and Trust Company of the West). The Board adopted the recommendation at the March 1993 meeting and the managers will be funded on July 1, 1993.

Finally, a search for semi-passive bond managers was conducted late in fiscal year 1993. A Search Committee interviewed three firms and recommended that the SBI add one new semi-passive manager (Goldman Sachs) to the manager group. The Board adopted this recommendation at its meeting in June 1993. The new manager will be funded on July 1, 1993.

403(b) VENDOR SELECTION

During the 1992 legislative session, legislation was enacted requiring the SBI to select up to ten insurance companies to provide tax-sheltered annuities, referred to as "403(b)" annuities, to teachers statewide. The complete legislation is contained in *Laws of Minnesota 1992,* Chapter 487.

A 403(b) Vendor Review Committee was convened in early fiscal year 1993 and program development proceeded in two phases:

- First, the Committee issued a request for proposal (RFP) for consulting services to assist the SBI in reviewing insurance company product offerings. After reviewing responses and interviewing four finalists, the Committee recommended that the SBI retain The Wyatt Company as its 403(b) consultant. The SBI adopted this recommendation in September 1992.

- Second, with the assistance of the consultant, the Committee issued an RFP for annuity products. The RFP was issued to approximately 300 insurance companies nationwide that met statutory qualifications. Sixteen of the eighteen respondents qualified for consideration according to the minimum credit rating and product offering standards outlined in the RFP.

After approval by the Board, contracts were finalized with the following eight insurance companies in April 1993:

- Aetna Life and Annuity
- Great West Life
- IDS Life
- Metropolitan Life
- Minnesota Mutual
- Nationwide
- United Investors
- Variable Annuity Life Insurance Company (VALIC)

POLICE AND FIRE FUND CONSOLIDATION

In 1987, legislation was enacted that establishes procedures for voluntary consolidation of local police and fire plans with the Public Employees Retirement Association (PERA). When a merger is approved, assets are transferred from the local plan to the Basic Retirement Funds and Post Retirement Fund.

By statute, the executive director of the State Board of Investment (SBI) has authority to accept assets in-kind or to require that individual holdings be converted to cash prior to the transfer. Since the investments made by local plans are similar to those made by the SBI, most assets can be transferred at their market value.

During fiscal year 1993, three plans with assets totaling $159 million merged with PERA under the procedures established by *Minnesota Statutes* Chapter 353A:

Crystal Policy Relief Association	$7.2 million
Duluth Fire Relief Association	$23.9 million
St. Paul Fire Relief Association	$128.8 million

Since inception in 1987, twenty-five (25) plans with total assets of $290 million have merged with PERA. After consolidation, these assets are managed as part of the Basic and Post Retirement Funds.

Supplemental Investment Fund

Police and fire plans that are not consolidated with PERA may also invest their assets with the SBI through the Supplemental Investment Fund. During fiscal year 1993, twenty-two (22) plans selected the SBI to manage all or a portion of their retirement related assets. This addition brings the total number of police and fire plans participating in the Supplemental Investment Fund to fifty-five (55). The SBI expects this growth trend to continue as plans become more familiar with the SBI and its ability to offer a variety of investment options at a low administrative cost.

RESOLUTION ON SOUTH AFRICA

In October 1985, the State Board of Investment (SBI) adopted a resolution concerning its holdings in companies doing business in countries of South Africa and Namibia. In March 1989 and June 1993, the SBI revised and restated the resolution.

Original Resolution

The original resolution established a four phase timetable for the SBI's divestment program which was tied to a company's rating on its implementation of the Sullivan Principles, a set of fair employment guidelines established by Dr. Leon Sullivan. In addition, the resolution required that the divestment action associated with each phase of the resolution would not take place before the Board obtained legal and financial advice concerning any impact on its fiduciary responsibilities.

After reviewing reports from its financial and legal advisers, the Board decided not to immediately liquidate holdings affected by the resolution. Rather, it chose to implement the requirements of each phase by instituting a policy of **"divestment through attrition."** Under this policy, the Board's active stock managers were directed to discontinue purchases of stock in companies affected by the resolution unless the manager determined that the failure to buy a particular securities would be a violation of its fiduciary responsibility. As existing holdings were sold during the normal course of business, it was expected that stock holdings in the restricted companies would decline.

During fiscal years 1986-1988, substantial progress was made toward full divestment using the divestment through attrition policy. The reduction was due both to sales of shares during the normal course of business and the decision of many companies to withdraw their operations from South Africa.

Revised Resolution

In March 1989 and June 1993, the Board revised the original resolution to reflect the divestment through attrition policy and to recognize the continual change in the specific companies that have South African operations.

The SBI relies on information available through the Investor Responsibility Research Center (IRRC) in Washington, D.C. to identify companies with direct investment in South Africa. The Board has directed its active stock managers to discontinue purchases of these companies unless the manager determines that failure to complete a purchase would be a breach of the manager's fiduciary responsibility.

At the beginning of fiscal year 1993, the SBI's active stock managers held shares in five companies with direct investment in South Africa. During fiscal year 1993, 11 new companies were added to the restricted list due to merger and acquisition activity. This increased the number of restricted companies held by the SBI's active stock managers to 7 firms.

Task Force

When the original resolution was adopted, the Board created a task force to advise the SBI on its implementation process. Designees of each of the five Board members serve as members of the task force along with a representative from the statewide retirement systems, a representative of public employees and a representative from the private sector. The Task Force on Divestment was officially reinstated in March 1991 and June 1993 and continues under the revised resolution. It meets periodically to monitor the SBI's progress in implementing the resolution.

Rescission of the Resolution

Events that occur after the close of a fiscal year would not normally be reported in this annual report. Given the rapidly changing events in South Africa, however, the SBI has chosen to make an exception to this practice.

In September 1993, the Board adopted an amendment to the resolution which provided that the resolution would be rescinded if events transpired in South Africa which would support the establishment of a multi-racial democracy and serve to increase the safety and stability of investments in companies that do business in that country.

On September 24, 1993, Nelson Mandela, President of the African National Congress (ANC), called for an end to economic sanctions. This action followed the establishment of a transitional executive council which will guide the government of South Africa until free and open multi-racial elections are held on April 27, 1994.

The Board determined that these events fulfilled the conditions for discontinuing implementation of its resolution. On October 27, 1993, the Board officially rescinded all provisions of its resolution on South Africa and discontinued the Task Force on Divestment.

MANDATE ON NORTHERN IRELAND

Requirements

In 1988, the Legislature enacted statutory provisions concerning the Board's investments in U.S. companies with operations in Northern Ireland. The statute requires the State Board of Investment (SBI) to:

- Annually compile a list of U.S. corporations with operations in Northern Ireland in which the SBI invests.
- Annually determine whether those corporations have taken affirmative action to eliminate religious or ethnic discrimination. The statute lists nine goals modeled after the MacBride Principles.
- Sponsor, co-sponsor and support resolutions that encourage U.S. companies to pursue affirmative action in Northern Ireland, where feasible.

The statute does not require the SBI to divest existing holdings in any companies and does not restrict future investments by the SBI.

Implementation

The SBI uses the services of the Investor Responsibility Research Center (IRRC), Washington D.C., to determine corporate activity in Northern Ireland. In January 1993 the SBI held stocks or bonds in 38 out of 44 corporations identified by IRRC as having operations in Northern Ireland.

The SBI filed shareholder resolutions with 18 of these corporations during the 1993 proxy season. The resolutions asked corporations to sign the MacBride Principles, to implement affirmative action programs or to report on the steps they have taken to alleviate religious or ethnic discrimination. Nine (9) resolutions were withdrawn when the targeted companies agreed to provide information on their employment activity in Northern Ireland and 3 resolutions were rejected by the companies on a legal basis under SEC rules. The voting results on the remaining 6 resolutions are shown below:

Company	Affirmative Vote
Baker Hughes	10.9%
Dun & Bradstreet	18.3
Interpublic Group	6.1
James River	13.8
Marsh & McLennan	11.0
Xerox	16.7

GUIDELINES ON INTERNATIONAL INVESTING

At its September 1992 meeting, the State Board of Investment (SBI) adopted a position paper regarding international investing. The paper stated that the case for international investing lies in three areas: increased investment opportunity, greater diversification and potential for higher return. Nearly two-thirds of the world's market now lie outside the U.S. By diversifying across world markets, the Board can reduce risk/volatility of the total portfolio and increase the potential for higher returns.

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

Task Force

The Board established an International Investing Guidelines Task Force to recommend guidelines that address these limitations as well as other concerns related to international investing.

The membership of the Task Force includes a representative of each Board member, a representative of each statewide retirement system, two private sector representatives from the Investment Advisory Council, two representatives from organized labor and one representative from environmental groups. The SBI executive director and the SBI's international consultant are also members of the Task Force.

Conclusions

Based on the background material compiled from U.S. State Department reports, the Task Force grouped countries into three broad categories:

Group I. These countries have legal protections or practices that generally respect worker and human rights. Because these countries have strong worker and human rights protections, there is little concern that economic and social disruptions may occur which would have an adverse effect on financial markets.

Group II. These countries have legal protections for worker and human rights but violations of these rights have been cited in the State Department reports. Because violations of legally protected worker and human rights continue to occur in these countries, there is some concern that economic and social disruptions may occur which may have an adverse effect on their financial markets.

Group III. These countries lack basic protections for worker and human rights and do not appear to be making adequate progress in establishing an appropriate legal structure to address these issues. Because of this basic lack of human and worker rights, the potential exists for economic, political and social unrest that could adversely affect the stability of the financial markets within these countries.

A list of the countries in each group is shown below:

Group I	Group II	Group III
Australia	Argentina	China
Austria	Brazil	Indonesia
Belgium	Chile	Kuwait
Canada	Colombia	Nigeria
Czechoslovakia	Egypt	Pakistan
Denmark	India	South Africa
Finland	Israel	USSR/former Soviet Union
France	Jamaica	Yugoslavia
Germany	Republic of Korea	
Greece	Malaysia	
Hong Kong	Mexico	
Hungary	Philippines	
Italy	Taiwan	
Ireland	Thailand	
Japan	Trinidad & Tobago	
Luxembourg	Turkey	
Netherlands		
New Zealand		
Norway		
Poland		
Portugal		
Singapore		
Spain		
Sweden		
Switzerland		
United Kingdom		
Uruguay		

Recommendations

The Task Force recommended that the SBI adopt the following investment guidelines for its active international stock managers. It is important to note that the guidelines do not prohibit a manager from investing in the market of any country:

- The SBI's active international stock managers may invest in all the countries included in "Group I." Since these countries have strong worker and human rights protections, there is little concern that economic and social disruptions may occur which would have an adverse effect on their financial markets.

- The SBI's active managers may invest in the markets of countries shown under "Group II" if the manager believes that it would be a breach of fiduciary responsibility not to do so. Since violations of legally protected worker and human rights continue to occur in these countries, there is some concern that economic and social disruptions may occur and may have an adverse effect on the financial markets. If a manager chooses to invest in one or more of these markets, the manager must notify the SBI in writing.

- The SBI's active managers may invest in the markets of countries shown under "Group III" if the manager believes that it would be a beach of fiduciary responsibility not to do so. Since these countries lack basic human and worker rights, the potential exists for economic, political and social unrest that could adversely affect the stability of the financial markets within these countries. If a manager chooses to invest in one or more of these markets, the manager must appear at a meeting of the SBI to present its reasons for the decision to do so.

Board Action

The Board adopted the recommendations of the Task Force at its meeting in December 1992. The Task Force will review the country groupings periodically and recommend appropriate additions or deletions. Generally, this will require the Task Force to reconvene after new annual reports from the U.S. State Department are available.

PROXY VOTING

As a stockholder, the State Board of Investment (SBI) is entitled to participate in corporate annual meetings through direct attendance or casting its votes by proxy. Through proxy voting, the Board directs company representatives to vote its shares in a particular way on resolutions under consideration at annual meetings. Resolutions prepared at annual meetings range from routine issues, such as those involving the election of corporate directors and ratification of auditors, to matters such as merger proposals and corporate social responsibility issues. In effect, as a shareholder the SBI can participate in shaping corporate policies and practices.

Voting Process

The Board recognizes its fiduciary responsibility to cast votes on proxy issues. The SBI does not delegate the duty to its external investment managers. Rather, the SBI actively votes all shares according to guidelines established by its Proxy Committee.

The Board delegates proxy voting responsibilities to its Proxy Committee which is comprised of a designee of each Board member. The five member Committee meets only if it has a quorum and casts votes on proxy issues based on a majority vote of those present. In the unusual event that it reaches a tie vote or a quorum is not present, the Committee will cast a vote to abstain.

Voting Guidelines

The Committee has formulated guidelines by which it votes on a wide range of corporate governance and social responsibility issues. Each year the Proxy Committee reviews existing guidelines and determines which issues it will review on a case-by-case basis.

Corporate Governance Issues

The voting guidelines for major corporate governance issues are summarized below:

- **Routine Matters.** In general, the SBI **supports** management on routine matters such as uncontested election of directors; selection of auditors; and limits on director and officer liability or increases in director and officer indemnification permitted under the laws of the state of incorporation.

- **Shareholder Rights Issues.** In general, the SBI **opposes** proposals that would restrict shareholder ability to effect change. Such proposals include instituting supermajority requirements to ratify certain actions or events; creating classified boards; barring shareholders from participating in the determination of the rules governing the board's actions, such as quorum requirements and the duties of directors; prohibiting or limiting shareholder action by written consent; and granting certain stockholders superior voting rights over other stockholders.

In general, the SBI **supports** proposals that preserve shareholder rights to effect change. Such proposals include requiring shareholder approval of poison pill plans; repealing classified boards; adopting secret ballot of proxy votes; reinstating cumulative voting; and adopting anti-greenmail provisions.

- **Executive Compensation.** In general, the SBI **supports** efforts to have boards of directors comprised of a majority of independent directors, to have compensation committees made up entirely of independent directors, and to have executive compensation linked to a company's long-term performance.

- **Buyout Proposals.** In general, the SBI **supports** friendly takeovers and management buyouts.

- **Special Cases.** The Proxy Committee evaluates hostile takeovers, contested election of directors, compensation agreements that are contingent upon corporate change in control, and recapitalization plans on a case-by-case basis. In addition, the Committee reviews all corporate governance issues affecting companies incorporated or headquartered in Minnesota on a case-by-case basis.

Social Responsibility Issues

The voting guidelines for major social responsibility issues are shown below:

- **South Africa.** The SBI **supports** a variety of proposals regarding South Africa including those that encourage the signing of the Statement of Principles (formerly Sullivan Principles); encourage withdrawal from South Africa; sever all company ties with South Africa; promote the welfare of black employees and improve the quality of black life outside the work environment; limit strategic sales to South Africa; apply economic pressures on the South African government; or request a report on operations in South Africa.

- **Northern Ireland.** The SBI **supports** resolutions that call for the adoption of the MacBride Principles as a means to encourage equal employment opportunities in Northern Ireland. Also, the SBI **supports** resolutions that request companies to submit reports to shareholders concerning their labor practices or their sub-contractors' labor practices in Northern Ireland.

- **Environmental Protection/Awareness**. In general, the SBI **supports** resolutions that require a corporation to report or disclose to shareholders company efforts in the environmental arena. In addition, the SBI **supports** resolutions that request a corporation to report on progress toward achieving the objectives of the Ceres Principles, (formerly known as the Valdez Principles) an environmental code of conduct for corporations.

- **Other Social Responsibility Issues.** In general, the SBI **supports** proposals that require a company to report or disclose to shareholders company efforts concerning a variety of social responsibility issues. In the past, these reporting resolutions have included issues such as affirmative action programs, animal testing procedures, nuclear plan safety procedures and criteria used to evaluate military contract proposals.

  In general, the SBI **opposes** proposals that require a company to institute a specific business action in response to such issues. For example, the SBI voted against a shareholder proposal which would have required a utility to phase out operations of a nuclear power plant.

FY 1993 Proposals

During fiscal year 1993, the SBI voted proxies for more than 1,400 corporations.

As in past years, the issues on corporate ballots included a broad range of proposals in the corporate governance area:

- Shareholder proposals regarding executive compensation were supported by an average of 14.5% of the shares voted. Shareholders submitted 32 proposals on various compensation issues.

- Shareholders submitted 18 proposals to redeem "poison pills" (an anti-takeover device) or submit them to shareholder vote. These proposals received average support of 44.3% and majorities at 4 companies.

- More than 19 proposals were submitted concerning confidential voting. These proposals received average support of 40.6% and majorities at 4 companies.

- Other proposals included the repeal of classified boards which was supported by an average of 32% of shares voted;

limitation of severance packages to top executives ("golden parachutes") which received support from an average of 41.4% of shares voted; cumulative voting which was supported by an average of 23.7% of shares voted; and requirements for directors to hold a specified minimum number of shares which received support from an average of 12.5% of shares voted.

In the social responsibility area, Ceres Principles and South Africa resolutions dominated social issues.

- Ceres Principles received 36 resolutions with an average support of 7.8%.

- South Africa received 20 resolutions with an average support level of 11.2%.

- Northern Ireland received only 8 proposals this year with an average support of 14.2%

- Military issues received 19 resolutions. Eight resolutions asking for reports on foreign military sales averaged 10.4% support. Five resolutions on economic conversion received 10.2% support. Two resolutions asking for reports on corporate involvement in the Star Wars program received 8.9%. Resolutions to end the management of nuclear weapons facilities for the Department of Energy received 3.7% support and asking companies to establish criteria for accepting military contracts received an average of 7.6% support.

INVESTMENT MANAGER SUMMARIES

Common Stock Managers

Bond Managers

Alternative Investment Managers

DOMESTIC COMMON STOCK MANAGERS

Alliance Capital Management

Alliance searches for companies likely to experience high rates of earnings growth on either a cyclical or secular basis. Alliance invests in a wide range of medium to large growth companies. The firm does not tend to concentrate on one particular type of growth company over another. However, the firm's decision-making process appears to be much more oriented toward macroeconomic considerations than is the case with most other growth managers. Accordingly, cyclical earnings prospects, rather than secular, appear to play a larger role in terms of stock selection. Alliance is not an active market timer, rarely raising cash above minimal levels. The firm was retained by the SBI in March 1983.

Forstmann Leff Associates

Forstmann Leff is a classic example of a "rotational" manager. The firm focuses almost exclusively on sector weighting decisions. Based upon its macroeconomic outlook, the firm will move aggressively into and out of equity sectors over the course of a market cycle. The firm tends to purchase liquid, large capitalization stocks that will benefit the most during the current phase of the market cycle. The firm was retained by the SBI in March 1983.

Franklin Portfolio Associates

Franklin Portfolio Associate's investment decisions are quantitatively driven and controlled. The firm believes that consistent application of integrated multiple valuation models produces superior investment results. The firm's stock selection model is a composite model comprised of 30 valuation measures each of which falls into one of the following groups: fundamental momentum, relative value, future cash flow, and economic cycle analysis. The firm believes that a multi-dimensional approach to stock selection provides greater consistency than reliance on a limited number of valuation criteria. Franklin's portfolio management process adds value by focusing on buying and selling the right stock rather than attempting to time the market or pick the right sector or industry groups. The firm always remains fully invested. Franklin was retained by the SBI in April 1989.

GeoCapital Corp.

GeoCapital invests primarily in small capitalization equities with the intent to hold them as they grow into medium and large capitalization companies. The firm uses a theme approach and individual stock selection analysis to invest in the growth/technology and intrinsic value areas of the market. In the growth/technology area, GeoCapital looks for companies that will have above average growth due to a good product development program and limited competition. In the intrinsic value area, the key factors are the corporate assets, free cash flow, and an unrecognized catalyst that will cause a positive change in the company. The firm generally stays fully invested, with any cash positions due to the lack of attractive investment opportunities. GeoCapital was retained by the SBI in April 1990.

IDS Advisory

IDS employs a "rotational" style of management, shifting among industry sectors based upon its outlook for the economy and the financial markets. The firm emphasizes both sector weighting and stock selection decisions. Over a market cycle IDS invests in a wide range of industries. The firm tends to buy liquid, large capitalization stocks. Based on their internal research, they purchase the stocks that will incur the highest growth rates within the sectors they favor. The firm was retained by the SBI in March 1983.

Independence Associates

Independence believes that individual stocks which outperform the market always have two characteristics: 1) they are intrinsically cheap; and 2) their business is in the process of improving. Independence ranks their universe by using a multifactor model. Using imput primarily generated by their internal analysts, the model ranks each stock based on ten discreet criteria. Independence constrains their portfolio by using the top 60% of their ranked universe and optimizing it relative to the benchmark selected by the client to minimize the market and industry risks. Independence maintains a fully invested portfolio and rarely holds more than a 1% cash position. The firm was retained by the SBI in February 1992.

Lieber & Co.

Lieber & Co. seeks to identify investment concepts that are either currently profitable or likely to become so in the near future, yet whose prospects are not reflected in the stock prices of the companies associated with the concepts. The investment concepts upon which the firm focuses are related to both macroeconomic trends and specific product developments within particular industries or companies. Stocks purchased by Lieber tend to be well-managed, high growth and high return on equity, small-to-medium sized companies. The stocks may be undervalued due to the failure of investors to recognize fully either the value of new products or a successful turnaround situation. Particularly attractive to Lieber are small-to-medium sized takeover candidates. The firm generally is fully invested, with any cash positions the result of a lack of attractive investment concepts. Lieber was retained by the SBI in March 1983.

Lynch & Mayer

Lynch & Mayer invests primarily in high-quality large capitalization growth stocks. They believe that outstanding investments are a function of corporate earnings growth considerably above historical trends or consensus expectations. Lynch & Mayer is a bottom-up stock picker and relies on very little economic analysis in their selection process. Lynch & Mayer screens out stocks below a certain market capitalization and liquidity level and then eliminates additional stocks based on various fundamental criteria. After the screening process they look for at least one of the following four factors: 1) acceleration of growth; 2) improving industry environment; 3) corporate restructuring; or 4) turnaround. The firm generally stays fully invested, with any cash due to lack of attractive investment opportunities. Lynch & Mayer was retained by the SBI in February 1992.

Waddell & Reed

Waddell & Reed focuses its attention primarily on small to medium capitalization aggressive growth stocks. However, the firm has demonstrated a willingness to make significant bets against this investment approach for extended periods of time. Waddell & Reed was retained by the SBI in March 1983.

Wilshire Associates

The index fund managed by Wilshire Associates is designed to track a custom index which has been modified or "tilted" to compensate for style bias or "misfit" in the active managers' aggregate benchmark. The tilting process was initiated during fiscal year 1991. Prior to that time, the Wilshire Associates' portfolio was indexed to the Wilshire 5000. The Wilshire 5000 is a broad-based market indicator and is composed of the common stock of all U.S. domiciled corporations for which daily prices are available. Wilshire Associates was retained by the SBI in December 1983.

Portfolio statistics for each of the active domestic equity managers can be found in the Statistical Data Appendix.

INTERNATIONAL STOCK MANAGERS

Baring International Investment Ltd.

Baring manages an active country/passive stock portfolio for the SBI. Baring's strategic policy team is responsible for the country and currency decisions. To make their country decisions, the policy team uses a macroeconomic framework to identify growing economies as evidenced by positive changes in GDP and interest rates. Baring uses State Street Global Advisors to manage the passive stock portion of the portfolio. Baring advises State Street of the allocation decisions and State Street invests accordingly in their various country funds. State Street also implements any hedging decisions by Baring. Baring was retained by the SBI in April 1993.

Brinson Partners, Inc.

Brinson manages an active country/passive stock portfolio for the SBI. Brinson uses a proprietary valuation model to rank the relative attractiveness of individual markets based on fundamental considerations. Inputs include forecasts for growth, inflation, risk premiums and foreign exchange movements. Quantitative tools are used to monitor and control portfolio risk, while qualitative judgments from the firm's professionals are used to determine final country allocations. The passive stock portion of the portfolio is managed internally. Brinson constructs its country index funds using a proprietary optimization system. Brinson was retained by the SBI in April 1993.

State Street Global Advisors

State Street manages an international index portfolio designed to track the Morgan Stanley Capital International Index of Europe, Australia and the Far East. State Street uses a full replication strategy to construct index modules on a country by country basis. These modules are then combined to form a portfolio which will track the index. State Street was retained by the SBI in October 1992.

BOND MANAGERS

Ark Asset Management

Ark Asset Management (formerly Lehman Ark) emphasizes cyclical interest rate forecasts, trends and positions its portfolios in terms of maturity, quality and sectors, in response to its interest rate forecast. However, the firm avoids significant, rapidly changing interest rate bets. Instead, it prefers to shift portfolio interest rate sensitivity gradually over a market cycle, avoiding extreme positions in either long or short maturities. Individual bond selection is based on a quantitative valuation approach and the firm's internally-conducted credit analysis. High quality (A or better) undervalued issues are selected consistent with the desired maturity, quality and sector composition of the portfolios. The firm was retained by the SBI in July 1984.

Investment Advisers Inc.

Investment Advisers is a traditional top-down bond manager. The firm's approach is oriented toward correct identification of the economy's position in the credit cycle. This analysis leads the firm to its interest rate forecast and maturity decisions, from which the firm derives most of its value-added. Investment Advisers is an active asset allocator, willing to make rapid, significant moves between cash and long maturity investments over the course of an interest rate cycle. Quality, sector and issue selection are secondary decisions. Quality and sector choices are made through yield spread analyses consistent with interest rate forecasts. Individual security selection receives very limited emphasis and focuses largely on specific bond characteristics such as call provisions. Investment Advisers was retained by the SBI in July 1984.

Fidelity Management Trust

Fidelity Management Trust manages a diversified semi-passive portfolio of fixed income securities designed to simulate the characteristics of the Salomon Broad Investment Grade (BIG) index, a diversified market indicator composed of government, mortgage and corporate securities. The BIG index represents virtually the entire investment grade fixed income market. While matching the risk profile of the BIG index, Fidelity seeks to enhance returns by actively managing yield curve, sector, and issue exposure. The objective is to provide modest increments to the BIG index return on a consistent basis. Fidelity was retained by the SBI in July 1988.

Lincoln Capital Management

Lincoln Capital manages a diversified semi-passive portfolio of fixed income securities designed to simulate the Salomon Broad Investment Grade (BIG) index. Lincoln employs quantitative disciplines that model the BIG index according to a variety of risk variables. Lincoln seeks to enhance returns relative to the BIG index by modest alterations to the BIG index sector weightings, with the use of undervalued securities, and through an aggressive trading strategy in mortage securities. The objective is to provide modest increments to the BIG index return on a consistent basis. Lincoln was retained by the SBI in July 1988.

Miller, Anderson & Sherrerd

Miller Anderson focuses its investments in misunderstood or under-researched classes of securities. Over the years this approach has led the firm to emphasize mortgage-backed securities in its portfolios. Based on its economic and interest rate outlook, the firm establishes a desired maturity level for its portfolios. This decision is instituted primarily through the selection of specific types of mortgage securities that have prepayment expectations consistent with the portfolio's desired maturity. In addition, the firm will move in and out of cash gradually over an interest rate cycle. The firm never takes extremely high cash positions and keeps total portfolio maturity within an intermediate three-to-seven year duration band. Unlike other firms that also invest in mortgage securities, Miller Anderson intensively researches and, in some cases, manages the mortgage pools in which it invests. Miller was retained by the SBI in July 1984.

Western Asset Management

Western recognizes the importance of interest rates changes on fixed income portfolio returns. However, the firm believes that successful interest rate forecasting, particularly short-run forecasting is extremely difficult to accomplish consistently. Thus, the firm attempts to keep portfolio maturity in a narrow band near that of the market, making only relatively small, gradual shifts over an interest rate cycle. It prefers to add value primarily through appropriate sector decisions. Based on its economic analysis, Western will significantly overweight particular sectors, shifting these weights as economic expectations warrant. Issue selection, like its maturity decisions, are of secondary importance to the firm. Western was retained by the SBI in July 1984.

Portfolio statistics for each of the active bond managers can be found in the Statistical Data Appendix.

ALTERNATIVE INVESTMENT MANAGERS

Real Estate

Fund: RESA

Aetna Life & Casualty

Real Estate Separate Account (RESA) is an open-end commingled real estate fund managed by the Aetna Life and Casualty Company of Hartford, Conn. The fund was formed in January 1978. The fund has no termination date; investors have the option to withdraw all or a portion of their investment. RESA invests primarily in existing equity real estate. Investments are diversified by location and type of property. On-site management of properties is contracted to outside firms or conducted by a joint venture partner.

Fund: Prime Property Fund

Equitable Real Estate Group

Prime Property Fund was formed in August 1973 by the New York-based Equitable Real Estate Group, Inc. The account is an open-end commingled real estate fund. The fund has no termination date; investors retain the option to withdraw all or a portion of their investment. The fund makes equity investments in existing real estate. The fund's portfolio is diversified by location and property type. Management of the fund's properties is contracted to outside firms or is conducted by joint venture partners.

Funds: HAC Group Trust I
HAC Group Trust II
HAC Group Trust III
HAC Group Trust V

Heitman Advisory Corp. (HAC)

HAC Group Trusts are closed-end commingled funds managed by the Heitman Advisory Group. The majority of the trust investments are equity real estate. The real estate portfolios are diversified by the type and location of the properties. Centre Properties, Ltd., an affiliate of Heitman, manages the trusts' wholly-owned properties. Properties that are partially owned by the trusts may be managed by joint venture partners. Heitman Advisory is based in Chicago.

Fund: LaSalle Income Parking Fund

LaSalle Advisors

The Income Parking Fund is a closed-end commingled fund managed by LaSalle Advisors of Chicago, Illinois. The fund's strategy is to acquire unleveraged parking facilities to maximize current return to the investors. In special situations, the fund may develop new parking facilities, but only when yield requirements can be maintained. LaSalle has considerable expertise in this area, with close to 100,000 parking spaces under management in the U.S.

Funds: Paine Webber Qualified Plan Property Funds I-IV and Mortgage Partners Five, L.P.'s.

Paine Webber

The Managing General Partner of Funds I-V is based in Boston, Mass. and is a wholly owned subsidiary of Paine Webber Group, Inc. The Funds have real estate investments which are diviersified by location and property type. The SBI received these investments through Police and Fire Plan consolidations.

Fund: RREEF USA III

Rosenberg Real Estate Equity Funds (RREEF)

RREEF USA III is a closed-end commingled fund managed by the Rosenberg Real Estate Equity Funds. Typically, the trust purchases 100% of the equity of its properties with cash. The trust generally does not utilize leverage or participating mortgages. Properties are diversified by location and type. RREEF's in-house staff manages the trust's real estate properties. The firm's primary office is located in San Francisco.

Funds: AEW - State Street Real Estate Fund III
AEW - State Street Real Estate Fund IV
AEW - State Street Real Estate Fund V

State Street Bank & Trust

State Street Real Estate Funds are closed-end commingled funds managed by the State Street Bank and Trust Company of Boston. State Street Bank has retained Aldrich, Eastman and Waltch (AEW) as the funds' advisor. The funds' special orientation is the use of creative investment vehicles such as convertible and participating mortgages to maximize real estate returns. The real estate portfolios are diversified by location and property type. On-site property management typically is contracted to outside firms or conducted by joint venture partners.

Funds: TCW Realty Fund III
TCW Realty Fund IV

Trust Company of the West (TCW)

TCW Realty Funds are closed-end commingled funds. The funds are managed as joint ventures between Trust Company of the West and Westmark Real Estate Investment Services of Los Angeles. These managers utilize specialty investment vehicles such as convertible and participating mortgages to enhance real estate returns. Investments are diversified by location and type. Portfolio properties are typically managed by local property management firms.

Fund: Zell/Merrill Lynch Real Estate II

Zell/ Merrill Lynch

Zell/Merrill Lyuch Real Estate Fund II, is based in Chicago, Illinois. The fund will make equity or equity-related investments in opportunistic real estate situations. The partnership will acquire office, retail, and residential properties and may also invest in mixed-use and industrial properties. The fund has the authority to acquire convertible or participating mortgages.

Venture Capital

Allied Capital

Fund: Allied Venture Partnership

Allied Venture Partnership was formed in September 1985 and has a ten-year term. Based in Washington D.C., the fund focuses on later-stage, low technology companies located in the Southeastern and Eastern U. S. Most investments will be made in syndication with Allied Capital, a large, publically owned venture capital corporation which was formed in 1958.

Brinson Partners

Funds: Venture Partnership Acquisition Fund I
Venture Partnership Acquisition Fund II

Brinson Partners Venture Partnership Acquisition Funds I and II were formed in 1988 and 1990, respectively. The limited partnerships have ten year terms. Fund I and II invest exclusively in secondary venture capital limited partnership interests which are sold by investors who for a variety of reasons have decided to sell some or all of their venture capital holdings. Brinson Partners is based in Chicago, Illinois.

ChiCorp Management, Inc.

Fund: Midwest Bank Fund III

Midwest Bank Fund III was formed in October 1992 and has a nine year term. Based in Chicago, Illinois, the fund will invest in sub-regional banks, located primarily in the Midwest, which have demonstrated above average growth and are likely acquisition targets.

Churchill Capital, Inc.

Fund: Churchill Capital Partners II

Churchill Capital Partners II was formed in October 1992 and has a twelve year term. Based in Minneapolis, Minnesota, the fund provides subordinated debt to established small and medium-sized companies. Fund investments will not be restricted to any particular region, although a substantial portion are anticipated in the Midwest.

DSV Management Ltd.

Fund: DSV Partners IV

DSV Partners IV limited partnership was formed in April 1985. It has a twelve-year term. DSV Partners IV is the fourth venture fund to be managed by DSV Management Ltd. since the firm's inception in 1968. The firm has offices in Princeton, New Jersey, and California. DSV Partners' investment emphasis is on portfolio companies in the start-up and early stages of corporate development. The geographic focus of the partnership is on East and West Coast firms. Investments are diversified by industry type.

Fund: Golder, Thoma and Cressey Fund III
Golder, Thoma and Cressey Fund IV

Golder, Thoma & Cressey

Golder, Thoma and Cressey Fund III and IV are venture capital limited partnerships and were formed in October 1987 and April 1993, respectively. The funds are based in Chicago, Illinois and have ten year terms. The funds will invest in growing private businesses, find and build companies in fragmented industries and invest in small leveraged buyouts. In addition, the portfolio will be diversified geographically and by industry.

Fund: Inman & Bowman

Inman & Bowman Management

The Inman & Bowman limited partnership was formed in June, 1985. Its investment focus is early-stage, high-technology firms. The fund will emphasize investments in California, where the general partner, Inman & Bowman Management, is based. However, the fund will consider investments in the Pacific Northwest as well. The partnership has a ten-year term.

Funds: Superior Venture Partners
IAI Ventures I
IAI Ventures II

IAI Venture Capital Group

Superior Ventures is a Minnesota-based venture capital limited partnership. It was formed in June 1986 and has an eleven-year term. Superior Ventures is managed by IAI Venture Capital Group, a subsidiary of Investment Advisers, Inc. Up to 15% of the fund will be invested in other Minnesota-based venture capital limited partnerships. The remainder of the fund will be invested in operating companies located within the state.

IAI Ventures I and II are also Minnesota-based venture capital limited partnerships managed by IAI Venture Capital Group. These funds have venture capital investment strategies similar to Superior's but are more diversified geographically. They were formed in 1984 and 1991, respectively and have 11 year terms.

Funds: KKR 1984 LBO Fund
KKR 1986 LBO Fund
KKR 1987 LBO Fund
KKR 1991 LBO Fund

Kohlberg, Kravis, Roberts & Co. (KKR)

KKR's Leveraged Buyout Funds are structured as limited partnerships. The funds invest in large leveraged buyouts but may include other types of investments as well. The partnerships' portfolio companies are often mature, low technology companies with very diversified operations. Kohlberg, Kravis, Roberts and Co. operates offices in New York and San Francisco.

Funds: Matrix Partners II
Matrix Partners III

Matrix Partners

Matrix Partners II and III are venture capital limited partnerships that were formed in 1985 and 1990, respectively, with terms of ten years. Investment emphasis is on high-technology firms in the early and expansion stages of corporate development. However, for diversification the portfolios will include a sizable component of non-technology firms. The portfolios may include several small leveraged buyout investments as well. The funds are managed by five general partners with offices in Boston, San Jose, and San Francisco.

Fund: Northwest Venture Partners I

Norwest Venture Capital Management

Northwest Venture Partners I was formed in January 1984 and has a term of ten years. Norwest Venture Capital Management, a wholly owned subsidiary of Norwest Corp., is the general partner and manager of the partnership. Norwest Venture Capital also manages the Northwest Growth Fund, a small business investment company (SBIC), and Northwest Equity Capital, a leveraged buyout fund. Northwest Venture Partners' investment focus is on high technology companies in the early stages of corporate development. However, the partnership's portfolio also includes investments in expansion stage firms and is diversified by the location and industry type of its portfolio companies.

Fund: First Century III

Smith Barney Venture Corp.

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

Funds: Summit Ventures I
Summit Ventures II

Stamps, Woodsum & Co.

Summit Ventures are limited partnerships formed in 1984 and 1988, respectively, with ten-year terms. The funds were formed by Stamps, Woodsum & Co., the managing general partners of the fund, and Shearson/American Express. Stamps and Woodsum focus on profitable, expansion stage firms that have not yet received any venture backing. The majority of the partnerships investments are in high tech firms. Investments are diversified by location and industry type.

Fund: IMR Fund, L.P.

The Jacobs Group

The IMR Fund was formed in May 1992 and has a ten year term. The Fund will invest in established operating companies with assets and/or business segments offering opportunities for significantly enhanced appreciation. Investments in financially troubled or excessively leveraged companies, particularly bankrupt or poorly managed companies with high asset bases, will be a focus of the Fund.

T. Rowe Price

T. Rowe Price, a Baltimore-based money management firm, was selected to manage stock distributions from the Board's venture capital limited partnerships. T. Rowe Price has extensive research capabilities in the small capitalization company area. In addition, the firm has a large trading staff with particular expertise in the trading of small capitalization and illiquid stocks.

Fund: Zell/Chilmark

Zell/ Chilmark

Zell/Chilmark was formed in July 1990 with a 10 year term. Based in Chicago, Illinois, the Fund focuses on corporate restructuring and rejuvenation situations. The partnership will invest primarily in the assets, debt and/or common and preferred stock of companies with a fair market value of at least $100 million.

Resource Funds

Fund: Apache Acquisition Net Profits Interest

Apache Corporation

Apache Acquisition Net Profits Interest is a private placement to acquire a non-operating interest in the net profit generated by oil and gas properties acquired in 1986 from Occidental Petroleum Company. Investors will receive a 85% net profits interest in the financed share of producing properties until the cumulative total of such payments equals the investment cost plus 8% per year return on investment (the "Payout"). However, if the cumulative net profit discounted at 10% should fail to exceed a defined cumulative cash flow comparably discounted, investors will receive a 90% net profits interest until Payout. After Payout, investors will receive a 75% net profits interest for the life of the producing properties.

Fund: British Petroleum Prudhoe Bay Royalty Trust

British Petroleum Company

The British Petroleum Prudhoe Bay Royalty Trust is an overriding royalty interest (ORI) in the Prudhoe Bay Field, Alaska, the largest oil and gas producing field in the U.S. The ORI will equal 16.42% of the first 90,000 barrels per day of oil production net to British Petroleum's interest in the Prudhoe Bay Field. British Petroleum's current total production from the field is over seven times greater than this amount. Under terms of the agreement, production costs are fixed and can vary only with inflation. The oil price is tied directly to the West Texas Intermediate spot price. British Petroleum has guaranteed an average minimum price of $15 per barrel for the first 2.5 years.

Funds: AMGO I
AMGO II
AMGO IV
AMGO V

First Reserve Corp.

American Gas and Oil (AMGO) funds are structured as limited partnerships. The general partner and manager of the funds is First Reserve Corp. The general partner's long-term investment strategy is to create diversified portfolios of oil and gas investments. The portfolios are diversified across four dimensions: location, geological structure, investment type, and operating company.

Fund: Morgan Petroleum Fund II

J.P. Morgan Investment Management

Morgan Petroleum Fund II was formed in July 1988 and is managed by J.P. Morgan Investment Management, Inc. The fund managers have an office in Houston, Texas. Fund investments will be diversified geographically and by company. Most investments will take the form of an overriding royalty interest and will include, primarily, property acquisitions and development drilling. The fund has a 15 year term.

Fund: OFS Investments, L.P.

Simmons & Company

The fund serves as a vehicle for investment in the oil field service (OFS) and equipment industry. The General Partner is located in Houston, Texas and will endeavor to negotiate transactions that display strong fundamentals, value-added opportunities, reasonable pricing and appropriate financial structuring possibilities. The fund was formed in 1992 with a 10 year term.

STATISTICAL DATA APPENDIX

Manager Portfolio Statistics

Historical Performance Summaries

Time-weighted Rate of Return

Benefit Increase Formula

Fee and Commission Data

Statistical Data Appendix

STOCK MANAGER RISK FACTOR EXPOSURE GLOSSARY

The following definitions describe the risk factors that the State Board of Investment (SBI) uses in monitoring its stock managers. The terms are referred to in Table 1.

SBI analysis of a stock manager's portfolio, in part, utilizes the BARRA E2 risk model. The BARRA model contains a number of risk factors that the SBI has found to correlate highly with a manager's investment style. That is, a manager tends to exhibit consistent exposures to many of these risk factors over time. The benchmark construction process includes identifying these persistent exposures and capturing them in the benchmark portfolio.

Factor exposures are calibrated relative to approximately 1400 of the largest market capitalization (HICAP) companies. An exposure level of 0 for a particular stock to a particular factor indicates that the stock has the same exposure as the capitalization-weighted average of the HICAP stocks. Around that zero exposure, deviations are measured in standard deviation units. Thus, an exposure level of +1 indicates that the stock has a greater exposure to the factor than roughly 68% of the HICAP stocks.

Beta — Forecasts the sensitivity of a stock's return to the return on the market portfolio. The BARRA E2 beta is a forecasted beta, based on a company's exposure to thirteen common risk factors and fifty-five industries.

Book-to-Price (B/P) — Measures the book value of a company's common equity divided by market capitalization.

Dividend Yield (Div. Yld.) — Used as a predictor of dividend yield for the coming year.

Earnings-to-Price (E/P) — Incorporates several variants of a company's earnings-price ratio. Includes the current earnings-price ratio, the normalized (5 year) earnings-price ratio, and analysts's forecasted earnings-price ratio as compiled by the Institutional Brokerage Estimate Services (IBES).

Earnings Variability (Earn. Var.) — Indicates the variability of a company's earnings. Comprised of six descriptors: historical earnings variance, cash flow variance, earnings covariability with the economy, the level of concentration of the company's earnings from various sources, the incidence of extraordinary items, and the variability of the company's earnings estimates as compiled by IBES.

Equity Allocation (Eq. Alloc.) — Measures the percent of the manager's total portfolio invested in common stocks, preferred stocks and convertible securities.

Financial Leverage (Finl.) — Measures the extent to which a company utilizes financial leverage to finance its operations. Comprised of three descriptors: debt-to-total assets (at market), debt-to-total assets (at book), and uncovered fixed charges.

Foreign Income (For. Inc.) — Measures the extent to which a company's operating income is generated outside of the U.S.

STOCK MANAGER RISK FACTOR EXPOSURE GLOSSARY

Growth	Indicates potential growth in a company's earnings over the next five years. Comprised of seven descriptors: most recent five-year dividend payout, most recent five-year dividend yield, most recent five-year earnings-price ratio, change in capital structure, normalized (5 year) earnings-price ratio, recent earnings change, and forecasted earnings growth.
Labor Intensity (Labor Int.)	Measures the degree to which labor, as opposed to capital, is used by a company as a factor of production. Derived from three descriptors: labor expense relative to assets, fixed plant and equipment (inflation adjusted) relative to equity, and depreciated plant value relative to gross plant value.
Monthly Turnover (Mo. T/O)	Measures the total equity asset sales divided by the average value of the equity assets in the manager's portfolio.
Size	Indicates the relative size of the company. It includes three descriptors: market capitalization, total assets, and the length of earnings history.
Success (Suc.)	Describes the extent to which a company has been "successful" in the recent past, in terms of both earnings and stock prices. Composed of six descriptors: most recent five-year earnings growth, most recent one-year earnings growth, forecasted next year's earnings growth, historical alpha, and relative strength. (The last two descriptors are calculated over the most recent year and most recent five-years).
Trading Activity (Trad. Act.)	Measures the trading characteristics of a company's stock. Comprised of six descriptors: most recent five-year share turnover, most recent year share turnover, quarterly share turnover, stock price, trading volume relative to stock price variance, and the number of IBES analysts following the stock.
Variability in Markets (Var. Mkts.)	Measures the volatility of a stock's return related to its past behavior and the behavior of its options. Variants of the factor are calculated for optioned stocks, listed but not optioned stocks, and thinly traded stocks. A partial list of the descriptors that make up this factor include: historical beta, option-implied standard deviation of return, daily standard deviation of return, cumulative price range, stock price, and share turnover.

Table 1.

EXTERNAL ACTIVE STOCK MANAGERS

Risk Factor Exposures
July 1988 - June 1993

	Beta	Var. Mkts.	Suc.	Size	Trad. Act.	Growth	E/P	B/P	Earn. Var.	Finl.	For. Inc.	Labor Int.	Div. Yld.	Mo. T/O	Eq. Alloc.
Alliance Capital															
Minimum	1.09	0.13	0.12	0.02	0.17	0.41	-0.24	-0.47	-0.12	-0.00	-0.22	0.19	-0.75	0.72	92%
Average	1.15	0.27	0.34	0.25	0.42	0.56	-0.16	-0.37	0.02	0.15	0.05	0.30	-0.63	3.90	95%
Maximum	1.25	0.52	0.57	0.38	0.60	0.75	0.03	-0.27	0.11	0.28	0.26	0.42	-0.50	9.30	98%
Bmrk. Avg.	1.14	0.31	0.09	-0.28	0.22	0.48	-0.06	-0.27	-0.06	0.02	-0.11	0.41	-0.57	N.A.	95%
Forstmann Leff															
Minimum	1.04	0.19	-0.16	-1.15	0.31	-0.14	-0.18	-0.26	0.19	-0.19	-0.43	-0.28	-0.81	1.61	64%
Average	1.15	0.62	0.21	-0.67	0.63	0.32	0.09	-0.01	0.44	0.07	-0.05	0.03	-0.53	10.49	82%
Maximum	1.25	1.08	0.70	0.06	1.04	0.70	0.36	0.39	0.63	0.40	0.58	0.24	-0.25	28.62	98%
Bmrk. Avg.	1.16	0.48	0.02	-0.50	0.34	0.37	-0.02	0.02	0.21	0.07	-0.11	0.26	-0.36	N.A.	71%
Franklin Portfolio*															
Minimum	0.99	-0.05	-0.24	-0.95	0.01	-0.12	0.15	0.06	-0.04	-0.23	-0.62	-0.19	-0.27	0.00	94%
Average	1.04	0.19	0.07	-0.46	0.12	0.09	0.33	0.17	0.16	-0.07	-0.37	0.01	-0.10	6.73	98%
Maximum	1.09	0.31	0.32	0.25	0.21	0.31	0.48	0.34	0.38	0.08	0.45	0.20	0.12	17.98	100%
Bmrk. Avg.	1.04	0.20	-0.05	-0.58	0.12	0.09	0.01	0.10	0.13	-0.04	-0.36	0.02	-0.08	N.A.	97%
GeoCapital Corp.*															
Minimum	1.20	0.90	-0.58	-2.33	0.43	0.94	-0.72	-0.46	0.43	-0.03	-0.71	0.39	-1.03	0.00	85%
Average	1.25	1.18	0.22	-2.16	0.74	1.06	-0.44	-0.31	0.49	0.18	-0.59	0.47	-0.96	1.15	96%
Maximum	1.28	1.38	0.91	-2.01	0.91	1.13	-0.27	-0.15	0.59	0.70	0.00	0.60	-0.85	10.23	100%
Bmrk. Avg.	1.25	1.10	0.50	-1.91	0.76	1.13	-0.36	-0.27	0.47	0.04	-0.43	0.56	-1.00	N.A.	97%
IDS Advisory															
Minimum	1.08	0.17	0.05	-0.27	0.14	0.13	-0.28	-0.30	-0.01	-0.16	-0.33	-0.08	-0.59	0.66	81%
Average	1.13	0.34	0.32	-0.08	0.34	0.33	-0.08	-0.15	0.22	0.02	-0.01	0.22	-0.44	6.51	92%
Maximum	1.19	0.61	0.63	0.25	0.64	0.42	0.11	0.02	0.34	0.29	0.51	0.45	-0.18	19.73	99%
Bmrk. Avg.	1.05	0.13	0.01	-0.07	0.15	0.10	-0.01	0.05	0.08	0.02	-0.12	0.03	-0.11	N.A.	90%

Bmrk. Avg. = Benchmark average.
Aggregate Active figures include data only for managers retained on 6/30/93.

*Note: Franklin retained on 4/1/89. Data covers period from 4/1/89 - 6/30/93 only.
GeoCapital retained on 4/1/90. Data covers period from 4/1/90 - 6/30/93 only.
Independence retained on 2/1/92. Data covers period from 2/1/92 - 6/30/93 only.
Lynch & Mayer retained on 2/1/92. Data covers period from 2/1/92 - 6/30/93 only.

Table 1. Con't.

EXTERNAL ACTIVE STOCK MANAGERS

Risk Factor Exposures
July 1988 - June 1993

	Beta	Var. Mkts.	Suc.	Size	Trad. Act.	Growth	E/P	B/P	Earn. Var.	Finl.	For. Inc.	Labor Int.	Div. Yld.	Mo. T/O	Eq. Alloc.
Independence Investment Associates*															
Minimum	0.99	-0.10	-0.09	0.21	-0.04	-0.20	0.07	0.00	-0.05	0.06	-0.29	-0.06	0.08	0.00	97%
Average	1.01	-0.05	0.02	0.27	0.02	-0.16	0.12	0.05	0.01	0.13	-0.08	-0.01	0.14	4.67	99%
Maximum	1.01	-0.02	0.12	0.34	0.09	-0.13	0.21	0.10	0.07	0.20	0.06	0.04	0.20	14.04	100%
Bmrk. Avg.	1.00	-0.06	-0.04	0.32	-0.02	-0.08	-0.01	0.03	0.00	0.06	0.01	-0.07	0.07	N.A.	100%
Lieber & Co.															
Minimum	1.05	0.31	-0.27	-2.01	0.04	0.36	-0.10	-0.05	0.00	-0.27	-0.65	0.41	-0.68	0.10	91%
Average	1.11	0.51	0.03	-1.64	0.25	0.42	0.03	0.06	0.10	-0.11	-0.42	0.51	-0.54	3.28	95%
Maximum	1.19	0.83	0.28	-1.34	0.55	0.55	0.31	0.28	0.18	0.06	-0.27	0.66	-0.41	11.37	100%
Bmrk: Avg.	1.08	0.53	-0.06	-1.99	0.12	0.41	0.10	0.20	0.22	-0.04	-0.49	0.41	-0.44	N.A.	95%
Lynch & Mayer*															
Minimum	1.11	0.25	0.22	-0.06	0.36	0.46	-0.27	-0.36	0.06	-0.01	-0.07	0.23	-0.83	1.98	88%
Average	1.16	0.43	0.49	0.10	0.44	0.59	-0.14	-0.31	0.14	0.10	0.04	0.30	-0.70	7.79	93%
Maximum	1.20	0.62	0.71	0.34	0.52	0.75	0.01	-0.25	0.30	0.23	0.17	0.43	-0.57	19.32	99%
Bmrk. Avg.	1.18	0.55	0.44	-0.08	0.56	0.51	-0.11	-0.15	0.20	0.04	-0.13	0.22	-0.57	N.A.	95%
Waddell & Reed															
Minimum	1.10	0.28	-0.30	-1.32	0.36	0.32	-0.38	-0.25	0.20	-0.24	-0.50	0.15	-0.95	0.00	51%
Average	1.21	0.78	0.26	-1.01	0.74	0.71	-0.22	-0.06	0.51	0.06	-0.21	0.33	-0.68	11.45	72%
Maximum	1.31	1.25	0.81	-0.63	1.10	1.05	-0.02	0.18	0.70	0.34	0.03	0.54	-0.30	34.39	88%
Bmrk. Avg.	1.17	0.69	-0.08	-1.45	0.45	0.56	-0.18	0.10	0.42	0.20	-0.27	0.37	-0.56	N.A.	81%
Aggregate Active															
Minimum	1.08	0.25	-0.04	-0.66	0.29	0.32	-0.14	-0.25	0.11	-0.01	-0.29	0.16	-0.67	N.A.	N.A.
Average	1.15	0.46	0.24	-0.46	0.45	0.47	-0.07	-0.15	0.22	0.07	-0.11	0.25	-0.54	N.A.	N.A.
Maximum	1.19	0.73	0.57	-0.23	0.61	0.62	0.07	-0.05	0.31	0.20	0.21	0.37	-0.38	N.A.	N.A.

Bmrk. Avg. = Benchmark average.
Aggregate Active figures include data only for managers retained on 6/30/93.

*Note: Franklin retained on 4/1/89. Data covers period from 4/1/89 - 6/30/93 only.
GeoCapital retained on 4/1/90. Data covers period from 4/1/90 - 6/30/93 only.
Independence retained on 2/1/92. Data covers period from 2/1/92 - 6/30/93 only.
Lynch & Mayer retained on 2/1/92. Data covers period from 2/1/92 - 6/30/93 only.

Table 2.

EXTERNAL ACTIVE STOCK MANAGERS

Sector Weights
Actual Portfolio Less Benchmark Portfolio
Fiscal Year 1993

	Cons. Non Dur.	Cons. Dur.	Basic Mat.	Cap. Goods	Energy	Tech.	Trans.	Util.	Finl.
Alliance Capital									
Minimum	-6.44%	-2.02%	-5.66%	-2.88%	-0.33%	-4.68%	-2.77%	-1.97%	7.13%
Average	-0.28	-1.06	-4.16	-2.20	0.50	-0.74	-1.59	-0.95	10.48
Maximum	7.81	0.06	-2.04	-1.63	1.01	3.01	-0.46	-0.10	15.04
Bmrk. Avg.	58.46	3.78	7.75	4.99	0.27	7.85	3.37	1.93	11.59
Forstmann Leff									
Minimum	-9.27	-3.64	-6.22	-3.57	-2.43	-3.33	0.66	-0.63	-0.31
Average	-1.68	-1.41	-5.33	-2.76	2.62	0.62	2.59	3.73	1.62
Maximum	6.77	1.59	-4.43	-2.16	8.45	3.29	6.35	8.27	5.59
Bmrk. Avg.	40.19	5.69	10.02	5.48	5.90	6.97	3.12	4.27	18.36
Franklin Portfolio									
Minimum	-5.87	1.34	-7.08	-4.84	-1.50	1.08	-0.11	-1.45	-1.18
Average	-0.67	2.80	-5.25	-3.77	0.42	3.83	0.36	0.93	1.34
Maximum	3.92	4.22	-3.31	-2.32	1.80	5.20	1.39	2.81	3.78
Bmrk. Avg.	32.88	5.02	11.46	6.14	6.20	6.97	2.74	11.27	17.31
GeoCapital Corp.									
Minimum	0.82	-0.71	-0.80	-7.22	-3.12	-12.94	-2.26	-3.78	20.67
Average	2.79	-0.47	-0.20	-5.89	-2.69	-11.42	-1.90	-2.30	22.07
Maximum	6.08	-0.23	0.38	-4.99	-2.07	-9.47	-1.52	-1.07	25.04
Bmrk. Avg.	57.10	1.97	2.62	5.92	2.69	14.53	2.26	5.20	7.71
IDS Advisory									
Minimum	-17.96	4.97	4.98	-0.03	0.21	-4.14	-0.90	-11.72	-2.07
Average	-11.64	6.54	7.26	1.42	3.44	-0.10	3.93	-10.83	-0.02
Maximum	-6.85	8.28	10.27	3.68	7.32	3.55	8.72	-10.22	3.71
Bmrk. Avg.	36.91	5.34	8.08	4.99	4.73	8.23	3.67	12.60	15.46

Bmrk. Avg. = Benchmark average
Aggregate Active figures include data only for managers retained on 6/30/93.

Table 2 Con't.

EXTERNAL ACTIVE STOCK MANAGERS

Sector Weights
Actual Portfolio Less Benchmark Portfolio
Fiscal Year 1993

	Cons. Non Dur.	Cons. Dur.	Basic Mat.	Cap. Goods	Energy	Tech.	Trans.	Util.	Finl.
Independence Investment Associates									
Minimum	-4.71%	-0.79%	-2.29%	1.38%	-2.26%	-3.86%	-0.38%	-4.66%	2.11%
Average	-1.92	0.41	-1.48	2.89	-0.19	-1.65	0.62	-2.32	3.64
Maximum	1.33	1.87	-0.23	4.66	1.46	1.11	1.72	0.88	5.71
Bmrk. Avg.	34.86	4.84	7.88	5.18	9.36	6.16	2.15	16.10	13.47
Lieber & Co.									
Minimum	-7.33	-0.51	-0.95	-2.91	-3.15	-4.15	0.18	-4.41	6.98
Average	-2.22	1.11	-0.04	-1.24	-2.77	-3.08	0.63	-4.22	11.83
Maximum	1.76	2.13	0.93	0.34	-2.21	-1.69	1.08	-3.92	17.91
Bmrk. Avg.	38.81	5.71	10.57	6.84	2.99	7.12	2.31	4.29	21.37
Lynch & Mayer									
Minimum	-5.06	0.49	-6.66	-4.07	-5.66	-7.02	-3.52	-0.08	2.17
Average	-1.49	4.37	-5.13	-0.52	2.65	-4.34	-2.72	3.21	3.96
Maximum	2.70	8.67	-3.49	3.22	6.86	-1.24	-0.73	6.53	6.56
Bmrk. Avg.	44.05	5.06	5.64	3.89	5.06	8.98	2.90	7.72	16.70
Waddell & Reed									
Minimum	-9.16	-2.55	-12.91	-5.16	-3.38	-8.48	0.64	-0.46	6.32
Average	-2.48	0.81	-7.50	-4.16	1.76	-3.25	1.54	1.84	11.44
Maximum	4.31	3.65	-2.99	-3.13	8.44	4.28	4.28	4.43	17.81
Bmrk. Avg.	41.09	7.02	14.90	8.40	6.56	11.05	4.56	1.26	5.17
Aggregate Active									
Minimum	-5.06	0.10	-3.80	-2.97	-0.36	-3.18	-0.55	-1.69	6.51
Average	-1.99	0.96	-2.76	-1.91	0.79	-1.86	0.22	-1.07	7.61
Maximum	0.91	1.56	-1.63	-1.07	2.07	-0.03	1.19	-0.25	9.71

Bmrk. Avg. = Benchmark average

Aggregate Active figures include data only for managers retained on 6/30/93.

Table 3.

EXTERNAL ACTIVE STOCK MANAGERS

Five Year Quarterly Performance Summary

	3Q88	4Q88	1Q89	2Q89	3Q89	4Q89	1Q90	2Q90	3Q90	4Q90
Alliance Capital										
Actual Portfolio	-3.5%	0.6%	10.0%	11.7%	15.2%	0.3%	-2.6%	9.7%	-16.4%	9.7%
Benchmark Portfolio	-0.9	1.3	6.7	8.3	10.7	-3.6	-0.9	8.5	-18.3	10.3
Forstmann Leff										
Actual Portfolio	-2.6	2.6	8.3	2.1	9.8	-2.2	-2.7	2.9	-8.3	2.2
Benchmark Portfolio	0.1	1.6	6.3	6.2	7.8	-1.0	-1.3	5.0	-14.6	8.0
Franklin Portfolio										
Actual Portfolio	Manager not retained			9.7	11.1	-2.5	-3.2	2.4	-18.8	11.7
Benchmark Portfolio	until 2Q89.			8.4	7.4	-2.2	-3.6	4.1	-17.0	10.1
GeoCapital Corp.										
Actual Portfolio	Manager not retained until 2Q90.							6.0	-30.1	25.8
Benchmark Portfolio								6.1	-22.3	10.8
IDS Advisory										
Actual Portfolio	-3.7	1.6	8.2	7.5	15.8	-0.5	0.3	7.6	-19.4	4.7
Benchmark Portfolio	0.3	2.3	6.6	8.6	8.8	-0.3	-2.7	5.5	-14.7	7.9
Independence Investment Associates										
Actual Portfolio	Manager not retained until 1Q92.									
Benchmark Portfolio										
Lieber & Company										
Actual Portfolio	0.8	0.1	7.2	6.1	8.8	-3.9	-5.3	6.2	-21.4	11.8
Benchmark Portfolio	-1.0	0.3	7.1	6.4	8.0	-3.6	-3.8	2.1	-20.7	7.1
Lynch & Mayer										
Actual Portfolio	Manager not retained until 1Q92.									
Benchmark Portfolio										
Waddell & Reed										
Actual Portfolio	-5.9	1.2	5.2	10.4	12.1	-2.7	-0.3	5.8	-15.4	3.3
Benchmark Portfolio	-1.7	1.0	6.5	5.9	7.9	-2.5	-0.3	3.9	-17.4	6.9
Aggregate Active*	**-2.8**	**0.5**	**8.1**	**7.9**	**11.7**	**-1.4**	**-2.2**	**5.8**	**-17.1**	**7.3**
Market Index										
Wilshire 5000	0.2	2.3	7.4	8.5	10.1	0.6	-3.5	5.5	-15.2	8.7
Wilshire 5000 Adj.**	-0.1	2.0	7.2	8.5	10.0	0.6	-3.4	5.3	-15.5	8.6

* Aggregate Active performance numbers include returns of any managers retained during the time period shown but subsequently terminated by the Board.

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

Table 3 Con't.

EXTERNAL ACTIVE STOCK MANAGERS

Five Year Quarterly Performance Summary

	1Q91	2Q91	3Q91	4Q91	1Q92	2Q92	3Q92	4Q92	1Q93	2Q93
Alliance Capital										
Actual Portfolio	17.4%	-4.3%	10.0%	15.0%	-2.0%	-0.8%	4.4%	9.6%	3.9%	-0.9%
Benchmark Portfolio	17.3	-0.8	5.9	10.6	-3.6	-1.2	3.6	10.0	-1.0	-3.1
Forstmann Leff										
Actual Portfolio	19.3	-1.1	11.1	6.6	-2.0	-5.1	-0.4	12.3	1.0	-0.1
Benchmark Portfolio	15.2	0.2	5.1	6.4	1.3	-0.9	2.1	7.9	3.3	0.4
Franklin Portfolio										
Actual Portfolio	17.3	-2.4	5.7	9.0	-1.7	0.3	3.9	9.3	8.5	4.0
Benchmark Portfolio	17.9	0.1	6.1	7.9	-0.3	0.4	3.9	9.2	4.9	0.9
GeoCapital Corp.										
Actual Portfolio	30.3	-3.9	17.9	16.7	-3.0	-9.4	-0.4	16.1	-0.6	0.5
Benchmark Portfolio	24.6	-2.1	10.3	12.0	-1.0	-9.7	3.8	18.8	1.2	6.2
IDS Advisory										
Actual Portfolio	19.7	-1.4	5.6	10.9	-0.8	0.1	2.1	10.1	4.6	0.8
Benchmark Portfolio	13.3	-0.3	5.3	8.1	1.3	1.3	3.2	8.3	4.8	0.7
Independence Investment Associates										
Actual Portfolio					-0.6	2.9	2.4	7.2	5.4	0.3
Benchmark Portfolio					-0.4	2.4	3.5	5.7	5.3	0.1
Lieber & Company										
Actual Portfolio	19.9	0.1	6.1	7.7	0.8	-7.5	0.2	12.9	3.0	-2.3
Benchmark Portfolio	22.7	1.3	7.1	6.7	4.8	-3.9	2.4	13.0	2.8	0.1
Lynch & Mayer										
Actual Portfolio					0.2	-1.9	3.0	8.7	4.2	-2.0
Benchmark Portfolio					-2.0	-2.0	4.6	8.6	2.1	2.3
Waddell & Reed										
Actual Portfolio	14.1	-1.2	6.6	5.3	3.4	-3.1	4.7	9.4	1.9	6.2
Benchmark Portfolio	18.5	0.2	5.4	5.4	3.6	-3.4	2.5	9.9	3.6	2.0
Aggregate Active*	**17.6**	**-2.5**	**8.2**	**10.1**	**-1.0**	**-2.6**	**2.5**	**8.0**	**4.4**	**0.7**
Market Index										
Wilshire 5000	16.5	-0.3	6.4	8.7	-1.3	-0.1	3.1	7.3	4.3	0.8
Wilshire 5000 Adj.**	16.3	-0.3	6.2	8.5	-1.1	0.0	3.1	7.2	4.1	0.7

* Aggregate Active performance numbers include returns of any managers retained during the time period shown but subsequently terminated by the Board.

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

Table 4.

EXTERNAL STOCK MANAGERS

Five Year Annualized Performance Summary

	Year Ending 6/30/93		Two Years Ending 6/30/93		Three Years Ending 6/30/93		Five Years Ending 6/30/93	
	Actual Portfolio	Benchmark Portfolio	Actual Portfolio	Benchmark Portfolio	Actual Portfolio	Benchmark Portfolio	Actual Portfolio	Benchmark Portfolio
Active Managers								
Alliance Capital	17.8%	9.2%	20.3%	10.4%	14.2%	8.5%	17.0%	11.2%
Forstmann Leff	12.9	14.3	11.4	13.3	11.2	10.9	10.3	11.6
Franklin	28.1	19.9	20.6	17.2	14.8	14.0	Manager retained 4/1/89	
GeoCapital	15.6	31.5	18.3	20.5	15.5	15.1	Manager retained 4/1/90	
IDS	18.5	17.8	17.4	17.3	11.1	12.7	14.2	13.6
Independence	16.1	15.3	Manager retained 2/1/92					
Lieber & Company	13.8	19.0	10.1	17.0	8.5	13.1	9.1	10.8
Lynch & Mayer	14.3	18.6	Manager retained 2/1/92					
Waddell & Reed	24.0	18.7	18.1	14.9	11.1	11.5	11.8	11.1
Passive Manager								
Wilshire Associates	15.3%	15.7%	14.7%	15.1%	11.8%	12.3%	13.4%	13.8%
Total Basic Retirement Funds' Common Stock Segment*	16.3%	16.2%	15.3%	14.9%	11.7%	12.0%	13.2%	13.2%
Capital Markets Data								
Wilshire 5000	16.1%	—	15.1%	—	12.3%	—	13.8%	—
Wilshire 5000 Adj.**	16.0	—	14.9	—	12.0	—	13.4	—
91-Day Treasury Bills	3.1	—	3.9	—	4.9	—	6.2	—
Inflation	3.0	—	3.0	—	3.6	—	4.1	—

* Total segment performance numbers include returns of any managers retained during the time periods shown but subsequently terminated by the Board.

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

BOND MANAGER PORTFOLIO CHARACTERISTICS GLOSSARY

The bond manager portfolio statistics glossary is designed to define terminology the State Board of Investment uses in evaluating a bond manager's investment philosophy, risk characteritics and performance data. The definitions refer to categories shown in Table 5.

Average Quality Weightings (Avg. Qual.) — Refers 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.

Bond Allocation (Bond Alloc.) — 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 (Cur. Yield) — The annual interest payment produced by the manager's total portfolio stated as a percent of the portfolio's market value.

Duration (Dur.) — A measure of the average life of the total portfolio. Duration is a weighted average maturity where 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.

Number of Issues (# of Issues) — The number of different bond issues held in the manager's portfolio.

Quarterly Turnover (Qtr. T/O) — The manager's total bond sales during the quarter divided by the average value of the manager's bond portfolio over the quarter.

Term to Maturity (Term to Mat.) — 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.

Yield to Maturity (Yield to Mat.) — 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.

Table 5.

EXTERNAL ACTIVE BOND MANAGERS

Portfolio Characteristics

July 1988 - June 1993

	Qtr. T/O	# Of Issues	Bond Alloc.	Coupon	Yield To Mat.	Avg. Qual.	Dur.	Term To Mat.
Ark Asset Management								
Minimum	14%	39	95%	6.47%	5.85%	AAA	3.63 Yrs.	5.60 Yrs.
Average	41	53	98	7.90	7.49	AAA	4.28	7.38
Maximum	87	70	100	8.50	8.95	AAA	5.51	9.70
Investment Advisers								
Minimum	2	11	96	5.53	5.86	AAA	5.91	9.30
Average	24	21	98	7.36	7.66	AAA	6.66	14.75
Maximum	73	54	100	8.82	9.00	AAA	7.00	19.77
Miller Anderson								
Minimum	7	55	89	5.40	6.64	AA	5.16	9.40
Average	46	80	97	10.25	8.50	AAA	6.66	11.03
Maximum	86	138	100	21.08	9.70	AAA	7.00	16.10
Western Asset								
Minimum	19	46	80	6.31	5.81	AA	4.74	8.74
Average	58	69	95	8.06	7.88	AA	5.30	15.32
Maximum	104	94	100	8.90	9.16	AA	5.64	18.40
Salomon BIG*								
Minimum				7.89	7.83	AAA	4.39	8.40
Average				8.66	7.82	AAA	4.58	9.23
Maximum				9.04	9.19	AAA	4.69	9.80

* Salomon Broad Investment Grade Bond Index

Table 6.

EXTERNAL ACTIVE BOND MANAGERS

Sector Weights

Fiscal Year 1993

(In Percentages)

	Treas	Agcy	Total Govt	Ind	Util	Fin	Tran	Total Corp	Mtgs	Misc	Cash
Ark Asset Management											
Minimum	40	12	57	0	0	0	0	0	20	0	0
Average	52	15	67	0	0	3	0	2	24	7	1
Maximum	58	19	77	0	0	6	0	6	28	20	2
Investment Advisers											
Minimum	31	2	34	7	2	7	0	18	30	14	0
Average	34	3	37	8	3	8	0	18	31	14	1
Maximum	36	3	39	8	3	9	0	18	32	15	3
Miller Anderson											
Minimum	15	0	20	6	0	6	1	15	45	1	0
Average	20	4	24	8	0	10	2	19	51	5	2
Maximum	24	5	29	10	1	14	2	23	56	7	5
Western Asset											
Minimum	6	6	12	18	5	3	0	30	18	7	1
Average	18	6	25	22	7	9	0	38	19	10	9
Maximum	26	7	33	26	9	11	0	42	20	17	20
Salomon BIG*											
Minimum			53					18	26		
Average			53					18	28		
Maximum			53					19	29		

Abbreviations:

Treas	Treasuries
Agcy	Government agencies
Ind	Industrials
Util	Utilities
Fin	Financials
Tran	Transportation
Mtgs	Mortgages
Misc	Miscellaneous or other

* The Salomon Broad Investment Grade (BIG) Bond Index categorizes the index according to Government, Corporate, and Mortgage securities only.

Table 7.

EXTERNAL ACTIVE BOND MANAGERS

Five Year Quarterly Performance Summary

	3Q88	4Q88	1Q89	2Q89	3Q89	4Q89	1Q90	2Q90	3Q90	4Q90
Ark Asset Management										
Actual Portfolio	3.3%	0.8%	1.3%	7.0%	1.1%	3.2%	-0.5%	3.2%	1.2%	4.6%
Benchmark Portfolio**	1.8	0.9	1.2	7.2	1.2	3.5	-0.4	3.4	1.2	4.6
Investment Advisers										
Actual Portfolio	1.9	0.6	1.3	9.8	0.4	4.2	-2.7	4.0	-0.6	7.0
Benchmark Portfolio**	2.0	0.8	1.1	8.4	0.9	3.9	-1.2	3.7	0.8	5.4
Miller Anderson										
Actual Portfolio	1.9	1.6	1.4	4.4	0.4	3.4	-0.7	3.8	-0.5	6.1
Benchmark Portfolio**	2.0	0.8	1.2	7.9	1.0	3.7	-0.8	3.6	1.0	5.1
Western Asset										
Actual Portfolio	2.7	1.5	1.5	8.2	1.8	3.5	-1.4	3.7	0.1	5.5
Benchmark Portfolio**	2.2	0.9	1.2	7.8	1.0	3.6	-0.4	3.7	0.8	4.8
Aggregate Active*	2.4	1.1	1.4	6.9	1.2	3.5	-1.3	3.7	-0.1	5.4
Market Index										
Salomon Broad Investment Grade Bond Index	2.0	0.8	1.2	7.9	1.0	3.7	-0.8	3.6	1.0	5.1

* Aggregate Active performance numbers include returns of any managers retained during the time periods shown but subsequently terminated by the Board.

** Customized benchmarks were used prior to 10/91 when the benchmark changed to the Salomon Broad Investment Grade Bond Index.

Table 7 Con't.

EXTERNAL ACTIVE BOND MANAGERS

Five Year Quarterly Performance Summary

	1Q91	2Q91	3Q91	4Q91	1Q92	2Q92	3Q92	4Q92	1Q93	2Q93
Ark Asset Management										
Actual Portfolio	2.5%	1.7%	5.4%	4.7%	-1.7%	4.3%	4.2%	0.2%	4.3%	2.7%
Benchmark Portfolio**	2.5	1.6	5.1	5.0	-1.2	4.1	4.3	0.3	4.2	2.8
Investment Advisers										
Actual Portfolio	2.4	1.2	7.0	6.0	-2.7	4.4	5.9	0.2	5.3	3.8
Benchmark Portfolio**	2.3	1.6	6.0	5.0	-1.2	4.1	4.3	0.3	4.2	2.8
Miller Anderson										
Actual Portfolio	3.2	1.7	7.3	7.2	-2.3	4.1	4.1	1.3	4.5	3.9
Benchmark Portfolio**	2.6	1.8	5.7	5.0	-1.2	4.1	4.3	0.3	4.2	2.8
Western Asset										
Actual Portfolio	3.4	1.8	6.3	5.4	-0.6	3.8	4.0	0.9	5.2	4.0
Benchmark Portfolio**	3.0	2.0	5.8	5.0	-1.2	4.1	4.3	0.3	4.2	2.8
Aggregate Active*	3.0	1.7	6.0	5.5	-1.3	3.9	4.4	0.6	4.6	3.3
Market Index										
Salomon Broad Investment Grade Bond Index	2.6	1.8	5.7	5.0	-1.2	4.1	4.3	0.3	4.2	2.8

* Aggregate Active performance numbers include returns of any managers retained during the time periods shown but subsequently terminated by the Board.

** Customized benchmarks were used prior to 10/91 when the benchmark changed to the Salomon Broad Investment Grade Bond Index.

Table 8.

EXTERNAL BOND MANAGERS
Five Year Annualized Performance Summary

	Year Ending 6/30/93		Two Years Ending 6/30/93		Three Years Ending 6/30/93		Five Years Ending 6/30/93	
	Actual Portfolio	Benchmark Portfolio	Actual Portfolio	Benchmark Portfolio	Actual Portfolio	Benchmark Portfolio	Actual Portfolio	Benchmark Portoflio
Active Managers								
Ark Asset Mgmt.	11.9%	12.0%	12.5%	12.7%	11.7%	11.9%	11.0%	11.0%
Investment Advisers	16.0	12.0	15.6	13.2	13.7	12.3	12.2	11.4
Miller Anderson	14.5	12.0	15.7	13.1	14.0	12.3	11.7	11.4
Western Asset	14.9	12.0	15.3	13.1	13.9	12.4	12.8	11.5
Semi-Passive Managers								
Fidelity Management	12.5	12.0	13.3	13.1	12.7	12.3	11.6	11.4
Lincoln Capital	12.2	12.0	13.1	13.1	12.3	12.3	11.4	11.4
Total Basic Retirement Funds' Bond Segment*	13.3%	12.0%	14.0%	13.1%	13.0%	12.3%	11.7%	11.4%
Capital Markets Data								
Salomon BIG Index**	12.0%	—	13.1%	—	12.3%	—	11.4%	—
91 Day Treasury Bills	3.1	—	3.9	—	4.9	—	6.2	—
Inflation	3.0	—	3.0	—	3.6	—	4.1	—

* Total segment performance numbers include returns of any managers retained during the time periods shown but subsequently terminated by the Board.

**Salomon Broad Investment Grade Bond Index

Table 9.

INTERNATIONAL STOCK MANAGERS

Country Weights as of June 30, 1993

Country	**State Street(1)**	**Baring(2)**	**Brinson(2)**	**Aggregate(3)**	**EAFE Index(4)**
Austria	0.40%	0.0%	0.0%	**0.32%**	0.40%
Australia	2.41	0.0	2.68	**2.20**	2.36
Belgium	1.15	0.0	0.40	**0.96**	1.09
Denmark	0.65	0.0	0.0	**0.52**	0.64
Finland	0.25	0.0	0.0	**0.20**	0.29
France	5.74	1.34	0.0	**4.77**	5.77
Germany	5.88	0.46	1.38	**4.89**	5.68
Hong Kong	3.38	11.78	2.87	**4.16**	3.32
Ireland	0.23	0.0	0.0	**0.19**	0.25
Italy	1.94	0.91	3.35	**1.98**	1.91
Japan	47.98	28.60	17.36	**43.01**	48.29
Malaysia	1.25	3.85	0.0	**1.38**	1.57
Netherlands	3.08	1.41	1.17	**2.73**	2.95
New Zealand	0.31	0.0	0.63	**0.31**	0.30
Norway	0.33	0.0	0.0	**0.27**	0.32
Singapore	0.88	4.85	0.0	**1.19**	0.88
Spain	1.71	1.78	3.38	**1.88**	1.82
Sweden	1.29	1.35	3.59	**1.53**	1.30
Switzerland	4.31	1.93	1.50	**3.79**	4.20
United Kingdom	16.76	14.81	17.60	**16.64**	16.67
Total	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

(1) Index fund manager

(2) Active country/passive stock manager

(3) Aggregate of index and active/passive managers

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

Table 10.

ALTERNATIVE ASSETS

Summary of Commitments
As of June 30, 1993

	Total Fund Size (Millions)	SBI Inception Date	SBI Commitment	SBI Funded	SBI To Be Funded	Fund Description
Real Estate						
Aetna	$1,573	4/82	$40,000,000	$40,000,000	$0	Open End
Aetna 13354*	1,573	6/93	2,500,000	2,500,000	0	Open End
AEW III	103	9/85	20,000,000	20,000,000	0	Closed End
AEW IV	86	9/86	17,400,000	15,000,000	2,400,000	Closed End
AEW V	82	12/87	15,000,000	15,000,000	0	Closed End
Equitable	3,613	10/81	40,000,000	40,000,000	0	Open End
Heitman I	113	8/84	20,000,000	20,000,000	0	Closed End
Heitman II	238	11/85	30,000,000	30,000,000	0	Closed End
Heitman III	200	1/87	20,000,000	20,000,000	0	Closed End
Heitman V	127	7/91	20,000,000	20,000,000	0	Closed End
LaSalle	76	9/91	15,000,000	6,019,808	8,980,192	Closed End
Paine Webber*	124	2/90	500,000	500,000	0	Closed End
RREEF	773	9/84	75,000,000	75,000,000	0	Closed End
TCW III	216	8/85	40,000,000	40,000,000	0	Closed End
TCW IV	250	11/86	30,000,000	30,000,000	0	Closed End
Zell	431	7/91	50,000,000	27,932,546	22,067,454	Closed End
Real Estate Total			**$435,700,000**	**$402,252,354**	**$33,447,646**	
Resource (Oil & Gas)						
AMGO I	$144	9/81	$15,000,000	$15,000,000	$0	Debt with Equity
AMGO II	36	2/83	7,000,000	7,000,000	0	Debt with Equity
AMGO IV	75	7/88	12,300,000	12,300,000	0	Debt with Equity
AMGO V	85	5/90	16,800,000	14,535,147	2,264,853	Debt with Equity
Apache III	190	12/86	30,000,000	30,000,000	0	Net Profits Interest
British Pet.	500	2/89	25,000,000	25,000,000	0	Royalty
Morgan O&G	135	8/88	15,000,000	13,799,697	1,200,303	Debt with Equity
Simmons OFS	100	7/91	17,000,000	6,914,150	10,085,850	Equity
Resource Totals			**$138,100,000**	**$124,548,994**	**$13,551,006**	

(Continued on following page)

* Received from Police & Fire Fund Consolidations

Table 10 Con't.

ALTERNATIVE ASSETS

Summary of Commitments
As of June 30, 1993

	Total Fund Size (Millions)	SBI Inception Date	SBI Commitment	SBI Funded	SBI To Be Funded	Fund Description
Venture Capital						
Allied	$40	9/85	$5,000,000	$5,000,000	$0	Later Stage
Bank Fund III	125	10/92	20,000,000	5,000,000	15,000,000	Later Stage
Brinson	50	5/88	5,157,668	5,157,668	0	Secondary Interests
Brinson II	110	7/90	20,000,000	12,000,000	8,000,000	Secondary Interests
Churchill II	150	10/92	20,000,000	4,000,000	16,000,000	Later Stage
DSV	60	4/85	10,000,000	10,000,000	0	Early Stage
First Century	100	12/84	10,000,000	9,350,000	650,000	Early Stage
Golder Thoma III	225	10/87	14,000,000	10,505,000	3,495,000	Later Stage
Golder Thoma IV	300	4/93	20,000,000	0	20,000,000	Later Stage
IAI Ventures I*	40	3/91	518,789	518,789	0	Early Stage
IAI Ventures II	64	7/90	10,000,000	5,753,640	4,246,360	Early Stage
IMR Partnership	500	8/92	30,000,000	588,000	29,412,000	LBO
Inman/Bowman	44	6/85	7,500,000	7,500,000	0	Early Stage
KKR 1984 Fund	1,000	3/84	25,000,000	25,000,000	0	LBO
KKR 1986 Fund	2,000	12/85	18,365,339	18,365,339	0	LBO
KKR 1987 Fund	5,600	10/87	146,634,660	131,790,000	14,844,660	LBO
KKR 1991 Fund	1,200	5/91	150,000,000	0	150,000,000	LBO
Matrix II	70	8/85	10,000,000	10,000,000	0	Early Stage
Matrix III	80	5/90	10,000,000	6,500,000	3,500,000	Early Stage
Norwest	60	1/84	10,000,000	10,000,000	0	Early Stage
Summit I	93	12/84	10,000,000	10,000,000	0	Later Stage
Summit II	230	5/88	30,000,000	25,500,000	4,500,000	Later Stage
Superior	35	6/86	6,645,000	6,312,750	332,250	Early Stage-Mn.
T. Rowe Price	—	11/87	18,911,375	18,911,375	0	IPO Manager
Zell/Chilmark	1,000	7/90	30,000,000	25,794,325	4,205,675	Restructuring
Venture Capital Totals			**$637,732,831**	**$363,546,886**	**$274,185,945**	

SUMMARY

Real Estate Totals	$435,700,000	$402,252,354	$33,447,646
Resource Totals	138,100,000	124,548,994	13,551,006
Venture Capital Totals	637,732,831	363,546,886	274,185,945
GRAND TOTALS	**$1,211,532,831**	**$890,348,234**	**$321,184,597**

* Received from Police & Fire Fund Consolidations

TIME-WEIGHTED RATE OF RETURN

In measuring the performance of a manager or fund whose investment objective is to maximize the total value of an investment portfolio, the proper measuring tool is the time-weighted total rate of return. This performance measure includes the effect of income earned as well as realized and unrealized portfolio market value changes. In addition, the time-weighted total rate of return nets out the influence of contributions made to and distributions taken from the manager or fund. These are variables over which the manager or fund generally has no control.

The calculation of a portfolio's true time-weighted return requires that the portfolio be valued every time that there is a capital flow in or out. Because most portfolios are not valued that frequently, it is usually necessary to estimate the time-weighted total rates of return by approximating the required valuations.

In 1968, the Bank Administration Institute (BAI) commissioned a study, conducted by the University of Chicago, which considered desirable methods of estimating time-weighted returns. The BAI report is considered to be the definitive work in the field of performance measurement because of the academic reputations and thorough scientific efforts of its authors.

When monthly data are available, the BAI study recommends employing a technique called the linked internal rate of return (LIRR). State Street Bank, the SBI's performance measurement consultant, calculates the LIRR by solving the following equation for R:

$$VB * (1+R) + \sum_{i=1}^{n} C_i * (1+R)^{ti} = VE$$

Where:

VB = Value of the fund at the beginning of the month

VE = Value of the fund at the end of the month

C_i = Net cash flow on the ith day of the month

n = Number of cash flows in the month

R = Internal rate of return

ti = Time from cash flow i to the end of the period, expressed as a percentage of the total number days in the month

The internal rate of return, R, is a proxy for the true time-weighted return over the month. It approximates the interim valuations by assuming a uniform growth of the invested assets throughout the period.

The IRR's calculated for each month can be linked together to estimate the time-weighted return for a longer period. For example, given three consecutive monthly IRR's (R1, R2, and R3), the quarterly time-weighted return (TWRQ) is:

$$TWRQ = (1+R1)*(1+R2)*(1+R3) - 1$$

MINNESOTA STATE BOARD OF INVESTMENT

Calculation of January 1, 1994 Benefit Increase

Actuarily valued required reserves at Jan. 1, 1994	$ 6,875,719,000
Less: Reserves not eligible for increase	415,549,000
Actuarily determined eligible reserves at Jan. 1, 1994	6,460,170,000
FY93 CPI inflation rate capped At 3.5%	2.800%
Dollar cost of inflationary increase	180,884,760
June 30, 1993 total required reserves	7,049,322,000
June 30, 1993 total required reserves adjusted for inflationary increase	7,230,206,760
Market value of aAssets June 30, 1993	8,269,233,081
Less: Inflation adjusted required reserves	7,230,206,760
Current year excess market value	1,039,026,321
Negative balance carryforward	0
Excess market value available for investment based benefit increase	1,039,026,321
Divided by 5 year pay out period	5
Current year portion of excess market value	207,805,264
Second year portion	0
Third year portion	0
Fourth year portion	0
Fifth year portion	0
Total five year excess market value	207,805,264
Cost of transition adjustment	64,601,700
Greater of current year excess market value or cost of transition adjustment	207,805,264
Divided by eligible required reserves Jan. 1, 1994	$ 6,460,170,000
Investment based increase for FY93	3.217%

Summary:

Investment Based Benefit Increase	**3.217%**
Inflation Based Benefit Increase	**2.800%**
Total Benefit Increase	**6.017%**
Total Dollar Value of January 1, 1994 Benefit Increase	**$ 388,690,024**

EXTERNAL STOCK AND BOND MANAGER FEES

Total Payments for Fiscal Year 1993

Active Domestic Stock Managers (1)

Alliance Capital	$ 2,844,245
Forstmann Leff Associates	775,696
Franklin Portfolio Associates	850,202
GeoCapital Corp.	884,454
IDS Advisory	471,783
Independence Investment Associates	659,532
Lieber & Company	428,332
Lynch & Mayer	635,371
Waddell & Reed	750,268

Passive Domestic Stock Manager (2)

Wilshire Associates	$ 718,842

Active Domestic Bond Managers (2)

Ark Asset Management	$ 272,181
Investment Advisers Inc.	394,951
Miller, Anderson & Sherrerd	577,313
Western Asset Management	860,083

Semi-Passive Domestic Bond Managers (3)

Fidelity Management Trust	$ 775,194
Lincoln Capital Management	498,984

International Stock Managers (2)

Baring International	$ 54,374
Brinson Partners	63,517
State Street Global Advisers	108,629

(1) Active domestic stock managers are compensated on a performance-based fee formula. Fees earned may range from zero to twice the manager's base fee, depending on the manager's performance relative to an established benchmark.

(2)The passive domestic stock manager, international stock managers and active domestic bond managers are compensated based on a specified percentage of assets under management.

(3) The semi-passive domestic bond managers are compensated on a performance-based fee formula. Fees earned may range from 5 to 10 basis points of assets under management, depending on the manager's performance relative to an established benchmark.

COMMISSIONS AND TRADING VOLUME

By Broker for Fiscal Year 1993

Broker	Stock $ Volume	Stock $ Commissions	Bond $ Volume	Bond $ Commissions	Short Term $ Volume
ABD Securities	$ 26,122,000	$ 0	$ 0	$ 0	$ 0
Abner Herrman & Brock	613,935	1,050	0	0	0
Adams Harkness & Hill	3,336,463	3,712	0	0	0
Adler, Coleman & Co.	1,591,262	2,775	0	0	0
AIG Capital	380,765	570	14,971,800	0	0
Allen & Co.	676,312	1,463	0	0	0
Allison-Williams	0	0	3,303,875	13,635	0
Alpha Management Inc.	4,859,601	12,910	0	0	0
American Express Credit	0	0	0	0	54,750,078
Arbor Trading	0	0	9,155,745	0	0
Arnhold	50,417,978	118,795	0	0	0
Arnold S.	90,590	206	0	0	0
Asiel & Co.	913,919	1,050	0	0	0
Associates Corp. of N.A.	0	0	0	0	185,783,572
Autranet	30,238,175	48,323	45,804,410	6,695	0
B.A. Bradshaw & Co.	0	0	4,776,369	0	0
Bagcm B.D.A. Greenwich Cap.	0	0	11,336,063	0	0
Bank of America	0	0	38,628,906	0	79,839,999
Bank of NY Securities Inc.	0	0	31,750	0	0
Bankers Discount Corp.	0	0	0	0	30,768,056
Bankers Trust	0	0	3,330,600	0	0
Barclays American Corp.	0	0	15,130,938	0	10,199,136
Baum, George K. & Co.	0	0	12,385,500	0	0
Bear Stearns & Co.	85,757,932	90,767	156,620,378	0	0
Beneficial Corp.	0	0	0	0	4,974,433
Benito & M	8,289,521	23,858	0	0	0
Bernstein, Sanford & Co.	32,230,127	53,374	0	0	0
Blair & Co.	10,801,968	21,750	1,031,350	0	0
Brad Peery Inc.	2,700,524	5,709	0	0	0
Brandt (Robert) & Co.	19,893,614	26,560	0	0	0
Brick Securities	1,138,349	1,752	0	0	0
Bridge Trading Co.	16,930,548	23,311	0	0	0
Broadcort Capital	297,355,519	450,423	10,031,277	0	0
Brown (Alex) & Sons, Inc.	35,185,925	40,077	3,030,147	0	0
Brown Bros. Harriman	5,263,188	8,590	49,974,770	0	0
BT Securities Corp.	9,668,696	1,775	42,557,850	0	2,846,944
BZW Secs.	0	0	29,226,246	0	0
Cantor Fitzgerald	198,704,282	338,976	0	0	0
Capel, James	57,732,140	268,223	0	0	0
Capital Inst. Services	11,074,636	16,314	0	0	0
Carroll McEntee & McGinley	0	0	79,973,793	0	0
Carrull, M.	0	0	3,053,531	0	0
Chase Commercial Paper	0	0	0	0	23,090,023
Chase Govt. Securities Inc.	0	0	6,823,438	0	0
Chase Manhattan Bank	0	0	15,612,358	0	9,970,938
Chase Securities Inc.	0	0	30,233,828	0	24,717,799
Chemical Bank	0	0	5,570,313	0	51,824,871
Chemical Bank NY	0	0	657,438	0	0
Chemical Securities Inc.	0	0	31,386,395	0	125,337,849
Chevron Oil Fin. Co.	0	0	0	0	9,979,167
Chicago Corp.	1,820,910	4,548	0	0	0
Chicago Re	0	0	16,569,280	0	0
CIBC/Wood Gundy	0	0	0	0	64,720,240
CIT Group Holdings	0	0	0	0	218,628,292
Citibank	0	0	2,991,120	0	2,970,867
Citicorp	0	0	2,098,245	0	0
Citicorp Sec. Markets Inc.	0	0	5,506,875	0	239,796,821
CL Glazer Inc.	6,359,924	8,281	0	0	0
Cleary Gull Reiland	1,540,315	2,208	0	0	0
Commercial Credit Co.	0	0	0	0	59,532,417
Cooper Inv.	0	0	150,056	0	0
County Natwest Securities Corp.	34,843,102	46,956	0	0	0
Cowen & Co.	43,078,661	41,025	9,302,535	0	0
Craig-Hallum Inc.	0	0	459,896	0	0
Cronin & Co. Inc.	0	0	860,999	0	0
Crosby Securities	2,675,246	13,282	0	0	0
CRT Govt. Securities Ltd.	0	0	659,211,947	0	15,180,000,000
Cyrus J. Lawrence	38,253,344	59,824	0	0	0
Dain Bosworth, Inc.	4,384,956	8,178	6,310,250	0	0
Dain Kalman & Quail	0	0	20,383,311	0	0
Daiwa Sec. America	15,006,788	13,494	70,196,372	0	1,535,000,000
Davis	954,902	786	0	0	0
Dean Witter Reynolds	9,562,990	13,204	73,507,648	0	11,275,000,000
Deere & Co.	0	0	0	0	59,236,533

COMMISSIONS AND TRADING VOLUME

By Broker for Fiscal Year 1993

Broker	Stock $ Volume	Stock $ Commissions	Bond $ Volume	Bond $ Commissions	Short Term $ Volume
Deere (John) Capital Corp.	$ 0	$ 0	$ 0	$ 0	$ 9,948,333
Derby Sec.	8,114,701	9,276	0	0	0
Deutsche Bank Govt. Sec. Inc.	0	0	77,506,250	0	0
Dillon Read	11,882,899	12,483	227,238,080	0	420,000,000
Discount Corp. NY	0	0	662,592,721	0	70,000,000
DLJ Fixed Income	0	0	160,426,964	0	0
Dominick & Dominick	766,774	700	0	0	0
Donaldson Lufkin	5,678,577	6,245	225,109,897	240,611	4,613,000,000
Eastbridge Capital Inc.	0	0	36,871,094	0	0
Econo Trading	122,261	285	0	0	0
Edwards-Bond Service	0	0	1,997,300	0	0
Edwards A.G. & Sons	5,043,704	8,748	15,829,594	0	0
Eppler	1,570,320	2,100	0	0	0
FCA Securities	0	0	4,071,516	0	0
Factset Data	8,731,190	10,782	0	0	0
Fagenson & Co.	197,225	350	0	0	0
Ferris & Co.	255,250	0	0	0	0
Fidelity	13,550,759	14,840	0	0	0
First Albany	485,987	1,188	5,221,201	0	0
First Bank Capital Mkts.	0	0	3,682,509	0	2,989,860
First Boston Corp.	98,328,556	128,130	794,562,255	69,565	494,152,539
First Chicago Capital Markets Inc.	0	0	0	0	2,599,754
First Manhattan Company	5,100,788	11,637	0	0	0
First Nat'l. Bank Boston	0	0	0	0	7,054,561
First Nat'l. Bank Chicago	0	0	0	0	1,189,232
Ford Financial Services	0	0	20,000,000	0	213,983,751
Freeman Securities	0	0	559,106	0	0
Friend (L.H.) & Co.	1,980,720	2,100	0	0	0
Furman Selz Mager	14,962,975	12,731	0	0	0
Gena, New	5,446,063	2,400	0	0	0
General Electric Capital Corp.	0	0	0	0	34,448,683
General Electric Financial Serv.	0	0	0	0	271,678,443
Gilder Gagnon	2,148,157	3,162	0	0	0
Goldman Sachs & Co.	119,552,617	87,597	3,017,420,846	39,660	273,109,361
Golds-Gold	0	0	7,636,516	0	0
Government Securities Corp.	0	0	1,017,000	0	0
Gowell Securities	0	0	5,064,000	0	0
Greenwich Capital Markets, Inc.	0	0	437,743,357	0	7,156,000,000
Gruntal & Co.	4,817,474	6,572	476,132	0	0
GX Clarke	0	0	6,635,383	0	50,932,000
Hall Inter.	8,109,015	16,637	0	0	0
Hanifin	423,786	1,200	0	0	0
Heller Capital Markets	0	0	0	0	193,478,131
Herzog Heine Gedvid	11,880,765	7,122	0	0	0
Hoenig & Co.	5,520,388	10,964	0	0	0
Industrial Bank of Japan	0	0	1,523,665	0	0
Instinet	122,893,072	133,560	0	0	0
Internal Swap Broker	308,688,447	0	0	0	0
IInterstate	2,732,189	5,530	0	0	0
Investment Technology Corp.	43,033,078	27,686	0	0	0
ISI Group	8,981,811	14,330	6,999,563	0	0
ITT Financial	0	0	5,000,000	0	19,891,500
ITT Financial Sec. Inc.	0	0	0	0	65,649,378
J.C. Bradford & Co.	508,950	0	0	0	0
J.P. Morgan & Co.	331,406	0	151,551,538	0	0
J.P. Morgan Securities Inc.	13,266,290	20,548	191,052,656	0	15,949,700
Janney Montgomery Scott	3,024,014	4,626	8,646,425	0	0
Jean Pierre Penatton	18,481,545	5,542	0	0	0
Jefferies & Co.	327,909,739	456,406	0	0	0
Jones & Assoc.	6,964,696	10,354	0	0	0
Kasper	0	0	0	0	1,399,874
Keefe Bruyette & Woods	199,998	438	0	0	0
Kemper Cap.	5,181,250	8,406	0	0	0
Kidder Peabody	41,861,875	91,495	319,443,002	52,500	4,343,014,102
Kinnard John G. & Co.	658,028	700	0	0	0
Kleinworth Benson Inc.	5,665,001	11,251	0	0	0
Lamberson Knight	0	0	0	0	9,774,133
Lazard Freres & Co.	3,874,672	840	0	0	0
Legg Mason	1,061,125	3,222	1,386,177	0	0
Lehman Bros. Inc.	164,619,203	259,255	1,101,569,407	0	793,429,534
Lehman Brothers Inc.	1,246,929	0	4,136,973	0	6,399,444
Lehman Govt. Securities	0	0	272,468,446	0	5,879,913,707
Lewco Securities, Inc.	56,157,806	86,482	5,512,627	0	0
Lewis	0	0	1,122,980	0	0

COMMISSIONS AND TRADING VOLUME

By Broker for Fiscal Year 1993

Broker	Stock $ Volume	Stock $ Commissions	Bond $ Volume	Bond $ Commissions	Short Term $ Volume
Lieber & Company	$ 14,205	$ 170	$ 0	$ 0	$ 0
Lipper Analytical Dist.	1,917,138	2,870	0	0	0
Lynch, Jones & Ryan	77,698,043	100,785	36,927,695	0	0
Mabon Nugent & Co.	5,944,282	23,613	0	0	0
Marquette National Bank	0	0	7,418,551	0	246,873,000
Maxwell Y Espinosa	3,718,232	24,934	0	0	0
Mayer & Schweitzer Inc.	247,500	0	0	0	0
McDonald & Company	3,897,291	7,316	19,781,693	0	0
Mellon Bank	14,999,989	0	0	0	0
Merrill Lynch PF&S	173,797,840	207,401	1,791,819,991	129,760	2,755,434,787
Mesirow & Company	0	0	2,352,036	0	0
Montgomery Securities	44,659,879	45,875	42,485	0	0
Morgan Guaranty	1,739,428	1,968	6,958,563	0	141,653,062
Morgan Kegan Inc.	2,124,503	2,289	0	0	0
Morgan Stanley & Co.	1,096,916,136	317,690	828,578,230	55,000	735,823,344
National City Bank Mpls.	0	0	0	0	105,300,000
National Financial	3,041,625	6,000	0	0	0
National Westminster	0	0	32,535,219	0	5,900,000
Nations Bank	0	0	4,802,324	0	0
Nations Bank Capital Mrkts.	0	0	0	0	22,902,699
Needham Securities	101,563	0	0	0	0
Neuberger & Berman	8,992,446	12,737	0	0	0
Nikko Securities	0	0	9,967,188	0	2,079,000,000
Nomura Securities Int'l.	3,561,033	2,155	6,823,438	0	1,143,000,000
Norwest Bank Mn.	0	0	0	0	31,000,000
Norwest Bank Mpls.	0	0	0	0	334,000
Norwest Financial Inc.	0	0	0	0	19,862,907
Norwest Investment Services Inc.	0	0	58,707,683	0	1,217,014,436
Nuveen John & Company	0	0	5,153,125	0	0
Oppenheimer & Co.	28,445,822	50,829	0	0	0
Ord Minnett	6,510,915	21,699	0	0	0
Paine Webber Inc.	0	0	284,809,551	0	7,486,985,000
Paine Webber J & C	159,997,570	228,566	449,178,399	17,438	140,000,000
Paribas Co.	669,030	0	0	0	0
Paulsen, Dowling	226,250	0	0	0	0
Pershing	52,676,506	73,678	252,462,392	469	0
Peterbroeck	3,296,408	0	0	0	0
Pforzheimer Carl H.	5,905,474	9,000	0	0	0
Phillips & Drew	15,216,137	11,542	0	0	0
Piper Jaffray & Hopwood	2,730,901	4,620	27,552,609	0	1,330,000
Piper Jaffray & Hopwood	9,704,134	11,913	0	0	0
Prudential	0	0	18,900,502	0	0
Prudential Securities Inc.	55,513,479	79,471	244,222,910	0	1,071,000,000
Punk Ziege	750,451	1,026	0	0	0
Raymond James & Associates	4,646,884	7,680	2,011,130	0	0
RBC Dominion Securities	384,120	1,320	0	0	0
Realty Securities	0	0	426,379	0	0
Rivkin (H) & Co. Inc.	0	0	6,260,280	15,000	0
Robert W. Baird & Co.	5,281,271	7,746	0	0	0
Robertson Colman & Stephens	3,826,683	7,156	0	0	0
Robinson-Humphrey Co.	8,948,334	15,918	0	0	0
Rochdale Securities Corp.	9,644,501	17,550	0	0	0
Rothschild	345,751	252	0	0	0
Roulston & Company	552,998	2,112	0	0	0
Salomon Brothers	108,272,916	220,112	2,569,658,032	77,500	2,387,680,935
San Paolo Bank	0	0	0	0	41,594,707
Sanwa-BGK	0	0	56,948,407	0	0
Scotia McLeod	2,017,928	8,010	0	0	0
Scott & Stringfellow	3,201,999	4,332	0	0	0
Sears Roebuck Acceptance	0	0	0	0	49,827,917
Security Pacific National Bank	0	0	3,081,744	0	0
SEI Funds Evaluation	59,628,080	81,597	0	0	0
Shearson Argus Research	0	0	7,040,790	0	0
Shearson American Express	546,909	1,312	111,906,191	59,238	0
Shearson Lehman Hutton Int'l.	1,102,114	11,016	0	0	0
Sherwood Securities	1,455,992	0	0	0	0
Smith Barney & Company	50,510,620	50,624	125,544,118	0	0
Smith Mitchell	0	0	4,488,072	0	0
Smith New Court	6,790,902	0	0	0	0
Sogen (French)	1,564,129	1,250	0	0	0
Soundview	5,670,888	10,298	0	0	0
Standard & Poor Securities	110,490,175	180,918	0	0	0
State Street Bank & Trust	261,321,358	0	74,839,541	0	8,514,824,902
Sternburg (M) & Co.	0	0	0	0	9,756,625

COMMISSIONS AND TRADING VOLUME

By Broker for Fiscal Year 1993

Broker	Stock $ Volume	Stock $ Commissions	Bond $ Volume	Bond $ Commissions	Short Term $ Volume
Sutro & Company, Inc.	$ 22,333,561	$ 43,358	$ 0	$ 0	$ 0
T J Raney	0	0	4,269,160	0	0
Theron D Conrad & Co.	0	0	1,730,034	0	0
Thirft Trading	0	0	39,483	0	0
Tucker Anthony Inc.	0	0	13,506,681	0	0
Tucker Anthony & R.L. Day, Inc.	0	0	4,083,125	10,000	0
UBS Securities	0	0	26,911,895	0	0
UBS-DB Corporation	21,157,901	20,446	258,349,353	0	0
UBSSC-UBS	0	0	16,115,926	0	0
Union Bank-Swiss Zurch	19,105,884	40,555	0	0	0
United Danield Sec. Inc.	0	0	5,141,875	0	0
Utendahl	0	0	1,389,888	0	0
Vector Sec.	519,988	588	0	0	0
Volpe Welt	2,210,770	1,153	0	0	0
W. Anthony	0	0	220,580	0	0
Wagner Stott & Co.	5,898,344	7,200	0	0	0
Warburg S.G.	22,215,624	34,634	0	0	0
Wasserstei	223,930	180	0	0	0
Weeden & Company	224,981,390	273,920	0	0	0
Weiss	3,615,519	5,666	0	0	0
Wessels, Arnold & Henderson	5,198,014	5,166	0	0	0
Westpac Bk Corp.	0	0	6,741,531	0	0
Wheaton First Securities, Inc.	2,843,531	3,046	0	0	0
Wilshire Associates	8,097,329	11,153	0	0	0
Woodmere Securities	2,436,794	11,094	0	0	0
Broker Unavailable*	568,494,425	533,677	1,302,613,488	525	25,304,402,126
All Brokers Combined	$ 5,883,012,948	$ 6,141,206	$ 17,966,575,066	$ 787,596	$ 107,710,454,499

* Includes transactions where broker data was incomplete.

** Totals may not add due to rounding.

Both volumes of the 1993 Annual Report were produced using recycled, recyclable paper and a soy-based ink.

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