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☞ Details: Audit Report 04-13, An Evaluation: State of Wisconsin Investment Board

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WISCONSIN STATE LEGISLATURE ...
PUBLIC HEARING - COMMITTEE RECORDS

2005-06

(session year)

Joint

(Assembly, Senate or Joint)

Committee on Audit...

COMMITTEE NOTICES ...

- Committee Reports ... **CR**
- Executive Sessions ... **ES**
- Public Hearings ... **PH**

INFORMATION COLLECTED BY COMMITTEE FOR AND AGAINST PROPOSAL

- Appointments ... **Appt** (w/Record of Comm. Proceedings)
- Clearinghouse Rules ... **CRule** (w/Record of Comm. Proceedings)
- Hearing Records ... bills and resolutions (w/Record of Comm. Proceedings)
  - (**ab** = Assembly Bill) (**ar** = Assembly Resolution) (**ajr** = Assembly Joint Resolution)
  - (**sb** = Senate Bill) (**sr** = Senate Resolution) (**sjr** = Senate Joint Resolution)
- Miscellaneous ... **Misc**

* Contents organized for archiving by: Stefanie Rose (LRB) (September 2012)

State of Wisconsin Investment Board

Investment Goals, Strategies and Performance

March 2005

State of Wisconsin Investment Board

Investment Goals, Strategies and Performance

Forward

Required by s. 25.17 (14m), Wis. Statutes, this report addresses investment goals and strategies and their relationship to SWIB's overriding duty as fiduciaries to earn the best net returns with appropriate risk for the various funds under management.

As specified by the statute, this report discusses: (1) long-term investment goals for the Wisconsin Retirement System Trust Funds; (2) changes in investment strategies since the last report; (3) investment performance and management costs in comparison to peers; (4) risk associated with trust fund investments and the use of derivative investments; and (5) the amounts and types of investments made in Wisconsin. The report also discusses investment strategy, performance and risk for the State Investment Fund, a short-term cash management fund.

In addition, this report incorporates additional information about the recommendations that the Legislative Audit Bureau (LAB) made in its biennial performance audit. As a part of that report issued in November 2004, the LAB noted the increased costs incurred to manage the funds. At the same time, the LAB recognized the statutory limitations that affect SWIB's decisions about how it manages the funds and costs.

Prior to LAB releasing its audit, the Board of Trustees directed staff to conduct an extensive study of how funds are managed, the costs to invest versus the net return on investments, and the effect of statutory limitations on management. The LAB requested that SWIB include in this report comments on the study and its findings, including any recommendations for statutory change. Chapter 3 addresses major topics raised in the LAB audit. It also includes an overview of SWIB's study, its findings and recommendations.

Executive Summary

- After downturns in mid-year, the public markets ended 2004 on a positive note. **Total assets managed by SWIB** increased from $69.1 billion at the end of 2003 to $74.7 billion as of December 31, 2004 – an increase of $5.6 billion. At year-end, SWIB managed $70 billion in the Wisconsin Retirement System (WRS), $3.9 billion in the State Investment Fund (SIF) and $0.8 billion in smaller funds.

- The **Fixed Retirement Fund's** 12.8% investment return for 2004 exceeded the 11.7% return for its composite investment benchmark. This resulted in the WRS (both Fixed and Variable Funds) earning a combined $584 million more than its composite benchmarks. The Fixed Fund also continued to outperform its investment benchmark on a five- and ten-year basis.

- The Fixed Fund's 2004 returns ranked fifth for one-year, first for five-year and ninth for ten-year returns compared to nine other large public pension funds the Legislative Audit Bureau used for comparison purposes in the last two performance audits of SWIB. The Fixed Fund's five-year return ranked first on a risk-adjusted basis when compared to the same funds. The **one-year return for the Fixed Fund** ranked in the top 29% of 49 public pension funds with assets over $1.0 billion and above the median for one-, three-, five- and ten-year periods.[1] (These returns are not reported on a risk-adjusted basis.)

- The **Variable Retirement Fund** returned 12.7% but trailed its composite benchmark, which earned 13.4%. The Fund, which is invested in domestic and international stocks, is ahead of its five- and ten-year benchmarks. Underperformance in domestic equities was primarily responsible for the lower returns.

- **Private Markets had the highest returns of all asset classes**. Real estate returned 21.4% compared to its benchmark of 12.4%. Private equity returned 21.7% compared to the benchmark's 9.8% return. These asset classes have undergone significant strategy changes that are discussed in more detail in the report.

- **Public Equities in total trailed the composite equity benchmark** due primarily to underperformance in the internally managed US large and small cap portfolios. One of the two small cap portfolios that is heavily weighted in technology returned 8.5% for the year but suffered from a general downturn in technology stocks. One of the two large cap portfolios has extensive holdings in a limited number of US companies. Several companies in the portfolio performed poorly in the last quarter of 2004, adversely affecting the portfolio's annual returns. Two were pharmaceutical companies that took profitable drugs off the market.

- Low US interest rates continued to hold down returns for domestic fixed income. Although weaker than in 2003, international fixed income market returns continued to exceed domestic markets. As a result, the global portfolios contributed significantly to **fixed income's return of 7.3% versus its 6.6% benchmark.**

- Because of 1999 Wisconsin Act 11 (the pension benefits improvement law), the phase-out of the **transaction amortization account (TAA)** was completed at the end of 2004. Gains and losses in the Fixed Fund are now smoothed only by the

[1] Trust Universe Comparison Service survey

Market Recognition Account (MRA), which generally recognizes the gains and losses more quickly than the TAA.

- In 2005, the Department of Employee Trust Funds (ETF) will credit 8.5% to Fixed Fund accounts for active employees and 12.0% to accounts of those in the Variable Fund. Retirees will receive a 2.6% dividend on their Fixed Fund annuities, and those in the Variable Fund will receive a 7.0% increase on that portion of their annuities.

- The 1.3% gain for the **State Investment Fund (SIF)** trailed a 1.4% return for its benchmark. This was due to the positioning of the portfolio in a rising interest rate environment. SIF, however, continued to exceed its benchmark for the five- and ten-year periods. SIF's return for 2004 ranked 1st out of 225 government funds in the iMoneyNet Government Fund Index and 33rd out of 1,276 money market funds in the iMoneyNet All Taxable Money Market Index. The final payment for derivative losses the SIF incurred in 1995 was made on March 16, 2005.

- During fiscal year 2004, SWIB made over $684.3 million in **new investments in Wisconsin companies**. Having invested over $4 billion in the last five years, SWIB's new investments in Wisconsin have already met the agency's five-year goal to invest between $2.2 billion and $4.0 billion in Wisconsin companies by the end of 2005. Wisconsin investments are subject to the same due diligence and fiduciary responsibility that apply to all other investments. Through its contracts with four venture capital funds, SWIB's **commitment to venture capital**, primarily in Wisconsin, continued with over $34 million put to work in new companies by the end of 2004.

- SWIB's **total cost to manage the Fixed Fund** was reduced from 28 cents for each $100 managed in 2003 to 25 cents in 2004. The 2003 costs were considered normal for a fund of its size and asset mix, according to an independent survey.[2] (The study comparing SWIB's 2004 costs to other funds has not been completed.)

- To review and improve governance policies and procedures, **SWIB undertook a number of strategic initiatives**. These included a review of the use of soft dollars, board and corporate governance, asset allocation, succession planning and a comprehensive study of internal and external investment management and associated costs. This project included further review and recommendations regarding a number of topics raised in the Legislative Audit Bureau's November 2004 management audit of SWIB. The study and its conclusions are discussed in detail beginning on page 22.

- This annual report includes expanded information regarding SWIB's use of internal and external management and their costs. We plan to continue to provide such information in future reports.

- SWIB implemented several **strategic changes in 2004** to enhance the long-term investment performance of the trust funds and improve internal operations. These changes resulted in further diversification, more emphasis on enhanced/quantitative funds, and taking advantage of market opportunities. Building on changes made in 2004, the Board of Trustees adopted additional **strategic changes for 2005**. A description of the strategic changes for 2004 and 2005 begins on page 12.

[2] Cost Effectiveness Measurement, Inc.

Chapter 1
A Summary of SWIB

The **State of Wisconsin Investment Board (SWIB) was created in 1951** with two primary purposes: (1) invest the state's operating funds in short-term investments and (2) invest pension funds for public employees on a long-term basis. Total assets under management in 1951 were $347 million. Approximately half belonged to public employees, and the state's operating funds comprised the balance. Assets have grown significantly over the years.

SWIB is **governed by a nine member Board of Trustees** – six are appointed by the Governor; two are appointed to represent public employees; and one is the Secretary of the Department of Administration or his or her designee. The Board appoints the executive director and internal audit director and approves policies, benchmarks and investment guidelines. The executive director and staff carry out the Board's directives and make the day-to-day investment decisions.

Six of the nine Trustees were new to the position within the last two years. To meet their fiduciary responsibility to all fund participants, the Board extensively reviewed SWIB's governance and operations in an effort to ensure that SWIB is following best management practices and is as transparent as possible in its business activities.

SWIB is **responsible for managing the assets of the Wisconsin Retirement System (WRS)**, which is comprised of the Fixed Trust Fund and the Variable Trust Fund; the State Investment Fund (SIF); and several smaller trust funds. SWIB's mission is to ensure these funds are prudently managed. This is accomplished by earning best net returns consistent with the purpose and risk profile of each trust fund.

Assets under management reached an all time high of $74.7 billion on December 31, 2004. Primarily as a result of strong returns in international and private market investments, total assets increased $5.6 billion over calendar year 2003. ***Appendix A*** illustrates annual assets under management since 1995.

Assets Under Management
December 31, 2004

Fund	$ in Millions	% of Total
Wisconsin Retirement System (WRS)	**$70,006**	**94%**
Fixed Trust Fund	*63,759*	*85%*
Variable Trust Fund	*6,248*	*8%*
State Investment Fund (SIF)*	**3,889**	**5%**
Other Funds	**829**	**1%**
State Life Insurance Fund	76	
Local Property Insurance Fund	39	
Historical Society Endowment Fund	11	
Injured Patients & Families Compensation Fund	692	
Tuition Trust Fund (EdVest)	11	
TOTAL	**$74,725**	**100%**

Values and percentages may not add due to rounding.
* Excludes WRS and Other Funds cash balances.

Chapter 2
Wisconsin Retirement System (WRS)
An Overview

The **WRS** is the largest pool of assets that SWIB manages and is the **10th largest US public pension fund and 23rd largest public or private fund worldwide**. Nearly all public employees in the state, with the exception of Milwaukee City and County employees, are WRS members.

The WRS is comprised of two funds – the **Fixed Trust Fund** and the **Variable Trust Fund**. With assets of nearly $64 billion, the Fixed Fund is the largest trust under SWIB's management. It comprises 85% of all SWIB assets and 91% of all WRS assets. All 520,400 WRS participants have at least half, if not all, of their pension accounts invested in this Fund.

The **Fixed Fund invests in diversified asset classes**, including stocks, bonds, business loans, real estate and other holdings. Within each asset class, investments are further diversified by portfolio. Diversification helps to stabilize the effects of market changes.

The remaining WRS assets are in the **Variable Fund**, which by statute **is an equity fund**. As of December 31, 2004, those assets were valued at $6.2 billion and comprised approximately 9% of all WRS assets. At year-end, nearly 130,100 WRS participants, or 21%, were in the Variable Fund. This number grew substantially following enactment of 1999 Act 11, which reopened this fund.

Prior to 1980, employees could choose to invest half their pension fund contributions in the Variable Fund. Participants who chose the Variable Fund option accepted a higher level of risk with the potential of greater long-term returns.

The **Legislature closed the Variable Fund to new entrants in 1980**, partly because of negative stock market returns that occurred in the 1970s. Participants who were in the Variable Fund prior to it being closed were allowed to remain in the fund or to opt out and transfer their funds to the Fixed Fund at the end of any subsequent calendar year. Until enactment of 1999 Act 11, the Variable Fund remained closed to new participants. After the fund was reopened, active employees may elect to direct 50% of their future WRS contributions to the Variable Fund.

Stock Investments Increase

Until the mid-1980s, only about 30% of Fixed Fund assets were invested in stocks, making it considerably less volatile than the Variable Fund. That portion grew significantly in the 1980s, and for more than a decade **nearly 60% of the Fixed Fund has been invested in stocks**. SWIB and most other public pension funds increased allocations to stocks as part of a diversified investment program to increase long-term investment returns.

The Fixed Fund has a mechanism – called the **Market Recognition Account (MRA)** – that **smoothes annual investment gains and losses**. The MRA helps to moderate significant differences from one year to the next in annuity dividends paid to retirees and contributions paid by employers and active employees.

Stocks in the Variable Fund are the same as those in the Fixed Fund. Like the Fixed

Fund, these stock investments are well diversified. Unlike the Fixed Fund, the **Variable Fund does not** invest in assets other than stocks and does not **have a smoothing mechanism**. Instead, **Variable Fund gains or losses are recognized for the year in which they occur**. This results in greater volatility in investment earnings applied to the accounts of active and inactive employees and dividends that retirees receive.

Goals for the Fixed and Variable Funds

Investment goals differ for the Fixed and Variable Funds. The basic investment objective for the Fixed Fund is to earn an optimum net rate of return while taking an acceptable level of risk. The higher the rate of return, the less that employers and employees must contribute to the Fund to ensure promised benefits are paid.

In addition, a **goal for both retirement funds is to exceed a targeted investment rate of return or "benchmark"** established by SWIB's Board of Trustees with the assistance of a benchmark consultant. The **benchmark for the Fixed Fund is a weighted blend of indices that measure the performance of the broader markets** for stocks, bonds and other assets.

The **benchmark for the Variable Fund is a weighted blend of the Russell 3000 Broad US Equity Index and the Morgan Stanley Capital International Index of Non-US Stock Markets**. This reflects Variable Fund investments in both domestic and international stocks.

Each individual portfolio has a separate benchmark to which its performance is compared. To the extent possible, a portfolio benchmark is an index that represents the class, or range, of investments against which the manager's performance is measured. The types of investments a portfolio manager may consider are spelled out in the portfolio's investment guidelines.

Whenever possible, **industry recognized indices are used**, such as the Russell 3000 Index or the Lehman Government/Credit Bond Index. When indices are not readily available (for example, some private market portfolios), the chosen benchmark reflects a reasonable facsimile of the assets in which the portfolio manager may invest.

Investment results are also compared to those of other managed funds and portfolios, adjusted for risk taken by each fund if that information is available. While peer group comparisons can be useful, peer group rankings are affected by asset allocations, liability projections, risk tolerance and resources – all of which vary from fund to fund.

Annually, the **WRS actuary reviews SWIB's asset allocations and expected rate of return** and incorporates those projections into his analysis when recommending contributions rates for the following year.

Although investment earnings play a significant role in funding the WRS, promised benefits would be paid by increasing contributions to the system if SWIB's investments underperformed expectations for several years.

When making recommendations for future contribution rates, the WRS actuary previously assumed SWIB would earn 8% annually in the Fixed Fund. Beginning in 2004, **the actuary lowered the assumed rate to 7.8%**, which is estimated to be

3.7% more than the assumed 4.1% annual wage growth.

The WRS actuary does not assume a projected rate of return for the Variable Fund. Instead, both SWIB and the actuary expect that fund to meet or exceed stock market indices.

Effect of Investment Returns on Benefits and Contributions

All **WRS stakeholders benefit if investment returns exceed the basic investment objectives**. First, higher returns reduce the contributions public employers (taxpayers) and employees must pay into the WRS to pay future benefits. Secondly, higher returns may increase a participant's initial annuity and improve benefit payments after retirement through the annual dividend that annuitants may receive.

As a mature retirement system, **investment returns now fund 80-85% of retirement benefits that WRS members receive**. Exceptional investment returns enabled the Employee Trust Funds (ETF) Board to reduce contribution rates each year from 1996 through 2001.

In 2002, Gabriel, Roeder, Smith & Company – the actuary for the WRS – updated its 50-year financial projection for the pension fund. They stated then, and reaffirmed in 2003, that **the WRS is well funded.** However, primarily because of the effect of weak markets and increased liabilities resulting from benefit improvements passed in 1999 Act 11, the actuary recommended and the ETF Board approved gradual increases for most employee categories in the early 2000's before a reduction again for 2005.

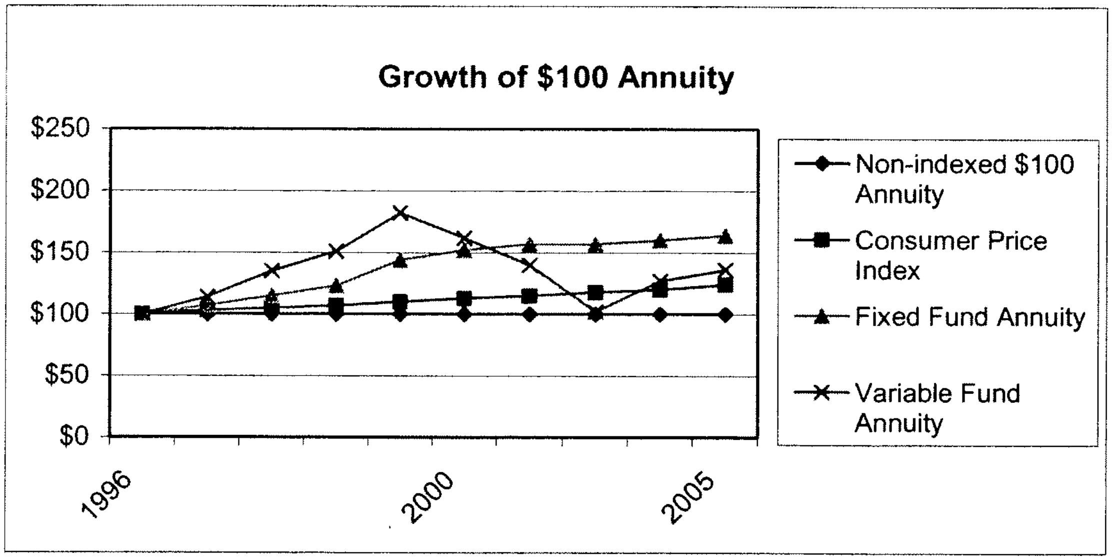
Despite those increases, the **current rate for general employees** (the largest class) **is lower than the rates assessed from 1983 through 2000**. Because of investment earnings in the past two years, it is anticipated that contribution rates will remain relatively stable for calendar year 2006.

Act 11 changed the way Fixed Fund investment gains and losses are applied to the accounts of WRS participants. This law included an immediate recognition of $4 billion in accumulated gains from the Fund's previous -- transaction amortization account (TAA) -- and a phase-out of the TAA's balance (slightly less than $10 billion) in equal amounts over five years beginning in 2000. By the end of 2004, the **TAA balance was fully amortized**.

Act 11 also created a new smoothing device for the Fixed Fund, known as the market recognition account (MRA). The MRA applies gains and losses to the accounts of WRS participants over a number of years. Following creation of the MRA, there were three consecutive years of negative returns from 2000-2002. Those losses have adversely affected benefits and will continue to do so until 2007.

Fixed Fund benefit payments to retirees increased every year until 2003, primarily due to strong investment returns and, to a lesser extent, the provisions in Act 11 and prior benefit improvement bills. However, because of three years of lower than assumed long-term returns, **retirees did not receive a Fixed Fund dividend in 2003 -- first time in the history of the WRS**. They would have received a reduction were it not for the positive value that came from the continued TAA amortization.

Despite exceptional investment returns in 2003, **retirees faced no Fixed Fund dividend in 2004** as three years of market losses worked their way through the system. A change in law permitted a dividend of 1.4% to be paid in 2004. The **Legislature amended the law to permit ETF to distribute a Fixed Fund dividend that is 0.5% or greater** or to reduce previously earned dividends if the amount is -0.5% or more. Previously, a dividend could be paid only if a 2% dividend could be paid on all annuities. The Governor signed the bill in time for ETF to pay a 1.4% dividend to retirees beginning with May 2004 payments.



Liquidity to Meet Cash Needs

Net cash flow into the system (primarily contributions + investment income – benefit payments) **has declined in recent years and is now slightly negative.** The reduced cash flow is expected and, in fact, is on target with long-term actuarial projections for a mature retirement system, such as the WRS.

To meet cash flow needs, SWIB monitors the month-by-month liquidity needs for both the Fixed and Variable Funds and previously withdrew sufficient assets as needed each month pro rata in accordance with strategic allocation target weights. In mid-2004, the **Board established three liquidity index portfolios to facilitate cash outflows.** These funds are managed by Barclays Global Investors (BGI).

Assets are allocated to the three portfolios on a pro rata basis according to the targeted allocations for domestic and international equities and fixed income. The liquidity portfolios provide a ready means to invest temporary excess cash and also serve as a source of funds that can be withdrawn as needed to pay benefits. The portfolios are replenished as needed. As a result, SWIB's public equity and fixed income divisions do not have to sell investments monthly to raise cash for needed payments.

Allocating WRS Assets

SWIB employs several tools to achieve investment goals. Perhaps the **most important step** the Board takes is to **determine how the funds will be allocated** among the broad asset classes (stocks, bonds, real estate and other assets).

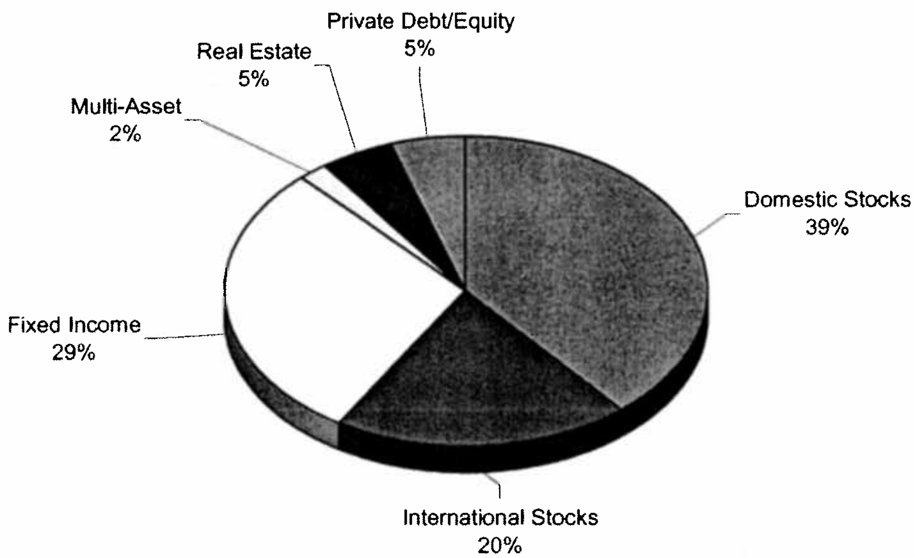
In keeping with the extended time horizon of the **Fixed Fund's** obligations, the **investment strategy** for this fund **has a long-term focus**. With the assistance of a national consulting firm, SWIB sets asset allocation targets. Before setting the targets, it performs modeling exercises that assist in projecting returns for various asset mixes and selecting the mix of assets to provide the optimum balance of risk and return over the next several market cycles.

Prior to 2004, SWIB annually conducted a formal asset allocation exercise that resulted in policy and funding recommendations. **Beginning in 2004**, the Board substituted its annual comprehensive asset allocation review for the Fixed Trust Fund with a **comprehensive review every other year and an off-year planning format** to consider necessary adjustments and new initiatives in year two of the cycle. The comprehensive review will continue to include an asset/liability modeling process designed to: (1) determine a suitable target allocation for each asset class; (2) contemplate a long-term time horizon (5-7 years); and (3) project the long-term impact of poor, normal and above average market results on the Fixed Trust Fund.

During the off year, the Board will fine-tune the asset allocations and make structural or other interim changes as justified. This process reflects that long-term assumptions regarding liabilities and investment markets do not change significantly enough each year to warrant a comprehensive annual asset allocation review.

Because SWIB had conducted a comprehensive review for 2004 allocations, it conducted an "off-year" review for **2005 allocations** and adopted the following **asset targets for the Fixed Trust Fund**.

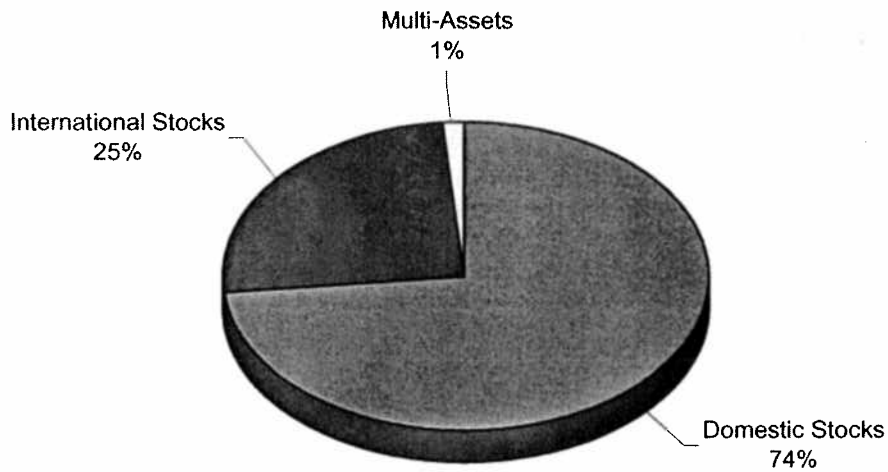
Fixed Fund Allocation Targets 2005



Based on assumptions used to set allocation targets, the **Fixed Fund's annual average expected long-term return is approximately 8.1%** (5.6% real return). However, in one out of three years, the return is expected to exceed 20.4% or fall below -4.1%.

During the off-year review, the **Board slightly changed Variable Trust Fund allocation targets** by shifting 1% from domestic equities to an equity multi-asset class liquidity portfolio. The following chart illustrates the 2005 targets.

Variable Fund Allocation Targets 2005



Based on assumptions used in the review, **the Variable Fund has an annual average return expectation of approximately 8.8%**. However, in one out of three years, the return is expected to exceed 24.8% or fall below -7.2%.

Appendix B explains the formal process that SWIB goes through when conducting a comprehensive asset allocation review.

Once the Board of Trustees approves how assets will be allocated, **professional investment staff make the daily decisions** about which individual investments to buy or sell. They make these decisions within the limits of established guidelines for each portfolio.

To adhere to the annual strategic asset allocation targets, the **Board employs a re-balancing discipline**. When market activities cause an asset class to exceed the upper limit of its targeted range, some of its investments are sold, and the cash is reinvested in an asset class that is lower than its target. This practice keeps the Fixed and Variable Funds within their policy targets.

Rebalancing normally occurs only for the public market investments; e.g., stocks and bonds. Because of a rapid rebound in the stock markets during 2003, SWIB rebalanced at the beginning of 2004, moving assets from equities to fixed income to stay within the asset allocation targets.

Appendix C shows strategic targets for 2004 and 2005, plus the range for 2005, for the Fixed and Variable Funds. The charts also show how the assets were actually allocated at the end of 2003 and 2004.

Managing the Funds

SWIB uses both internal and external portfolio managers who execute active, enhanced/quantitative, or passive strategies to manage WRS assets. The mix of active, enhanced/quantitative and passive management varies by asset class and depends upon market efficiency and the availability of investment management options. SWIB uses various management approaches and styles to gain an optimum net return. ***Appendix D*** shows how the funds were managed by asset class at the end of 2003 and 2004. The **following describes the three basic types of management used.**

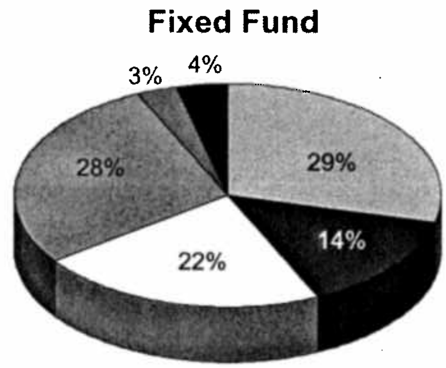
- **Active management** means the portfolio manager makes decisions, within the guidelines established by the Board of Trustees, about which investments to buy or sell.

- **Passive management** seeks to replicate the return of a particular market index as closely as possible by purchasing the same securities, in the same proportions, as those comprising the market index, such as the Russell 3000. Although the objective of a passive commingled index fund is to track the index returns closely, some variation in returns may occur. For example, some variations from the benchmark are expected in the more illiquid markets, which include international and emerging markets. More transactions in and out of an index fund may also result in variations from the benchmark.

- **Enhanced or quantitative management** is a specialized form of active management that generally tracks a specific index, such as the Russell 3000 Index. These funds differ from other forms of active management as they use proprietary computer models to evaluate particular stocks. Substantial amounts of data pertaining to individual companies, market segments and economic trends are typically gathered and analyzed. In this process, much of the same data is analyzed that a fundamental analyst would use, including corporate balance sheet and income statement data. The fund will deviate from the index by over- or under-weighting a sector or specific companies within a sector. Risk is typically controlled within the model in terms of how much the portfolio will deviate from the benchmark.

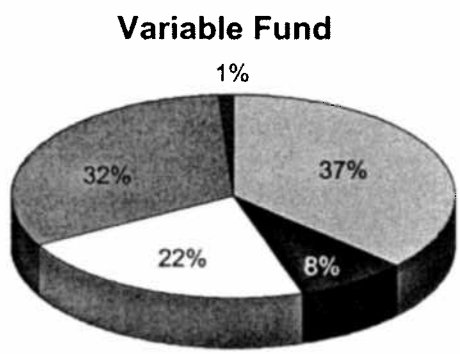
How Fixed Fund Assets Were Managed at the End of 2004

- Internal Actively Managed by SWIB Staff 29%
- External Dedicated Active Accounts 14%
- External Enhanced Commingled Funds 22%
- External Passive Funds 28%
- External Actively Managed Commingled Accounts 3%
- External Limited Partnerships 4%



How Variable Fund Assets Were Managed at the End of 2004

- Internal Actively Managed by SWIB Staff 37%
- External Dedicated Active Accounts 8%
- External Enhanced Commingled Funds 22%
- External Passive Funds 32%
- External Actively Managed Commingled Accounts 1%



Setting Investment Strategies

Following the modeling exercises associated with the long-term liability projections, the **Board makes any necessary changes to how the assets are allocated. In addition, SWIB makes strategic implementation changes for the coming year**. Depending on existing opportunities or how volatile the markets are, SWIB may also make strategic changes during the year.

Within the confines of investment policies, guidelines and strategies, chief investment officers and portfolio managers adopt strategies for each asset class and individual portfolio. Chief investment officers monitor the specific investment strategies used by each portfolio manager within their respective groups

SWIB's **2004 comprehensive asset allocation review concluded that the outlook for foreign and emerging market returns in particular is more favorable than that for domestic public markets.** Taking a long-term outlook, analysis of the public markets also concluded that economic growth would continue, the dollar would fall relative to other currencies, and interest rates would increase in 2004.

With that in mind, the Board and staff agreed to the following **strategies for 2004**:

Strategic Changes Affecting Equities

- **Increase the strategic target for international equities** and decrease the strategic target for domestic equities by 1%. During the year, SWIB added one enhanced/quantitative international fund and four active external international managers. The Board took these actions to take advantage of expanding international markets. Two active international managers oversee funds that concentrate on small companies, a rapidly growing area in developed countries. **Returns earned by the enhanced/quantitative international fund and three of the four active managers all exceeded the benchmarks in 2004.**

- **Make greater use of enhanced/quantitative and index funds** in an effort to diversify assets and capture added returns. In addition to initiating an enhanced/quantitative fund, the Chief Investment Officer – Equities shifted more assets to enhanced/quantitative from other active management. At year-end, total equities were divided approximately one-third to active management, one-third to index funds and one-third to enhanced/quantitative funds. **With the exception of GMO Quantitative Large Cap portfolio, all enhanced/quantitative and index funds met or exceeded the benchmarks in 2004.**

- **Increase assets invested in emerging equity markets** to a market-neutral position over time. This action allowed equities to take advantage of projected returns in these markets. SWIB reduced the underweight in this asset class during 2004 and had invested $816 million of the international equities allocation in emerging markets by the close of 2004.

Appendix E summarizes the holdings and returns for all equity portfolios. Also, refer to ***Appendix G*** for more detailed information about each portfolio and its performance.

Effect of Markets and Strategies on Public Equities 2004 Returns

Public equities comprise 59% of the Fixed Fund and nearly the entire Variable Fund. Consequently, how the stock portfolios are invested and the returns they earn have a significant effect on the WRS.

Public equities are further divided into domestic (or US) equities and international equities. The international investments can be either in developed or emerging market countries. Investment opportunities in the international market have grown significantly in the past decade and now make up a substantial portion of the world market investment opportunities available to SWIB.

Each portfolio manager who actively manages a portfolio has the flexibility to adopt a particular style within the manager's capitalization sector and to weight various industry sectors as dictated by the manager's market outlook. Up to 10% of each domestic portfolio may be invested in equity securities of foreign companies. As noted in ***Appendix G***, there is some overlap in the targeted market capitalization for the portfolios.

Domestic equities are stock investments in large, mid-size and small capitalization US companies. SWIB staff manage a number of domestic equity active strategies and oversee externally managed index and enhanced/ quantitative portfolios. Following a three-year stretch of negative markets, domestic equity markets rebounded significantly in 2003 and earned solid returns in 2004. **Despite a 10.7% return in 2004, SWIB's US equity investments trailed the 11.9% return for the Russell 3000,** a broad indicator of the US stock market and the benchmark for SWIB's US equities.

The 2004 markets were affected by a number of national and international events including the war in Iraq, the presidential election, oil prices, interest rates and the economy. The **markets had low or negative returns for much of the year**. However, because of a rally in the fourth quarter, the markets ended on a positive note.

All internal domestic equity portfolios, with the exception of the small cap diversified and the healthcare sector portfolios, trailed their benchmarks for the year.

SWIB's internal large cap portfolios were affected when the projected earnings for some companies in the portfolios dropped significantly in the fourth quarter. In particular, the **large cap portfolio** saw a steep fourth quarter fall. This portfolio has concentrated holdings in about 50 S&P 500 companies. Returns were adversely affected when Merck and Pfizer took major drugs off the market because of significant side effects associated with the drugs' use.

Several other companies in this portfolio announced major earnings disappointments, which depressed their stock values, reducing the portfolio's returns. To a lesser degree, the **large cap diversified portfolio** was also affected by lower stock prices for the same companies.

The **small cap portfolio** is heavily over-weighted in technology and healthcare stocks. Although this portfolio had done exceedingly well in 2003, technology companies underperformed in 2004, which adversely affected the portfolio. The portfolio has fairly large positions in several companies and also tends to invest in the smallest of the small companies, which can be more volatile. This portfolio **exceeded the benchmark by 42.6% in 2003, but, with a return of 8.3%, trailed the one-year benchmark by almost 10% in 2004**. It remains ahead of its five- and ten-year benchmarks. In recent years, SWIB downsized this portfolio and created a second small cap portfolio to reduce risk.

The **mid cap portfolio** trailed the benchmark in 2004. The portfolio had been over-weighted in energy, industrials and materials and under-weighted in all other sectors. Although the over-weighted sectors performed quite well, opportunities in some under-weighted sectors that had good earnings were missed.

In general, **international developed equities' markets** outperformed domestic markets, due particularly to the weak US dollar. To take advantage of expanding international equities markets and the expertise of various managers, SWIB opened four external, actively managed portfolios and one enhanced/quantitative portfolio during the year. The commitment to this asset class paid off during 2004 as the **combined international developed stock portfolios beat their benchmark and returned 21.7%** compared to the 20.4% for the Morgan Stanley Capital International (MSCI) World Index ex US that represents stocks in 22 developed foreign markets.

Emerging market equities are stock investments made in developing countries. International developed equity market portfolio managers can make emerging market investments on an opportunistic basis up to 15% of a portfolio. Because of growing opportunities in developing countries, the Board approved three externally managed **emerging market portfolios** in 2003. These portfolios also **performed well, earning 28.2% versus 26.0% for its benchmark, the MSCI Emerging Markets Free Index.**

Markets are expected by many observers to be positive for 2005 but with lower returns than in 2004. US large cap stocks are projected to outperform small cap stocks. International investments are again expected to outperform domestic. Markets will also continue to be affected by US and international political and economic events. With these factors in mind, the portfolio managers are making some adjustments to the construction of their portfolios for 2005.

For 2005, the Board made the following strategy changes for equities:

- Set the parameter to **rebalance public equities around the entire asset class** rather than applying it separately to US equities and international equities. Under the new guidelines, the Chief Investment Officer-Equities has authority to consider within specific limits both domestic and international allocations when a rebalance is necessary, rather than rebalancing the domestic and international allocations separately. The CIO of Fixed Income already had this authority. It gives both CIOs more flexibility to move funds within their own areas based on the attractiveness of domestic versus international markets.

- **Established a multi-asset class in the Variable Fund** by decreasing the allotment to domestic equities by 1%. (See ***Appendix C***) This allocation consists of a set of equity index funds to facilitate Variable Fund cash flows.

- **Changed the soft risk parameters** that are intended to monitor various types of risk in a portfolio. The new parameters for public equities are generally more conservative than the previous ones and are intended to enhance diversification for some portfolios.

Strategic Changes Affecting Fixed Income

Fixed income investments include all government and corporate bonds in which SWIB is invested. The Board made the following strategic changes for fixed income for 2004:

- **Approved an allocation to invest in Treasury Inflation-Protected Securities (TIPS)**. In addition to offering a hedge against inflation, TIPS are an important strategic and tactical complement to traditional fixed income instruments.

- **Opened three high yield-emerging market debt portfolios**. These portfolios, actively managed by external managers, add diversification to the asset mix and the potential for higher returns relative to domestic fixed income.

Effect of Markets and Strategies on Fixed Income's 2004 Performance

At the beginning of 2004, the Chief Investment Officer – Fixed Income projected: (a) the US would experience good economic growth; (b) inflation would increase; (c) the Federal Reserve would start increasing interest rates; (d) bond yields would rise; (e) the dollar would continue to weaken against other currencies; and (f) global, high yield and emerging market debt would outperform US markets.

As a result of the projections and strategy changes, SWIB's fixed income increased its commitment to international markets, maintained an overweight in corporate versus government bonds, and invested in TIPS to hedge against expected inflation. In aggregate, fixed income investments returned 7.3% in 2004 compared to the benchmark return of 6.6%.

The **4.4% aggregate return for SWIB's domestic fixed income holdings exceeded a 4.2% return for the benchmark.** Tactical moves made during the year to reallocate assets from government to corporate bonds, make greater use of enhanced and index funds, continue high yield and emerging market strategies, and invest in TIPS contributed to positive returns.

Although weaker than 2003, **international bond markets continued stronger than US markets**. SWIB's global bond portfolios in developed countries returned 10.8% as compared to 10.3% for the benchmark. SWIB's decision to open the high yield-emerging market debt portfolios paid off as they returned 12.3% vs. 11.4% for the benchmark. All global bond portfolios either met or exceeded their benchmarks.

TIPS were attractive investments in early 2004 as investors anticipated a rise in inflationary expectations. SWIB entered the market somewhat late and, therefore, was not able to capitalize on the early positive returns.

For 2005, the Head of Asset Class – Fixed Income projects that: (a) economic growth will continue; (b) inflation will increase somewhat; (c) the Federal Reserve will continue to increase the fed funds rate to a neutral position; (d) bond yields will move higher; (e) TIPS will be a good hedge against inflation in the long run; and (f) the dollar will be weak relative to other currencies. As a result, the Board and staff have made the following strategy changes for 2005 affecting fixed income:

- Decreased the allocation to fixed income by 2%. One percent was allocated to the multi-asset class, and 1% was transferred to real estate.

- Took profits and reduced fixed income's overweight exposure to the global markets from 8% to 4%. This resulted in moving assets from global markets to domestic markets to bring the global portfolios more in line with the target allocations.

- Increased the TIPS allocation to market neutral from an underweight position.

Appendix F summarizes the holdings and returns for all fixed income portfolios.

Market and Strategic Changes Affecting Private Markets

During the fall of 2003, the Board combined real estate, private equity, and Wisconsin debt and venture capital portfolios into the Private Markets Group under the direction of a chief investment officer. Because these investments all require a similar type of due diligence and oversight, the Board took this move to better utilize internal staff and resources.

McKinsey and Company, a well-known consulting firm, conducted a study of these asset classes in 2001 and made a number of recommendations that primarily dealt with the private equity investments. The Board had implemented those recommendations, which included combining several private equity portfolios and several strategic changes, prior to creating the Private Markets Group.

Private equity includes investments in leveraged buyouts, venture capital and private offerings. The investments carry greater risk but offer potential for a higher rate of return. After creating the Private Markets Group in 2003, the Board modified private equity investment guidelines to place more emphasis on fund investments and restricted direct investments.

After merging the various portfolios and asset classes into the **Private Markets Group**, the Board took a number of actions and made **strategic changes for 2004** that are described below.

- **Restructured private equities to increase its focus on limited partnerships and to make larger commitments to fewer managers**, while still maintaining adequate portfolio diversification. Prior to 2004, SWIB had made many direct private equity investments. As a part of the restructuring and revised guidelines following the 2001 McKinsey study, SWIB began to move away from individual investments to more limited partnerships. When setting strategies and allocations for 2004, the Board agreed that private equity investments are a valuable source of added return and diversification. But the Board also agreed that SWIB does not have sufficient internal resources to research and manage direct private equity investments.

- **Divided the management of real estate investments between two internal portfolio managers** – one to be responsible for pooled funds and mortgages, and the other for separate accounts and real estate investment trusts (REITs). The two managers share supervision of the real estate legacy portfolio, which is a large portfolio consisting of previously held investments that did not necessarily fit the strategies of the two new portfolios.

- **Approved contracting with one or more external REIT managers** and committed to invest up to $100 million. REITS are diversified real estate equity funds that are traded on the public markets. Investing in REITs will give SWIB a broader, but more liquid, exposure to the real estate equity market. They are also an effective way to help maintain targeted real estate exposure and gain the return and diversification benefits of real estate. Staff are currently evaluating various REIT strategies.

Both real estate and private equities performed exceedingly well in 2004, outperforming their benchmarks by 9.0% and 11.9%, respectively.

Building on the changes made in 2004, the Board has adopted the following **strategies and related actions for 2005**:

- **Retained Hamilton Lane as SWIB's private equity consultant**. Hamilton Lane will review potential private equity investments and make recommendations to SWIB.

- **Lowered the allocation target from 6% to 5% for private equity on an interim basis.** This action was taken because there may not be sufficient high quality investment opportunities available to meet its previous $800 million per year target over the next few years.

- **Gave greater authority to the CIO and portfolio managers to make larger investments with a fund manager without obtaining Board approval.** This will allow the portfolio managers to take advantage of time-limited opportunities in very competitive markets within Investment Guidelines approved by the Board.

Fixed Fund Performance

Fixed Retirement Trust Fund Performance
Annualized Returns for Periods Ending December 31, 2004

	One Year	Five Years	Ten Years
Fixed Fund Return	**12.8%**	**4.4%**	**10.5%**
Investment Benchmark	11.7	3.6	10.0

- The Fixed Fund exceeded its investment benchmark on a total return basis for the one-, five- and ten-year periods.

- For the last 14 years, Fixed Fund returns exceeded the rolling five-year investment benchmark 89% of the time at the end of the fiscal and calendar years. The Fund exceeded its ten-year investment benchmark 96% of the time during the same time period.

- On a risk-adjusted basis, the Fixed Fund return exceeded its five-year benchmark when adjusted by the amount of fluctuation in returns (volatility). Less volatility helps to stabilize employer contributions to the WRS and benefits paid to retirees.

- The following table compares Fixed Fund returns to nine other public pension funds for the periods that ended on December 31, 2004. The Fixed Fund's one-year return ranked fifth, five-year return ranked first for the second year in a row, and the ten-year ranked ninth. The comparisons are made to the same peer group selected by the Legislative Audit Bureau for its last two performance audits of SWIB. For the ten-year ranking, SWIB was within 5 basis points or 0.05% of being ranked sixth. These comparisons with other funds provide only a partial picture of relative performance, as they do not take into account asset allocation, risk, liabilities and other factors that vary from fund to fund.

	12/31/04 Gross Return					
Fund	**1 Year**	*Rank*	**5 Year**	*Rank*	**10 Year**	*Rank*
SWIB (Fixed Trust Fund)	12.8%	5	4.4%	[illegible]	[illegible]	[illegible]
New Jersey Division of Inv.	10.3	*10*	0.7	*10*	10.5	*7*
Virginia*	13.7	*2*	3.7	*3*	11.1	*1*
Florida Retirement System	12.3	*8*	2.5	*8*	10.9	*2*
New York State Teachers*	12.0	*9*	2.5	*7*	10.9	*3*
Minnesota Combined *	12.5	*7*	2.3	*9*	10.4	*10*
CalPERS	13.5	*3*	3.3	*5*	10.5	*6*
Pennsylvania Public Schools	15.1	*1*	4.0	*2*	10.9	*4*
Texas Teachers	12.7	*6*	2.9	*6*	10.7	*5*
Washington State Inv Board*	13.2	*4*	3.6	*4*	10.5	*7*

*Returns for Washington, Virginia, New York and Minnesota are net of fees. Gross returns are not available.

- To measure risk, ***Appendix H*** compares these five-year returns adjusted for volatility. On this risk-adjusted basis, the Fixed Fund ranked first in the peer group for the five-year period ended December 31, 2004.

- According to a study measuring management costs of 236 pension funds, SWIB's total cost of 28 basis points or cents per $100 to manage the Fixed Fund in 2003 was normal for a fund of this size and asset mix[3]. Costs to manage the Fixed Fund for 2004 dropped to 25 cents per $100.

[3] Cost Effectiveness Measurement, Inc. data

Variable Fund Performance

Like the Fixed Fund, the Variable Fund has a long-term investment strategy. The following table compares the Fund's performance to its benchmark for the periods ended December 31, 2004.

Variable Retirement Trust Fund Performance
Annualized Returns for Periods Ending December 31, 2004

	One Year	Five Years	Ten Years
Variable Fund Return	**12.7%**	**-0.1%**	**10.6%**
Investment Benchmark	13.4	-0.9	10.0

- Variable Fund returns trailed the Fixed Fund performance for the one- and five-year periods but exceeded it for the ten-year period. The five- and ten-year periods reflect the three years of negative stock markets from 2000-2002.
- When adjusted for volatility, the Fund also exceeded its investment benchmark over the five- and ten-year periods.

Managing Risk

Investment return is only one factor to consider when evaluating the success of an investment program. An important part of analyzing fund performance is reviewing the level of risk incurred in earning those returns. Industry standards and practices continue to evolve, and SWIB strives to adapt its risk measurement activities accordingly. SWIB concentrates on the following areas to measure the Fixed Fund's investment risk:

1. **Funding Retirement System Liabilities.** The most basic measure of risk for the Fixed Fund concerns the Fund's liabilities to pay benefits to WRS participants. As previously discussed, SWIB reviews and models ways to allocate Fixed Fund assets using different economic assumptions. The WRS actuary has stated that the WRS is well positioned to meet its current and future obligations. Work performed by SWIB's asset allocation consultant agreed with the actuary's conclusion. The consultant opined that the conservative method used to measure Fixed Fund assets versus liabilities contributes to the relatively well-funded status of the WRS.

2. **Volatility.** Minimizing year-to-year fluctuation in Fixed Fund returns helps to stabilize required contributions into the WRS. For the period ending December 31, 2004, the returns for the Fixed and Variable Funds, when adjusted for volatility, exceeded their benchmarks over the five- and ten- year periods.

3. **Risk Elements.** On a quarterly basis, SWIB reviews the Funds' level of exposure to the following types of risk:

   - ***Interest Rates***: An estimated 77% of WRS assets have moderate to low interest rate sensitivity, the same percentage at the end of 2003. Most sensitivity to interest rates comes from longer duration bonds and exposure to financial and utility stocks. Domestic equities portfolios in the Fixed Fund are under-weighted in these sectors. This tends to dampen overall interest rate sensitivity for the total Fixed Fund. The Variable Fund has less sensitivity to interest rate changes than the Fixed Fund because the Variable Fund has no fixed income exposure.

- ***Currency***: Foreign currency exposure in the Fixed Fund occurs primarily in the international holdings and, to a lesser extent, from private markets and domestic equities portfolios. International and global portfolio managers make currency hedging decisions. International currency risk is further managed through diversification across international regions, economies, sectors and individual investments. Approximately 31% of WRS assets are exposed to foreign currency risk resulting from these holdings. That was the same at the end of 2003. The relative amount of foreign currency exposure is less in the Variable Fund than in the Fixed Fund. International equity portfolios are nearly fully exposed to non-US currencies; and developed global fixed income portfolios have approximately 85% exposure to non-US currencies.

- ***Emerging Markets***: Slightly higher than the 2.5% at the end of 2003, investments in developing countries represented approximately 3.2% of the retirement funds' assets at the end of 2004. From 2001 through 2002, SWIB's active developed international equity portfolio managers could make equity investments in emerging markets on an opportunistic basis. In 2003, SWIB established two fixed income and three equities portfolios that are externally managed and dedicated to emerging markets. In late 2003, the fixed income group switched one of the portfolios to a combined emerging markets/high yield portfolio, and created another emerging markets portfolio in 2004. In addition to the dedicated portfolios, international equity portfolios may invest up to 15% and global fixed income portfolios may invest up to 10% of assets in emerging markets. Within limits, private equity and real estate portfolios may invest in funds that invest in emerging markets.

- ***Liquidity***: An estimated 80% of retirement fund assets are invested in markets that would enable liquidation in an orderly fashion within one month with little financial degradation. This substantial level of liquidity should enable the WRS to meet its funding needs for the foreseeable future. In 2003, it was slightly less, at 77%.

- ***Derivatives***: Derivatives are financial instruments whose value depend on, or are derived from, the value of another asset, index or rate. On December 31, 2004, the Fixed Fund utilized the following types of derivatives: (a) **foreign currency forward contracts**, which fix the exchange rate for future delivery of a currency at an agreed upon date; (b) **futures contracts**, which are an obligation to purchase or sell an underlying security at a specified date; and (c) **credit-linked trust certificates**, which are investments in a limited purpose trust. Refer to ***Appendix I*** for a description of how derivatives are used.

  The fair value of the foreign currency forward contract assets in the Fixed Fund was $2.21 billion, and the liabilities totaled $2.22 billion. The base exposure from interest rate futures contracts totaled $484.8 million, and realized gains on futures contracts totaled $7.7 million for the year. The Variable Fund only held foreign currency forward contracts. At year-end, the fair value of the assets and liabilities each totaled approximately $4.4 million.

- ***Tracking Error*:** Tracking error measures volatility of excess return to that of the benchmark, and is an indication of how the fund or portfolio is positioned relative to the benchmarks. This also helps measure the extent to which the performance of any one portfolio within the Fixed Fund or the Variable Fund could affect the performance of the entire Fund. The 1.2% five-year tracking error as of December 31, 2004 was slightly less than the 1.5% level on December 31, 2003 for the Fixed Fund. The 2.2% five-year tracking error for the Variable Fund on December 31, 2004 was significantly lower than the 2.8% on December 31, 2003.

- ***Soft Risk Parameters:*** Investment guidelines include "soft risk parameters". These are supplementary guidelines within which a portfolio is expected to operate over time. The Investment Committee, which is composed of SWIB management and investment staff, monitors portfolios for compliance with the parameters on a regular basis. The Committee discusses the rationale and outlook for any exceptions.

Chapter 3
Legislative Audit Bureau Evaluation Topics[4]
Enhanced Index/Quantitative Funds

In its report, LAB noted that costs for externally managed enhanced index strategies represented 28.2% of SWIB's external investment expenses in 2003. LAB recommended that SWIB evaluate, and address in this report, the costs and value added through these strategies in comparison to other investment options. In particular, the LAB recommended that SWIB carefully monitor the use of performance-based fees for these strategies to ensure that SWIB is obtaining the highest net return for the funds.

Enhanced index portfolios (also referred to as "quantitative" or "tilt" portfolios) are considered a specialized form of active management. They seek to outperform an index through the use of quantitative modeling and screening tools, with the goal of taking more constrained risk than other types of active management strategies.

Enhanced indexing is a research-driven process to identify drivers of return. A robust research pipeline is needed to exploit market inefficiencies. The types of enhanced strategies currently used by SWIB's outside managers require an extensive database that must be created and maintained, requiring a high level of technical skills usually provided by PhD's. Powerful computer equipment is required for back-testing the data.

Nearly $18.0 billion of WRS assets (25.6%) were managed using quantitative strategies as of December 31, 2004.

Enhanced Index (Quantitative) Portfolios
WRS Assets Managed
December 31, 2004

Manager	Portfolio	Assets (in millions)	Percent of Total WRS
GMO (a)	Domestic Large Cap Equities	$1,072	1.5%
LSV (b)	International Equities	1,212	1.7%
BGI (c)	Domestic Fixed Income (Credit)	2,206	3.2%
BGI (d)	Domestic Fixed Income (Government)	516	0.7%
BGI	High Yield Fixed Income	328	0.5%
BGI	International Equities	4,048	5.8%
BGI	Russell 1000 Domestic Equities	4,786	6.8%
BGI	Russell 2000 Domestic Equities	748	1.1%
BGI	Russell 3000 Domestic Equities	3,028	4.3%
	TOTAL	$17,944	25.6%

(a) Grantham, Mayo, Van Otterloo
(b) LSV Asset Management. Portfolio started in August, 2004
(c) Barclays Global Investors
(d) Portfolio started in December, 2004

[4] Refer to the Legislative Audit Bureau's report #04-13, November 2004, "An Evaluation – State of Wisconsin Investment Board", pages 29-43.

In 1998, SWIB began to transfer assets from an S&P 500 index fund to commingled enhanced portfolios. In retrospect, the timing was opportune in that the S&P 500 index peaked in 1999 and fell over the next three years. SWIB subsequently expanded its use of quantitative strategies and converted most quantitative manager compensation from a flat rate to a performance fee.

Under a performance fee arrangement, SWIB pays a base amount that is lower than the previous flat fee. Additional compensation is paid if the manager exceeds certain performance thresholds. Because a number of our quantitative portfolios have had strong performance, management fees rose. However, after fees are taken into account, the enhanced portfolios outperformed their passive index equivalents by a net $489 million from inception through December 31, 2004.

Enhanced Index (Quantitative) Portfolios
Net Return Over Passive Indexes

Inception Through December 31, 2004
($ in millions)

Fund	SWIB Inception Date	Gross Added Return Over Index	Fees Since Inception	Net Added Return Over Index
GMO: Domestic Large Cap Equities	7/1/98	$55.4	$12.1	$43.3
JP Morgan: Domestic Large Cap Equities	7/1/98 (a)	-14.9	2.7	-17.6
Baker: Domestic Large Cap Equities	6/30/00 (b)	5.8	4.2	1.6
LSV: International Equities	8/01/04	18.5	1.7	16.8
BGI:				
Domestic Fixed Income (Credit)	9/30/02	4.9	5.6	-0.7
Domestic Fixed Income (Government)	12/31/04	NA	NA	NA
High Yield Fixed Income	9/30/02	-8.9	1.5	-10.4
Large Cap Equities	8/3/00 (c)	302.3	62.9	239.4
Mid Cap Equities	6/30/02 (d)	64.7	4.8	59.9
International Equities	10/31/01 (e)	160.6	32.7	127.8
Russell 1000 Domestic Equities	8/29/03	-1.4	6.4	-7.8
Russell 2000 Domestic Equities	4/30/01	44.8	17.5	27.3
Russell 3000 Domestic Equities	9/30/02	15.7	6.3	9.4
TOTAL		$647.5	$158.5	$489.0

(a) SWIB closed its position in February 2001
(b) SWIB closed its position in February 2003
(c) SWIB closed its position in September 2003
(d) SWIB closed its position in June 2004
(e) SWIB first invested in the "EAFE Alpha" portfolio prior to creation of the "World ex US Alpha" portfolio

SWIB reviewed historical, risk-adjusted performance for enhanced strategies compared to other forms of active management. This data is collected by a leading investment analytics firm from several hundred external managers, not just those currently retained by SWIB. For certain SWIB investment strategies and some time periods, information is limited or includes data from a relatively small number of enhanced managers.

Based on industry reporting standards, manager performance information is reported on a gross return basis. For that reason, the data shown in the following tables are gross returns that have not been reduced for management fees or other costs.[5] The tables compare the median gross return of managers using enhanced (quantitative) management to the median gross return of managers using other forms of active management. The "median added return" represents the amount by which the median manager exceeded or underperformed the market index.

Risk is represented by the "information ratio" which measures the excess return per unit of excess risk. A higher information ratio indicates a better risk adjusted return. <u>The results tend to confirm the long-term value of both enhanced and other active strategies in portfolio management</u>.

- <u>Large cap domestic equities:</u> The median added return from other active managers was greater than enhanced managers for the three-, five- and ten-year periods. However, on a risk-adjusted basis, the median return added by enhanced managers was better than that of other active strategies for the three- and ten-year periods.

Large Cap Domestic Equities
Wilshire Associates Manager Universe
Gross Returns as of December 31, 2004

	Enhanced/Quantitative Managers Percent Return				Other Active Managers Percent Return			
	1 Yr	3 Yr	5 Yr	10 Yr	1 Yr	3 Yr	5 Yr	10 Yr
Median Manager Return	11.41	4.11	-2.00	12.57	10.84	4.19	0.03	12.86
S&P 500 Index Return	10.86	3.58	-2.29	12.07	10.86	3.58	-2.29	12.07
Median Added Return	0.55	0.53	0.29	0.50	-0.02	0.61	2.32	0.79
Number of Managers	35	35	27	12	175	175	160	99
Median Information Ratio (IR)		0.48	0.07	0.32		0.02	0.32	0.16
Number of Managers (IR)		30	24	12		122	100	90

- <u>International equities</u>: The median added return from other active managers was greater than enhanced managers for the five- and ten-year periods. However, on a risk adjusted basis, the median return added by enhanced managers was better than other active strategies for the three-, five-, and ten-year periods.

[5] Source: Wilshire Associates

International Equities Wilshire Associates Manager Universe Gross Returns as of December 31, 2004								
	Enhanced (Quantitative) Managers Percent Return				Other Active Managers Percent Return			
	1 Yr	3 Yr	5 Yr	10 Yr	1 Yr	3 Yr	5 Yr	10 Yr
Median Manager Return	21.20	12.94	-0.34	7.09	19.67	12.66	0.82	8.71
MSCI ex US Index Return	20.38	12.21	-0.77	5.93	20.38	12.21	-0.77	5.93
Median Added Return	0.82	0.73	0.43	1.16	-0.71	0.45	1.59	2.78
Number of Managers	8	8	5	2	207	200	183	114
Median Information Ratio (IR)		1.03	0.68	0.68		-0.03	0.33	0.49
Number of Managers (IR)		7	4	2		147	122	92

- Domestic fixed income: The median added return from enhanced managers surpassed the passive market index while the median return for other active management was below the market index across the ten-year period. However, data for enhanced managers is very limited.

Domestic Fixed Income Wilshire Associates Manager Universe Gross Returns as of December 31, 2004								
	Enhanced (Quantitative) Managers Percent Return				Other Active Managers Percent Return			
	1 Yr	3 Yr	5 Yr	10 Yr	1 Yr	3 Yr	5 Yr	10 Yr
Median Manager Return	5.52	7.56	9.71	9.10	4.10	6.10	7.52	7.44
Lehman Index Return	4.20	6.60	8.01	7.80	4.20	6.60	8.01	7.80
Median Added Return	1.32	0.96	1.70	1.30	-0.10	-0.50	-0.49	-0.36
Number of Managers	5	4	3	2	124	121	111	80
Median Information Ratio (IR)		0.24	0.32	0.20		0.25	0.21	0.21
Number of Managers (IR)		2	2	1		80	41	67

Approximately two-thirds of the Cost Effectiveness Measurement, Inc. (CEM) public pension fund peer group used some form of enhanced index management in 2003.[6] On average, the peer group used enhanced management for 10.0% of their total holdings compared to SWIB's 23.1%.

SWIB has recently done additional modeling to help evaluate the size of its commitment to enhanced strategies. The results suggest that SWIB is generally well positioned but that enhanced strategies could be given a modestly larger role, because their returns tend to be less volatile than other types of active management. Whether or not SWIB moves more in that direction, we continue to review manager performance and compensation for enhanced index strategies on an ongoing basis.

6 Includes the Fixed Retirement Fund and 16 other large public pension funds

- Over the last several years, SWIB has realigned assets among enhanced portfolios several times in order to achieve the optimal mix.

- SWIB renegotiated enhanced index fees in 2001, 2003 and 2004 to achieve more favorable terms. Performance fees can ensure that the interests of the investor and manager are most closely aligned, since the base fee paid under these contracts is typically significantly lower than a flat rate fee. SWIB staff consider whether performance-based fees appear to be the most effective when negotiating contracts. SWIB removed one portfolio from performance-based compensation in 2004 and placed it on a fixed rate arrangement when that appeared to be the most cost-effective approach.

- The amount of fees SWIB paid for enhanced strategies declined from $40.1 million in 2003 (the last period covered in the LAB report) to $30.9 million in 2004, reflecting manager performance and more favorable fee schedules.

External Management Authority

The assets of the WRS are managed by SWIB's own professional staff and by investment firms retained by SWIB. Over the last decade, SWIB and its peers have increased reliance on external management. This trend reflects constraints on internal resources, efforts to achieve greater investment diversification, and new investment strategies that require special external expertise. External managers are now involved in managing approximately 70% of WRS assets.

Internal and External Management of WRS Trust Funds Assets

	December 31, 2003		December 31, 2004	
	Amount (in millions)	Percent	Amount (in millions)	Percent
Internally Managed	**$22,585**	**35.9%**	**$20,855**	**29.8%**
Externally Managed Dedicated Accounts	**6,375**	**10.1**	**9,316**	**13.3**
Externally Managed Commingled Accounts	**33,868**	**53.9**	**39,835**	**56.9**
1. Passive Index Funds	*16,581*	*26.4*	*19,598*	*28.0*
2. Enhanced Index Commingled Funds	*13,447*	*21.4*	*15,660*	*22.4*
3. Limited Partnerships	*2,702*	*4.3*	*2,706*	*3.9*
4. Actively Managed Commingled Accounts	*1,138*	*1.8*	*1,871*	*2.7*
TOTAL WRS Assets	**$62,829**	**100.0%**	**$70,006**	**100.0%**

The Legislative Audit Bureau noted that a state statute permits SWIB to use external management for up to 15% of the assets of the Fixed and Variable Funds.[7] Since the law was enacted in 1988, SWIB has consistently interpreted this limit to apply only to securities owned in SWIB's name ("dedicated accounts"). At 2004 year-end, approximately 13.3% of WRS assets were managed this way.

LAB commented that it was unclear whether SWIB's interpretation meets the original intent of the 15% statutory limit, because a significant portion of WRS assets that are externally managed in commingled accounts are excluded from

[7] s. 25.18(2)(e)

the limit. SWIB relies on other sections of the statutes for authority to make such investments.

SWIB already had statutory authority to make commingled investments and was doing so in the private markets prior to 1988 when the statute limitation was enacted. SWIB had sought authority so that it could hire external managers to make direct investments in the international equities and fixed income markets.

Over the last five to ten years, the share of assets managed in commingled funds has increased as SWIB sought the most cost-effective way to manage asset growth and diversify risk.

In a commingled account, SWIB's investment is combined with other investors' and the underlying securities are owned in the name of an external fund manager. In each case, SWIB has made the determination that these investments require special expertise and it would not be cost-effective for SWIB to manage them internally.

- Nearly 90% of SWIB's commingled account investments are shares of index funds and enhanced index funds in the equities and fixed income markets. Public pension managers invest in these funds in much the same way as individuals invest in mutual funds.

- SWIB makes commingled investments as a limited partner in real estate and private equity funds. The general partner serves as asset manager and uses partnership assets to purchase properties or interests in underlying companies.

- SWIB also invests in actively managed commingled accounts for emerging market and multi-asset investments.

SWIB believes it is in compliance with the 15% limitation and with other statutes that confer authority to use external management. However, the financial markets have changed substantially since the statute was enacted. A number of the commingled products in which SWIB and many other public funds currently invest were either not available in the markets or were not widely used in 1988. Their role in asset management has expanded significantly.

SWIB agrees with LAB that the 15% limit statute should be reconsidered in light of today's marketplace. SWIB's review of internal and external management has reached the following conclusions thus far:

1. SWIB trustees have concerns that the 15% limit is not in the best interests of the trust funds. As a matter of fiduciary responsibility, **it can be argued that the Board should have full flexibility to choose the management style that is likely to earn the best net return with appropriate risk.** In addition, departure of SWIB personnel may require that external managers temporarily take over management of an internal portfolio.

2. SWIB has a strong tradition of internal management that provides a "SWIB edge" in the marketplace. The amount of internal management has decreased in recent years because of resource limitations and the need to diversify risk associated with managing very large portfolios internally. However, **SWIB still does more internal**

management and in a wider range of markets than our peer group[8]. Internal management typically costs less, is competitive with external management in a number of areas and provides a valuable "window on the markets" in setting overall investment strategy.

3. Our own surveys and independent survey data confirm that **the types of external relationships SWIB uses are also widely used by our peers.** Even peers with no statutory controls on internal expenses or position levels have chosen to rely primarily or exclusively on external managers for enhanced index funds, international developed markets, emerging markets, real estate and private equity. Most public funds find it impractical to gather sufficient resources or expertise to internally manage assets in most of these markets.

4. **Internal and external management are both viable options for many types of stock and bond portfolios**. Net return data for SWIB and our peers for 1994-2003 show that external management outperformed internal management in some markets, while internal management outperformed in others.[9] The style that performed best varies at different points in time. This underscores **the importance of having flexibility to choose the most appropriate management style as markets and investment products change.**

5. As a practical matter, the **distinction between "internal" and "external" management is becoming less meaningful** as markets and manager relationships evolve. For example:

   - SWIB contracts with an outside firm to manage a bond index fund, but a SWIB portfolio manager actively makes determinations as whether segments of the index will be over-weighted or under-weighted.

   - One of SWIB's real estate portfolios delegates authority for making purchases to outside advisors selected by SWIB's portfolio manager. However, once a property is purchased authority to manage and sell the investment is held by the internal portfolio manager.

6. Survey responses from 18 public funds found that 14 have no statutory restriction on their use of external management. **We have not been able to identify another public fund that operates under a cap like SWIB's 15% limit.**

7. SWIB's **fiduciary counsel "strongly recommends that the statutory constraint be eliminated as inconsistent with SWIB's fiduciary standard.**"

8. As part of a comprehensive review, SWIB has used a number of modeling tools to help assess the most desirable mix of internal and external management for the WRS. Our overall assessment thus far is that **our current mix of internal and external management is generally well positioned.** However, we are going to monitor this carefully as new opportunities arise and needs change with a focus on best net return. **The flexibility to adjust the mix of internal and external management as markets change is critical to achieving best net returns for the trust funds.**

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[8] Cost Effectiveness Measurement, Inc. data for SWIB and 16 large public fund peers for 2003.
[9] Cost Effectiveness Measurement, Inc.

SWIB recognizes that accountability is part of management flexibility. We also recognize that it is important that WRS members, the Legislature and Governor have confidence that we are making cost effective decisions regarding the use of internal and external resources. With that in mind, SWIB recommends the following steps:

- Work toward eliminating the 15% limit statute.

- Amend the statute that requires quarterly reporting of certain categories of trust fund costs to:

  (1) Include all direct charges to the trust funds;
  (2) Include a breakdown of the amount and percent of assets managed under each type of dedicated or commingled account or partnership and the change from the previous quarter.
  (3) Add the Joint Legislative Audit Committee to the report's recipients.

- Expand the annual goals and strategies report to provide a breakdown of the total costs of management and sources of net return.

Investment Management Costs

SWIB's costs rose significantly over the five-year period from 1999 through 2003, primarily due to the increasing role of external management. The LAB report concluded that statutory limitations on SWIB's internal budget, number of staff and certain types of external management can lead to investment management choices that are not always the most cost effective. The report suggested that the Legislature consider changes to current statutory limits, taking into account the results of SWIB's recent review of the degree of active management and the mix of internal and external management.

SWIB's primary focus is to earn the best net rate of return with appropriate risk. SWIB has expanded external management primarily in the use of enhanced index strategies in the public markets and limited partnership investments in the private markets. As described in our November 15 audit response, the trust funds have benefited on a net return basis from these strategies.

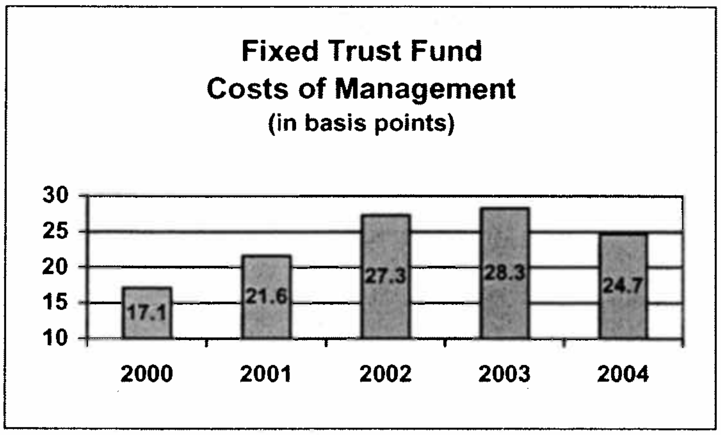
- SWIB recognizes that it must carefully manage our costs of doing business:

- Our total costs (internal expenses plus fees to vendors) in 2004 were $156.7 million, the same as 2003. For all assets managed, our total cost fell from 25 cents per $100 managed in 2003 to 22 cents in 2004.

- There was little change in either the overall costs of internal or external management.

Investment Board Costs Calendar Years 2003 and 2004 (in millions)	2003	2004
Internal Operating Expenses		
Salaries and Fringe Benefits	$13.2	13.9
Other	3.3	2.8
Internal Subtotal	$16.5	$16.7
External Costs		
Public Markets Investment Managers	62.2	68.3
Private Markets Investment Managers		
Private Equity	44.9	39.2
Real Estate	20.7	22.6
Support Services	12.1	9.6
Soft Dollars	0.3	0.2
External Subtotal	140.2	140.0
Total	$156.7	$156.7

Our costs to manage Fixed Fund assets were 28 cents per $100 managed ("28 basis points") for 2003. An independent assessment found that our costs matched the peer group median for the same asset mix and management styles. This assessment described SWIB's costs as "normal."[10] SWIB's costs to manage Fixed Fund assets in 2004 declined to less than 25 cents per $100 managed.



As of December 31, 2004, the Fixed Fund had the best five-year gross and net returns of the 10 funds in the peer group selected by the LAB for its audits of SWIB.

These comments notwithstanding, SWIB agrees that current budget and statutory controls at times can make it difficult for SWIB to manage assets in the way most likely to produce the best net return. When this occurs, it is to the detriment of retirement system members who count on our success and ultimately taxpayers who pay higher contributions as a result.

At the direction of the Board, staff conducted an extensive review of the ways in which WRS assets are managed, focusing on the following question: "If SWIB were not

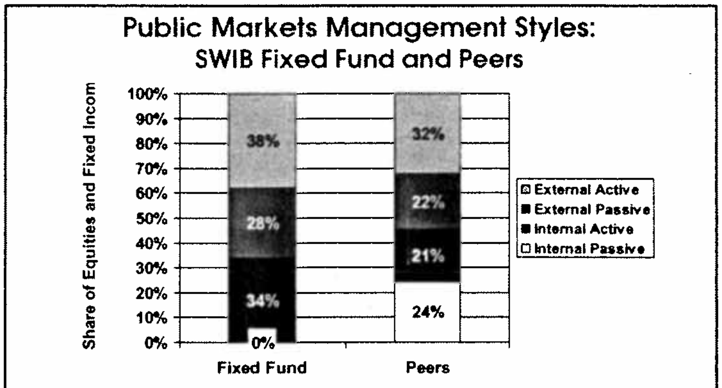
[10] Cost Effectiveness Measurement, Inc.

constrained by current statutes or past practice, what would be the mix of strategies and styles to earn the best net return for our members while taking appropriate risk?"

To determine whether SWIB is using the most desirable mix of investment styles, the review focused on five key questions and reached the following conclusions:

1. ***How does SWIB's mix of portfolio management styles compare to its peers'?***

- In the public markets (equities and fixed income), SWIB and its peers have increased reliance on external management. Although SWIB has reduced the amount of internal active management for the Fixed Fund to approximately 34% of public market assets, SWIB still does more internal active management than the average for its peer group (21%).[11]



Cost Effectiveness Measurement, Inc. peer group of 17 public funds for 2003

- SWIB is one of relatively few public funds that internally manage mid- or small cap domestic equities, international equities or global fixed income portfolios.

- Some of SWIB's peers manage passive index portfolios internally. SWIB has not done so because of low external management fees and the ability of external managers to closely track the index and constrain transaction costs, particularly in the equities markets.

- In the private markets (real estate and private equity), SWIB is similar to its peers in relying primarily on investments in externally managed limited partnerships.

2. ***Which management style (internal or external) has produced the best net return?***

- SWIB reviewed its own experience and that of its peers' over the ten-year period from 1994-2003 in the public markets (equities and fixed income.) We compared net returns from SWIB's internal and external managers to the peer group's average net returns from internal and external management. In a number of cases, SWIB does not have ten years of experience with external management. In those situations, we compared internal and external management for the number of years for which we used both.

[11] Cost Effectiveness Measurement, Inc. data for 2003

Net of fees, internal active management performed better in some public markets, while external management did better in others.

- The relative success of internal and external management varies over different time periods. For example, internal and external managers for SWIB and the peer group underperformed the market in large cap stocks over the ten-year period. However, over the six-year period in which SWIB used both internal and external managers, SWIB's internal portfolios outperformed the markets, SWIB's external manager and the average return from internal and external managers in the peer group.

Public Equities
Net Return Over Indexes
Average Annual Added Return 1994-2003**

Active Portfolios	Large Cap		Mid/Small Cap		Intern'l	Emerging
	10 yr	6 yr*	10 yr	3 yr*	10 yr	9 yr***
SWIB–Internal	-0.38%	1.43%	0.49%	4.20%	1.20%	NA
SWIB–External	NA	0.45%	NA	3.00%	3.93%	2.68%
Peers–Internal	-0.64%	-0.30%	NA	1.55%	2.39%	-1.14%
Peers–External	-0.19%	0.81%	NA	-1.55%	1.69%	2.45%

Data Source: Cost Effectiveness Measurement, Inc.

* Years in which SWIB used both internal and external management
**SWIB and peers do not all use the same passive index benchmark
***SWIB had an emerging markets portfolio for only nine years.

- In the fixed income markets, SWIB's domestic portfolios outperformed the index, net of fees, as well as peer internal and external management for the ten-year period. SWIB's global portfolio outperformed SWIB's external managers as well as peer internal and external managers for the five years of this period in which it had a global benchmark.

Fixed Income:
Net Return Over Indexes
Average Annual Added Return 1994-2003***

Active Portfolios	Domestic		Global
	10 yr	2 yr*	5 yr**
SWIB—Internal	0.15%	-0.39%	0.39%
SWIB—External	NA	-0.54%	0.35%
Peers—Internal	0.10%	-0.22%	0.06%
Peers—External	0.14%	-0.03%	0.59%

Data Source: Cost Effectiveness Measurement, Inc.

* Years in which SWIB used both internal and external management
** Start of global benchmark
*** SWIB and peers do not all use the same passive index benchmark

- The distinction between "internal" and "external" management is diminishing. Several SWIB investment strategies now involve elements of both.

3. ***Would net returns increase by shifting assets from external to internal management?***

- In the public markets, enhanced index portfolios play a major role in SWIB's strategies. SWIB does not manage these investments internally, nor do most peers. Even with fewer budget and staffing constraints, it is very unlikely that SWIB (or most peers) could ever replicate the resources and processes that external managers use for these complex strategies.

- With additional staff and support resources, SWIB may be able to internally manage an index portfolio in the fixed income area at less cost than external management. However, this would likely be a lower priority than providing more support for active management.

- Investments in private markets are very labor intensive. SWIB has experienced difficulties with a number of its internally managed direct investments in private equity. Even public pension funds with no internal budget or staffing constraints find it difficult to attract the necessary expertise to grow these programs internally. It is unlikely that any material benefit would result from attempting to move these strategies in-house.

- Although the results of our review did not indicate a need for major shifts between internal and external management, some ideas continue to deserve careful monitoring. In addition, there are internally managed portfolios which are thinly staffed and could benefit from having additional analysts or other support.

- Over the last decade, a wide range of new investment products and strategies have gained a major foothold in the financial markets. They include enhanced index funds, exchange traded funds, emerging markets, high yield debt and Treasury Inflation-Protected Securities (TIPS). The flexibility to adjust the mix of management styles to changing market opportunities and managers' strengths is critical to achieve best net returns with appropriate risk.

4. ***Is there a more optimal mix of active, index and enhanced index management strategies?***

- SWIB tested various models to determine whether more net return would be projected from a different mix of active, passive and enhanced strategies without increasing the current level of risk. In general, this work suggests that our mix of active, index and enhanced strategies is in an appropriate range. It also suggests a somewhat greater use of enhanced index strategies may be desirable, which we will be evaluating with the Board.

- SWIB has an active and well developed core program of risk analysis for individual portfolios, various asset classes and the fund as a whole. Because of the recent modeling work, we have a better understanding of how the mix of active, index and enhanced index strategies affect risk.

- Risk "budgets" are one tool that can be used to monitor and manage the amount of risk being taken through active portfolio management. One approach is to track the volatility of a portfolio's return against its market index and against a desired or "budgeted" level of volatility. Modeling can be used to project whether a different mix of portfolio management styles would generate the same or better returns within the current level of risk. SWIB is pursuing the role for a risk budget to assist in guiding future decisions about the mix of management styles.

5. ***How does SWIB's budget and management authority compare to its peers?***

- SWIB surveyed 24 public pension funds, including the nine peers selected by LAB for its performance audits of SWIB. In general, most peers have fewer statutory constraints on their internal operating budgets than SWIB. Few peers have any legislative constraints on external management authority.

- Thirteen funds have no statutory control or legislative approval of their operating expenses or external management expenses.

- Eight funds have legislative controls only on agency operating expenses. Governing boards have oversight of external management expenses.

- Two funds have legislative approval or a cap on all types of expenses.

- One fund has a relatively high statutory cap on all expenses, with the cap set as a percent of assets under management (40 basis points).