Report 07-10
August 2007

An Evaluation

State of Wisconsin Investment Board

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Janice Mueller
State Auditor

August 1, 2007

Senator Jim Sullivan and
Representative Suzanne Jeskewitz, Co-chairpersons
Joint Legislative Audit Committee
State Capitol
Madison, Wisconsin 53702

Dear Senator Sullivan and Representative Jeskewitz:

We have completed an evaluation of the State of Wisconsin Investment Board, as directed by s. 25.17(51m), Wis. Stats. As of December 31, 2006, the Investment Board managed a total of $88.4 billion in investments that included assets of the Wisconsin Retirement System, the State Investment Fund, and five smaller insurance and trust funds.

The retirement funds provided mixed returns for periods ending December 31, 2005 and 2006. The Core Fund exceeded all of its benchmarks. The Variable Fund met or exceeded all of its benchmarks in 2005 but lagged its three- and five-year benchmarks at the end of 2006. We include a recommendation for the Investment Board to re-evaluate its policies and procedures for making decisions affecting the Variable Fund's performance.

The Core Fund's performance ranked in the middle in comparison to nine other public pension funds surveyed as of December 2006. A relatively lower allocation to private equity and real estate and underperformance of its domestic equities contributed to this ranking.

In past years, the Investment Board encountered difficulties in the management of private markets investments. It has made organizational, staffing, and procedural changes to address these concerns. Correspondingly, its private markets investments have provided strong returns in recent years.

The Investment Board manages two private markets portfolios with a Wisconsin emphasis. The Wisconsin private debt portfolio is providing solid returns. However, it is too early to assess the long-term success of the Wisconsin private equity portfolio, which was established in 2000.

We appreciate the courtesy and cooperation extended to us by the Investment Board. A response from the Board's Executive Director follows the appendices.

Respectfully submitted,

Janice Mueller

Janice Mueller
State Auditor

JM/DA/ss

Report Highlights ▪

Most, but not all, performance benchmarks have been met.

The Investment Board has improved its management of private markets investments.

Private markets investments provided strong returns in 2005 and 2006.

The Investment Board manages two private markets portfolios with a Wisconsin emphasis.

The Investment Board faces several challenges in maintaining a successful private markets program in the future.

The State of Wisconsin Investment Board manages the assets of the Wisconsin Retirement System, the State Investment Fund, and five other state insurance and trust funds. Two Wisconsin Retirement System funds—the Core Retirement Investment Trust and the Variable Retirement Investment Trust—account for 94.1 percent of all assets under its management. They fund retirement benefits for more than 540,000 current and former state and local government employees.

In total, the Investment Board managed $88.4 billion in assets as of December 31, 2006. Its domestic and international investments included stocks, bonds, real estate, private equity, private debt (including direct loans to Wisconsin companies), and cash.

The Investment Board's nine-member Board of Trustees establishes long-term investment strategies and policies. The Executive Director, professional staff in 99.5 other full-time equivalent positions in the State's unclassified civil service system, and 4.0 classified employees are responsible for day-to-day investment management. For some investments, external managers and advisors supplement staff resources or provide expertise that would otherwise not be available.

Statutes require the Legislative Audit Bureau to perform a biennial management audit of the Investment Board. In addition to reviewing its performance in managing Wisconsin Retirement System assets, we reviewed the holdings, strategies, procedures, and practices of the Investment Board's private markets group.

Investment Performance

A rebound in investment markets during 2003 brought both retirement funds double-digit returns that were among their highest in the preceding 20 years. As shown in Table 1, positive returns continued through 2006.

Table 1

Annual Returns

Year	Core Fund	Variable Fund
2002	(8.8)%	(21.9)%
2003	24.2	32.7
2004	12.8	12.7
2005	8.6	8.3
2006	15.8	17.6

The Core Fund met or exceeded all of its benchmarks at the end of 2005 and 2006. The Variable Fund met or exceeded all of its benchmarks at the end of 2005 but lagged its three- and five-year benchmarks at the end of 2006.

International equities, real estate, and private equity were among the Investment Board's better performing asset classes. The most notable underperforming asset class was domestic equities, which missed one-, three-, and five-year benchmarks at the end of 2006. In response, the Investment Board has undertaken several steps to reorganize equity portfolios and staff in an effort to improve performance.

As of December 2006, the Core Fund's performance ranked in the middle compared to nine other public pension funds. A lower allocation of assets to private equity and real estate compared to the top-performing pension funds, and under-performance of its domestic equities contributed to its middle ranking.

The Variable Fund's performance lags the composite performance of all equity portfolios in both retirement funds managed by the Investment Board. We include a recommendation for the Investment Board to re-evaluate its policies and procedures for making decisions affecting the Variable Fund's performance.

Management of Private Markets Investments

Private markets investments include private equity, real estate, and private debt. These investments can offer the potential for higher returns, although at a higher risk.

The Investment Board encountered difficulties in the management of several of its private markets investments in past years because it did not have an adequate structure, resources, and controls in place to support their success. Beginning in 2002, it took several steps to address these concerns. One of the major steps was to establish a private markets group to manage all private markets investments under one managing director. The Investment Board also made strategic changes to help reduce the level of risk associated with its private equity investments, and it improved due-diligence procedures and increased its monitoring efforts.

Performance of Private Markets Investments

Private equity and real estate investments provided strong returns during 2005 and 2006. As shown in Table 2, both asset classes significantly exceeded their benchmarks in each year. One of the major contributing factors to private equity's performance was the successful liquidation of several investments in a private equity transition portfolio. Strong returns on international investments benefited real estate performance.

Table 2

Performance of Private Equity and Real Estate Investments
One-Year Returns for 2005 and 2006

	2005		2006	
Asset Class	Return	Benchmark	Return	Benchmark
Private Equity	44.2%	30.4%	28.7%	20.3%
Real Estate	28.2	19.2	30.1	17.6

A continuing challenge in evaluating performance for the private markets investments is establishing appropriate benchmarks. Since 2000, the Investment Board has changed or modified its private equity benchmarks five times as industry-wide performance data have become more available.

Benchmarks for real estate, which is a more established asset class, have not changed as frequently. However, we believe the Investment Board should regularly analyze whether its benchmarks continue to be appropriate, based on the strategies and investments included in the real estate portfolios. For example, the current benchmark for the real estate funds portfolio does not consider that portfolio's international investments, which contributed significantly to its performance and represented 55.7 percent of its value at the end of 2005, and 43.7 percent as of September 30, 2006.

Wisconsin Investments

The Investment Board regularly makes investments in Wisconsin through the various asset classes it manages. It has invested almost $1.4 billion in companies headquartered or with a significant presence in Wisconsin, including a private debt portfolio and a private equity portfolio with a Wisconsin emphasis.

On December 31, 2006, the Wisconsin private debt portfolio was valued at $352.7 million, which represented loans and investments with 31 different Wisconsin companies. That portfolio has had relatively steady performance over the past several years, and it exceeded all of its benchmarks for periods ending December 31, 2005 and 2006.

The Wisconsin private equity portfolio was established in 2000 to focus on venture capital funds active in Wisconsin and the Midwest. Through 2006, the Investment Board has committed $180.0 million to four venture capital firms. Of that amount, $77.7 million has been invested, including $32.5 million in Wisconsin companies.

The Wisconsin private equity portfolio had negative returns and significantly underperformed its benchmarks for all periods at the end of 2005 and 2006. The Investment Board attributes the underperformance to the fact the portfolio is relatively new: early-stage private equity investments are expected to earn below-benchmark returns until several years have passed. Consequently, it will be important to closely monitor the performance of this portfolio in future years, to ensure it provides the level of return that meets the Investment Board's fiduciary responsibilities.

Future Challenges

The Investment Board faces several challenges in maintaining a successful private markets program in the future. One major challenge is meeting its allocation targets as competition for private market investments increases.

The Investment Board is implementing or considering several options for increasing its access to private markets investments, including hiring an additional private equity consultant to identify more investment opportunities. As it evaluates options for increasing investments in these markets, the Investment Board should also ensure that it has corresponding procedures and controls in place to properly protect its interests, and to ensure prudent investments.

At the same time, recent staff turnover suggests the Investment Board will face continuing challenges in hiring and retaining staff with skills to develop and monitor complex and higher-risk investment strategies in the private equity investments.

Recommendations

Our recommendations address the need for the Investment Board to:

☑ re-evaluate its policies and procedures for making allocation and investment decisions that affect the Variable Fund *(p. 31)*;

☑ review closely the process of and decisions made by investment staff in the placement of investments into transition portfolios *(p. 39)*;

☑ regularly analyze the continuing appropriateness of its benchmarks for the real estate portfolios *(p. 49)*; and

☑ in its annual report to the Legislature, report on its success in increasing its investments in private markets and on the performance of its Wisconsin private equity portfolio *(pp. 51 and 59)*.

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Introduction ▪

The Investment Board's statutory mission is to provide prudent and cost-effective management of the funds it holds in trust, through investment returns that are consistent with the purpose and risk profile of each fund. The $88.4 billion in assets under its management as of December 31, 2006, included:

- $83.2 billion in the Wisconsin Retirement System, which accounted for 94.1 percent of assets under management and represents pension funds for more than 540,000 current and former employees of state agencies and most local governments in Wisconsin, but not the City of Milwaukee or Milwaukee County;

- $4.3 billion in the State Investment Fund, which accounted for 4.9 percent of assets under management and provides short-term investment and cash management for state funds, the Wisconsin Retirement System, and more than 1,050 local units of government that choose to participate in the Local Government Investment Pool; and

- $0.9 billion in the Injured Patients and Families Compensation Fund, the State Life Insurance Fund, the Local Government Property Insurance Fund, the Historical Society Trust Fund, and the EdVest Tuition Trust Fund, which together accounted for 1.0 percent of assets under the Investment Board's management.

The Department of Employee Trust Funds administers the Wisconsin Retirement System and has responsibility for its day-to-day management, while the Investment Board invests the system's assets to finance post-retirement benefits. To manage these assets, the Investment Board buys, holds, and sells a mix of domestic and international investment vehicles, including:

- public equities (stocks) and bonds;
- real estate held directly or through funds and other investment vehicles;
- private equity, which includes equity securities (funds and partnerships) not listed on a public exchange;
- private debt, including direct loans to Wisconsin companies; and
- cash and short-term debt instruments.

The Board of Trustees establishes investment strategies and policies.

The nine-member Board of Trustees is responsible for establishing long-term investment strategies and policies, developing investment guidelines, and monitoring investment performance. Two trustees are participants in the Wisconsin Retirement System, and one is the Secretary of the Department of Administration or a designee. The remaining six trustees are appointed by the Governor with the consent of the Senate. Four of these six are required to have at least ten years of investment experience. One must have at least ten years of local government financial experience. Appointed trustees serve six-year terms.

Investment Board staff are responsible for day-to-day investment decisions.

The trustees have delegated day-to-day investment management decisions to the Investment Board's professional staff, which includes the Executive Director, who is appointed by the Board of Trustees. Nearly all staff are unclassified, including 55.7 investment staff and 44.8 support staff. Investment staff are those directly involved in the investment of assets and are limited by statutes to 11 investment directors. Support staff include internal audit, legal, financial, human resources, and information technology staff. Many support staff perform duties closely related to the work of investment professionals, such as trade settlement, class action litigation, and securities lending. The Investment Board's current organization chart is included as Appendix 1.

The Investment Board underwent several management and board changes in recent years. Six of the nine trustees were newly appointed between 2003 and 2005. The current Executive Director was appointed in May 2007, after the Executive Director whose service began in December 2003 announced his retirement. A Deputy Executive Director was hired in September 2004 and a new Internal Audit Director and Chief Legal Counsel in 2005. In June 2006, the Investment Board reestablished a Chief Investment Officer (CIO) position to oversee all investment staff and provide a broader organizational view of investment strategies and risks. Previously, it had instead used three CIO positions—one each for equities, fixed-income, and private markets.

The Executive Director develops and recommends investment policies for the Board of Trustee's adoption, and each year—with advice from senior investment staff and professional consultants—submits an asset allocation plan. Assets of each of the eight funds shown in Table 3 are allocated into portfolios that include various types (or classes) of investments. The plan is submitted to the Board of Trustees for review and approval in January and is subsequently included in the Investment Board's annual report to the Legislature, as required by statute.

The Investment Board's professional investment staff research, select, buy, and sell specific investments that they expect to perform according to the strategies and policies established by the Board of Trustees. In addition, external managers are hired to invest and manage certain assets, and the Investment Board invests in index funds, such as the Russell 3000, which seeks to replicate the performance of the 3,000 largest public U.S. companies, representing about 98 percent of the U.S. equity market.

Table 3

Funds Managed by the Investment Board

Description of Fund	Value as of 12/31/2006	Primary Types (Classes) of Investments
Wisconsin Retirement System		
Core Retirement Investment Trust Fund *Fully diversified, balanced fund that finances benefits to beneficiaries*	$76,033,000,000	Equities, fixed-income, real estate, private equity, private debt
Variable Retirement Investment Trust Fund *Equity fund that finances variable benefits for those who elect to participate*	7,143,000,000	Equities
State Investment Fund		
Pool of state agency and local government cash balances	4,337,000,000[1]	U.S. Treasury securities, certificates of deposit, repurchase agreements, commercial paper
Other Funds		
Injured Patients and Families Compensation Fund *Provides medical malpractice insurance for Wisconsin's health care providers*	749,000,000	Fixed-income, equities
State Life Insurance Fund *Offers life insurance policies of up to $10,000 for Wisconsin residents who choose coverage*	80,000,000	Fixed-income
Local Government Property Insurance Fund *Provides property insurance coverage to participating local units of government*	53,000,000	Fixed-income
Historical Society Trust Fund *Includes gifts and grants made directly to the State Historical Society*	12,000,000	Equities, fixed-income
EdVest Tuition Trust Fund *Funds EdVest Wisconsin, a savings program for college expenses*	10,000,000	Fixed-income
Total	**$88,417,000,000**	

[1] Excludes retirement and other funds managed by the Investment Board that are invested in the State Investment Fund.

The Investment Board manages assets of the Wisconsin Retirement System in two funds:

The Fixed Retirement Investment Trust Fund was renamed the Core Fund in April 2006.

- The Core Retirement Investment Trust Fund, which includes a mix of several different classes of investments, provides income to support retirement benefits for Wisconsin Retirement System participants. Until April 2006, this fund was referred to as the Fixed Retirement Investment Trust Fund. At the request of the Department of Employee Trust Funds, the Legislature changed the fund's statutory name to better reflect its investment mix and diversified nature. The assets of several other employee benefit programs, which totaled $2.8 billion as of June 30, 2006, are also invested in the Core Fund. The largest of these programs is the accumulated sick leave conversion credit program. The Core Fund represented 86.0 percent of assets under the Investment Board's management at the end of 2006.

- The Variable Retirement Investment Trust Fund, for which returns are typically more volatile than the Core Fund, is almost entirely invested in equities. Approximately 20.3 percent of Wisconsin Retirement System participants had elected to place a portion of their pension accounts in the Variable Fund as of the end of 2006, when it represented 8.1 percent of assets under the Investment Board's management. As a result of enactment of 1999 Wisconsin Act 11, the Variable Fund was reopened to participants active in the system after 2000.

Investment Board trustees and staff are held by s. 25.15(2)(a), Wis. Stats., to the "prudent expert" standard of responsibility in developing and implementing investment strategies that appropriately balance risk and return. Under this standard, they are directed to manage investment assets with the care, skill, and diligence that a prudent expert would exhibit acting in a similar capacity, with similar resources, and for similar types of funds.

The Investment Board's expenses totaled $209.5 million in 2006.

The Investment Board's expenses totaled $209.5 million in 2006, which represented an increase of $67.2 million, or 47.2 percent, from 2002. As shown in Table 4, they include internal operating expenses and external investment expenses.

Table 4

Investment Board Expenses
Calendar Years 2002 through 2006
(in Millions)

	2002	2003	2004	2005	2006	Change (2002-2006)	Percentage Change
Internal Operating Expenses[1]							
Salaries and Fringe Benefits	$ 13.3	$ 13.2	$13.9	$ 15.6	$16.6	$3.3	24.8%
Supplies and Permanent Property	2.9	3.3	2.8	2.6	2.7	(0.2)	(6.9)
Internal Operating Expenses Subtotal	16.2	16.5	16.7	18.2	19.3	3.1	19.1
External Investment Expenses[2]							
Investment Manager Fees	93.6	107.1	107.8	116.2	149.8	56.2	60.0
Real Estate Advisory Fees	21.8	20.7	22.6	22.9	29.3	7.5	34.4
External Support Services	10.4	12.1	9.6	11.1	10.8	0.4	3.8
Soft Dollars[3]	0.3	0.3	0.2	0.3	0.3	0.0	0.0
External Investment Expenses Subtotal	126.1	140.2	140.2	150.5	190.2	64.1	50.8
Total	**$142.3**	**$156.7**	**$156.9**	**$168.7**	**$209.5**	**$67.2**	**47.2**

[1] Portion of expenses that are limited by appropriations of the Legislature and include personnel expenses associated with all 104.5 Investment Board staff.
[2] Portion of expenses that are directly charged against investment earnings, with the exception of soft dollars.
[3] Soft dollars are credits used to purchase research and other services in exchange for using brokers to trade securities.

Internal operating expenses include salaries and fringe benefits, supplies, and permanent property. These expenses are funded through assessments to the various funds managed by the Investment Board, as authorized by its continuing program revenue appropriation. No general purpose revenue supports Investment Board operations.

As part of 1999 Wisconsin Act 9, and as amended by 2005 Wisconsin Act 25, the Investment Board's annual internal operating budget was changed from a set dollar amount to a budget that correlates to the value of assets under management and is indexed to 0.0275 percent of assets managed, based on the average market value of assets at the end of each month from November through April of the preceding fiscal year. To protect against a significant market decline, statutes authorize a minimum annual base for the Investment Board's operating budget. The minimum base, which was originally established at $17,720,500, was recently increased to $20,352,800, beginning with fiscal year (FY) 2006-07.

The Governor's 2007-09 biennial budget proposal includes changes to the Investment Board's annual internal operating budget calculation.

The Governor's 2007-09 biennial budget proposal would make further changes to the calculation of the Investment Board's annual internal operating budget. First, it increases the indexed percentage from 0.0275 percent to 0.0325 percent. Further, it eliminates the fixed minimum annual base operating budget of $20,352,800 and instead sets the minimum annual base at the amount of the Investment Board's final operating budget in the second year of the prior fiscal biennium, which is $22,474,700 for FY 2006-07. This proposed change would raise the minimum annual base and allow it to increase as assets under management grow. The Governor's proposal has been largely unchanged and is currently pending with the Committee of Conference.

The proposed increase in its operating budget is intended to address the Investment Board's plans to increase internal management of its investments. In 2004 (report 04-13), we concluded that under the current budget limits, investment management expenses were not necessarily driven by the most cost-effective options available, and that changes to the limits may be warranted to further promote the most effective use of resources.

1999 Act 9 also provided the Investment Board increased flexibility in the operation of its incentive compensation program, which was developed and is regularly reviewed with the help of a compensation consultant. Currently, bonuses are awarded based on both quantitative and qualitative measures of performance. The Investment Board's goal is to provide compensation comparable to that of a peer group of banks, insurance companies, and internally managed corporate pension funds. East and West Coast investment professionals are excluded from this group.

Compensation for investment staff is 77.0 percent that of the Investment Board's peer group.

In January 2007, the Investment Board's total cash compensation for its investment staff was 77.0 percent that of the peer group. Salaries were 98.0 percent and bonuses 50.0 percent. Total compensation decreased from 83.0 percent of the peer group in the prior year primarily because lower amounts of incentive compensation were awarded for 2006 performance results.

90.8 percent of the Investment Board's costs are for external managers and services.

Nearly 90.8 percent of the Investment Board's costs are external investment costs. These include fees paid to external investment managers and costs for other support services, such as custodial banking services, consultant fees, electronic research services, and legal fees. As was shown in Table 4, investment manager fees increased 60.0 percent from 2002 through 2006, in large part because of an increase in the retirement fund assets. However, fees have also increased because of an increased use of external managers. The Investment Board is allowed by statute to charge these costs directly to current investment income, rather than to its program revenue appropriation. While these costs are largely unlimited, the Legislature does seek some level of accountability by requiring quarterly reports detailing investment costs. In response to concerns raised during our 2004 audit, statutory changes were made to require more complete reporting of these costs.

Statutes require the Legislative Audit Bureau to perform a biennial management audit of the Investment Board, as well as annual financial audits of its investment activities. The biennial management audit requirement, s. 25.17(51m), Wis. Stats., was implemented in 1999; this report represents our fourth management audit under this requirement. It includes a review of the Investment Board's performance in managing Wisconsin Retirement System assets and an evaluation of the private markets group, which manages the private equity, real estate, and Wisconsin private debt investments of the Core Fund. Our review focused on activities and performance in 2005 and 2006.

To conduct our evaluation, we:

- compared one-, three-, five-, and ten-year returns to performance benchmarks established by the Investment Board;
- reviewed documents pertaining to the private market group's investment holdings, strategies and plans, procedures and guidelines, and use of external consultants;
- compared the private market group's procedures against industry standards and tested certain practices and investment processes;
- interviewed Investment Board staff; and
- surveyed the managers of other large public pension funds to obtain performance data and insight into their private markets function, where applicable.

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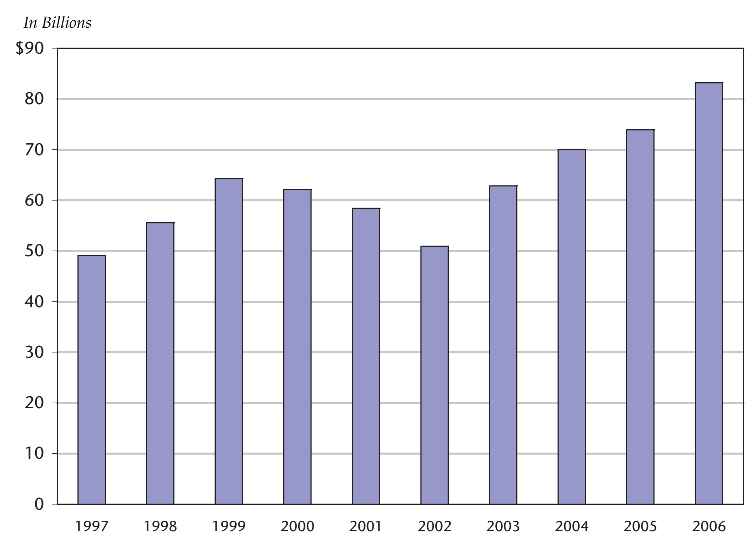
Investment Performance of the Wisconsin Retirement System ■

Wisconsin Retirement System assets have increased 69.5 percent in the last ten years.

Under the Investment Board's management, Wisconsin Retirement System assets have increased 69.5 percent from 1997, when they totaled $49.1 billion, through 2006, when they totaled $83.2 billion. Like other institutional and individual investors, the Investment Board was significantly affected by market declines from 2000 through 2002. However, as shown in Figure 1, the retirement system assets have increased steadily since 2002.

Figure 1

Wisconsin Retirement System Assets
As of December 31



Absolute growth or decline in assets does not necessarily represent how well investments are being managed or whether an effective investment strategy has been developed and implemented. In addition to market volatility, external events and factors outside the Investment Board's control can affect investment returns and the rate at which assets grow. For example, both the September 11, 2001 terrorist attacks and corporate accounting scandals significantly affected market and investment returns in 2001 and 2002.

Considering market volatility and the uncontrollable factors that affect investment returns, it can be difficult to measure an investment organization's effectiveness in managing investments under its control. To provide an overall perspective on the Investment Board's activities and decisions, we assessed the effectiveness of its management of Wisconsin Retirement System assets in two ways. First, we compared the one-, three-, five-, and ten-year returns it achieved for the Wisconsin Retirement System to the performance benchmarks established by the Board of Trustees. This comparison illustrates how well the Investment Board has performed in relation to the market but provides only a partial view of the effectiveness of its overall investment strategies. Therefore, we also compared the Core Fund's performance to the performance of other public pension funds.

Investment Goals and Strategies

The basic investment objective of the Wisconsin Retirement System is long-term earnings.

The basic investment objective of the Wisconsin Retirement System is to provide earnings that, along with contributions from employers and participants, will be sufficient for the system to pay projected pension benefits over time. From 1992 through 2003, the actuarial assumption for the Core Fund was an annual average return of 8.0 percent over the long term. That is the long-term rate the actuary expects will be earned based on a mix of assets similar to that of the Core Fund. At the end of 2003, the actuary recommended a reduction in its investment expectation to 7.8 percent, based on slightly lower long-term market expectations of investment professionals and advisors.

The Variable Fund was established to provide a retirement option for Wisconsin Retirement System participants who were interested in taking a higher degree of risk by increasing their investment in equities for the potential of greater long-term returns. The investment goal for the Variable Fund is to exceed similar equity portfolios over a full market cycle. A goal for both funds is to exceed performance benchmarks established by the Board of Trustees, which reflect the performance of general market indices.

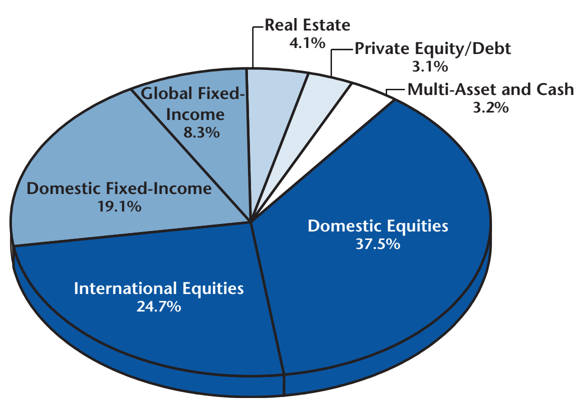
To achieve these goals, the Investment Board has established an investment strategy for both the Core Fund and the Variable Fund, which it refines each year within the general investment policies and restrictions set forth in ch. 25, Wis. Stats. As part of this process, the Board of Trustees, the Executive Director, and senior investment staff make several key decisions. One of the most critical involves allocating assets among various investment classes and portfolios. Some pension experts believe that up to 90 percent of the variation in performance among investment entities is the result of overall investment or asset allocation decisions, not the selection of individual investments. Decisions for the Core Fund require more research and analysis, since the Variable Fund's allocation is primarily domestic and international equities.

Composition of Core Fund

As shown in Figure 2, the Core Fund's assets are allocated and diversified among a wide variety of domestic and international investment classes, including stocks and other equity investments, bonds and other fixed-income securities, real estate, private equity and debt, and other investments. In contrast, the Variable Fund's asset mix as of December 31, 2006, included 74.0 percent domestic equities, 22.2 percent international equities, and 3.8 percent cash and liquidity index funds. Appendix 2 provides a summary of the asset allocations for the Core Fund and Variable Fund over the past five years.

Figure 2

Asset Allocation for the Core Fund
As of December 31, 2006



Domestic equities represent the largest asset class for the Core Fund.

Approximately 62.2 percent of the Core Fund's assets were invested in domestic and international equities as of December 31, 2006:

- **Domestic equities**, which are the common stock of U.S. companies, constitute the largest asset class and accounted for $28.5 billion, or 37.5 percent, of the Core Fund's $76.0 billion in assets at the end of 2006. Domestic equities were managed through 15 portfolios that were diversified among small, medium, and large companies.

- **International equities** primarily include stock of companies in developed countries. Approximately 10.3 percent of the $18.7 billion international equities allocation as of December 31, 2006—$1.9 billion—was invested in emerging markets, a category of international investments that focuses on countries with developing economies in Asia, Eastern Europe, and Latin America.

Domestic and global fixed-income investments accounted for 27.4 percent of the Core Fund's assets at the end of 2006:

- Approximately $14.5 billion was invested in **domestic fixed-income securities**, which include $11.9 billion of U.S. government bonds and investment grade corporate bonds purchased in public markets. Another $2.0 billion was invested in Treasury Inflation Protection Securities, in which the Investment Board significantly increased its investment during 2004 as a hedge against inflation. A small portion of the domestic fixed-income asset class, $650 million, was invested in high-yield investments, which carry a greater risk of default but offer higher rates of return than investment-grade securities.

- The Core Fund's **global fixed-income investments** at the end of 2006 included $4.8 billion in global bond portfolios that encompass both U.S. and foreign debt obligations. The Investment Board also invested $615 million in fixed-income securities in emerging markets and $877 million in high-yield fixed-income securities that may include investments in emerging markets.

Real estate investments, which accounted for $3.2 billion, or 4.1 percent, of the Core Fund's assets at the end of 2006, include office buildings, multi-family properties, warehouses, and other real estate owned directly by the Investment Board; investments in joint ventures and partnerships that acquire and manage real estate investments; investments in publicly traded real estate investment trusts (REITs); and private commercial real estate mortgages. The Investment Board's real estate investments include domestic and international holdings in countries such as Germany, Japan, and South Korea.

Private equity and private debt investments accounted for $2.3 billion, or 3.1 percent, of the Core Fund's assets at the end of 2006. These investments, which include leveraged buyouts, venture capital, and privately negotiated loans, often offer the prospect of greater returns, but they also bear increased risk of underperformance. Two of the portfolios, which totaled $425 million at the end of 2006, focus on Wisconsin companies.

The remaining investment types include an $845 million multi-asset portfolio, $385 million in liquidity index funds, and $1.2 billion in cash, which collectively accounted for 3.2 percent of the Core Fund's assets at the end of 2006:

- The **multi-asset portfolio** invests primarily in equity and debt securities in developed and emerging markets, but it also may invest in real estate, natural resources, private equity, and money market instruments.

- **Liquidity index portfolios** were created in 2004 to simplify the internal processes for funding retirement benefits and making asset allocation changes while still earning returns consistent with the major equity and fixed-income indices.

- The **cash** on hand consists of temporary balances awaiting permanent investments and was invested in short- and intermediate-term obligations of the U.S. government and its agencies, as well as high-quality commercial bank and corporate debt obligations.

Investment Strategy Decisions

Diversification among different investment classes is important to asset allocation.

Determining an appropriate asset allocation for a pension fund includes balancing risks with expected returns. Certain investment classes entail greater degrees of both risk and expected return. Others entail less risk but have correspondingly lower expected rates of return. An important principle of successful asset allocation is diversification, which limits exposure to the risks associated with any particular investment class. Because the various investment classes may react differently to changes in the business cycle, inflation rates, and foreign exchange rates, diversifying a fund across several investment classes can add value by reducing risk and stabilizing the rate of return.

A second key investment management decision is whether to actively or passively manage investments. **Active portfolio management** seeks to increase investment returns by selecting individual investments on a company-by-company basis, without attempting to match the mix represented in the market as a whole. **Passive management** seeks to replicate a market index and to match its returns. The benefits of a passively managed portfolio are that it will likely perform as well as the index it is designed to mimic, and it will cost less to administer because little company-specific investment research is needed. Actively managed portfolios, on the other hand, may provide additional value by outperforming the market, but they also carry the risk of potentially earning less than passively managed portfolios, and at a higher cost.

At the end of 2006, 55.6 percent of the Core Fund's assets were in passive index or quantitative fund investments.

In 1998, the Investment Board began using **quantitative strategies,** which are a blend of active and passive management strategies. Like passive index funds, quantitative funds aim to track an index, but they also attempt to earn excess returns using quantitative analyses. Fees for quantitative funds are significantly greater than those for passive index funds but typically less than active management fees. At the end of 2006, 29.1 percent of the Core Fund’s assets were in passive index funds, 26.5 percent were in quantitative funds, and 44.4 percent were actively managed by either the Investment Board or its external managers.

A third key investment management decision is whether to use Investment Board staff to make investment decisions and execute security trades, or to hire external managers to perform these functions. External managers can provide expertise not available from internal staff, or they can supplement internal staff resources. However, costs for external management typically exceed those for internally managed funds. Also, external management can decrease control and may decrease oversight in individual investment decisions.

The Legislature increased the external management limit from 15.0 percent to 20.0 percent in 2005.

The Legislature has established a statutory limit on the percentage of assets that may be externally managed. As part of 2005 Act 25, the external management limit was increased from 15.0 percent to 20.0 percent of each of the retirement funds. In response to confusion about the types of external investments that fell under this limit, Act 25 clarified that it does not apply to commingled investment instruments, such as index funds or private equity and real estate partnership funds, based on the premise that the Investment Board does not hold title to the underlying investments.

At the end of 2006, 20.5 percent of the Core Fund's investments were internally managed by the Investment Board.

At the end of 2006, 15.5 percent of the retirement assets were in investments to which the external management limit applied, 20.5 percent were managed internally, and 64.0 percent were in externally managed commingled accounts. As shown in Table 5, there has been a substantial shift toward externally managed investments in recent years. Between 2003 and 2006, allocations to each of the Investment Board's types of external investment strategies have increased, resulting in an overall increase of 65.7 percent in externally managed assets over this three-year period. Correspondingly, internally managed assets have decreased by $5.9 billion, or 25.6 percent, from their 2003 levels.

Table 5

Changes in Retirement Fund Assets Managed Using Internal and External Resources

	December 31, 2003		December 31, 2006		Three-Year Change	
Investment Strategy	Assets (in millions)	Percentage	Assets (in millions)	Percentage	Assets (in millions)	Percentage
External Actively Managed Assets	$ 6,338	10.1%	$12,912	15.5%	$6,574	103.7%
External Commingled Assets						
Passive Index Funds	16,581	26.4	24,199	29.1	7,618	45.9
Quantitative Funds	13,449	21.4	22,045	26.5	8,596	63.9
Limited Partnerships	2,702	4.3	3,990	4.8	1,288	47.7
Other Commingled Accounts	836	1.3	2,966	3.6	2,130	254.8
Subtotal—External Commingled Assets	33,568	53.4	53,200	64.0	19,632	58.5
Total External Assets	39,906	63.5	66,112	79.5	26,206	65.7
Internal Assets	22,923	36.5	17,064	20.5	(5,859)	(25.6)
Total	**$62,829**	**100.0%**	**$83,176**	**100.0%**	**$20,347**	**32.4%**

Recently, the Investment Board has begun exploring ways to again manage more of these investments internally. For instance, in February 2006 it established an internal global fixed-income index portfolio, which totaled $105.6 million at the end of 2006. It is also considering the merits of creating an internal large cap index portfolio by transferring the assets from an external large cap index portfolio, which totaled $11.9 billion at the end of 2006.

Performance Compared to Benchmarks

Both the Core and the Variable funds earned double-digit investment returns in the late 1990s, as shown in Table 6. However, a market downturn beginning in the second half of 2000 resulted in negative returns for both funds from 2000 through 2002. A rebound in the markets during 2003 returned the funds to double-digit annual returns that were among the highest in the last 20 years.

Table 6

Wisconsin Retirement System Annual Returns
For Years Ending December 31, 1997-2006

Year	Core Fund	Variable Fund
1997	17.2%	21.6%
1998	14.6	17.5
1999	15.7	27.8
2000	(0.8)	(7.2)
2001	(2.3)	(8.3)
2002	(8.8)	(21.9)
2003	24.2	32.7
2004	12.8	12.7
2005	8.6	8.3
2006	15.8	17.6

The Core Fund met or exceeded all of its benchmarks at the end of 2005 and 2006; the Variable Fund did at the end of 2005, but not 2006.

Through 2006, the Investment Board continued to exceed the actuary's investment expectation for the Core Fund, which, as noted, is currently an annual average return of 7.8 percent over the long term. The ten-year average annual rate of return for the Core Fund was 9.2 percent at the end of 2006. The Variable Fund provided a somewhat smaller ten-year average annual return of 8.7 percent at the end of 2006. Furthermore, as shown in Table 7, both retirement funds met or outperformed their one-, three-, five-, and ten-year benchmarks during 2005. These benchmarks represent the market-based returns the Investment Board attempts to exceed. During 2006, the Core Fund continued to exceed all of its benchmarks; however, the Variable Fund lagged its three- and five-year benchmarks.

Table 7

Wisconsin Retirement System Performance
For Periods Ending December 31, 2005 and 2006

	Core Fund		Variable Fund	
Period Ending December 31, 2005	Average Annual Rate of Return	Investment Benchmark	Average Annual Rate of Return	Investment Benchmark
1-year	8.6%	7.9%	8.3%	8.0%
3-year	15.0	14.0	17.4	17.4
5-year	6.3	5.3	3.0	2.5
10-year	9.1	8.3	9.0	8.0

	Core Fund		Variable Fund	
Period Ending December 31, 2006	Average Annual Rate of Return	Investment Benchmark	Average Annual Rate of Return	Investment Benchmark
1-year	15.8%	14.6%	17.6%	17.6%
3-year	12.3	11.4	12.8	12.9
5-year	9.9	9.5	8.3	8.8
10-year	9.2	8.6	8.7	8.0

Appendix 3 compares the performance of each investment class to benchmarks for one-, three-, five-, and ten-year periods ending December 31, 2006.

The Investment Board establishes benchmarks for each of its investment portfolios, as well as for asset classes and the Core and Variable funds overall. Typically, the portfolio benchmarks are based on market indices. For example, the benchmark for the large cap portfolios, which are domestic equities portfolios that include stocks of companies generally valued at more than $5.0 billion, is the S&P 500 Index, which measures the performance of large domestic companies. The overall benchmarks for the Core and Variable funds are composites of the underlying portfolio benchmarks. Each of the benchmarks is approved each year by the Board of Trustees.

Real estate and private equity were strong performing asset classes in 2005 and 2006.

Two of the asset classes that contributed to the Investment Board's success in outperforming its benchmarks in the Core Fund were real estate and private equity, both of which exceeded their benchmarks for all four time periods ending December 31, 2005. Real estate provided a one-year return of 28.2 percent, compared to a benchmark of 19.2 percent. The success in real estate is attributable to realization of investment gains, including strong returns from some international investments. Even more notable was the 44.2 percent return from the private equity investments during 2005, compared to a benchmark of 30.4 percent. The successful sale of several mature private equity investments in 2005 contributed significantly to the favorable performance of this asset class. Real estate and private equity continued to be two of the Investment Board's stronger performing asset classes in 2006, with a one-year return of 30.1 percent for real estate, compared to a benchmark of 17.6 percent, and 28.7 percent for private equity, compared to a benchmark of 20.3 percent.

Emerging market equities provided an average annual return of 38.8 percent from June 30, 2003 through December 31, 2006.

The Investment Board's international equity investments also outperformed all of their benchmarks at the end of 2005 and 2006. International equities provided an annual return of 16.9 percent, compared to a benchmark of 16.0 percent during 2005, and 27.7 percent compared to a benchmark of 26.4 percent during 2006. The Investment Board also benefited from its decisions in recent years to again invest in emerging market equities, which provided an average annual return of 38.8 percent for the period from June 30, 2003, when the current emerging market portfolios were established, through December 31, 2006. The benchmark for this three-and-one-half year period was 36.7 percent.

Two internally managed large cap portfolios missed their one-year benchmarks for three straight years.

While international equity investments have performed well in recent years, the Investment Board's domestic equities missed one-, three-, and five-year benchmarks at the end of 2006 and provided a five-year return of 6.5 percent, compared to a benchmark of 7.2 percent. Among the more notable underperforming portfolios were some of the internally managed domestic equity portfolios. After the internal mid cap equity portfolio trailed its benchmarks for all periods ending December 31, 2004, the Investment Board decided to close it and use the assets to open a third internal large cap portfolio at the end of 2005. However, in 2005 the Investment Board's other two internal large cap portfolios also underperformed most of their benchmarks. The portfolios reported one-year returns of 1.7 percent and 2.8 percent during 2005, compared to each one's benchmark of 4.9 percent. Both portfolios also did not meet their one-year benchmarks during 2003 and 2004. The portfolios were reduced by almost $4.0 billion through the first half of 2006 as part of a reallocation process, and they totaled a combined $3.9 billion at the end of 2006.

Investment Board management closely monitored the performance of these two large cap portfolios during 2006 and took steps to address concerns under an internal performance assessment process adopted in April 2003. During 2006, both of the large cap portfolio managers worked with an internal advisory support group, which included members of senior management, to help improve the portfolios' performance. At the end of 2006, both portfolios' performance had improved, with one-year returns of 18.4 percent and 16.1 percent, compared to each one's benchmark of 15.8 percent.

The Investment Board is currently undertaking a major reorganization of its large cap portfolios.

In late 2006, in response to an internal review of its equity division and the work of an external consultant, the Investment Board also began a strategic reorganization of its large cap portfolios that is expected to last into 2008. The goal of this multi-phase plan is to improve overall performance and consistency of returns. The initial phase involves combining assets of the three large cap portfolios and then, from this one large cap portfolio, creating sector portfolios that will each focus on one of the ten market sectors, such as consumer staples or technology. Another phase will involve a "global sector" approach that will merge the international and domestic large cap portfolios and allow staff to cover both a domestic and a corresponding international market sector.

While partial implementation of this plan has already begun with existing resources, the Investment Board indicates that full implementation will require enactment of the proposed changes to the calculation of the Investment Board's annual internal operating budget that were included in the Governor's 2007-09 Biennial Budget Proposal, as well as the approval of additional positions it intends to seek from the Joint Committee on Finance under s. 16.505, Wis. Stats. The June 2007 resignation of the managing director for public equities may also present challenges in fully implementing this reorganization.

The Investment Board terminated an externally managed portfolio in early 2007 for underperformance.

Some of the Investment Board's externally managed equity portfolios also have underperformed in recent years. At the end of 2006, 5 of the 17 active or enhanced external equity portfolios were on the Investment Board's review list because of performance issues. In early 2007, the Investment Board terminated one of the underperforming portfolios. Another was removed from the review list as the Investment Board believes its performance will improve in 2007. The Investment Board also hired an outside consultant in July 2006, at an annual cost of $185,000 per year, to monitor performance and provide written quarterly performance analyses of its external equity portfolio managers.

Comparison to Other Public Pension Funds

Comparing the Core Fund's performance to that of other public pension funds provides one perspective for assessing the relative effectiveness of the Investment Board's overall investment strategy and asset allocation decisions. However, in making such comparisons, the possible effect that different liability streams, asset mixes, investment styles, tolerable risk levels, and statutory or other restrictions on allowable investments can have on performance should also be kept in mind. Furthermore, the equities option that Wisconsin offers its retirement system participants through the Variable Fund appears to be unique among public pension funds and, therefore, can affect comparisons.

The Core Fund's five-year average annual returns ranked fifth among ten public pension funds surveyed.

Average annual investment returns for the Core Fund and nine other public pension funds for periods ending December 31, 2006, are shown in Table 8. The Investment Board focuses primarily on the five-year return in assessing its management strategies for the Core Fund and in determining staff incentive compensation awards. The Core Fund's five-year average annual returns ranked fifth among the ten funds surveyed, which is a decrease from the number-one ranking reported in our 2004 audit.

Similarly, the Core Fund ranked in the middle of the ten pension funds for the other return periods. In the case of the ten-year return, the rankings are relatively close among the first nine rankings, and the Core Fund ranked sixth. On a longer-term basis, the Core Fund has maintained a relatively solid ranking. However, in the case of the one- and three-year rankings, in which the Core Fund ranked fifth and sixth, the variations among returns are more significant.

Table 8

Comparison of Pension Funds' Overall Average Annual Rates of Return
For Periods Ending December 31, 2006

	Five-Year		One-Year		Three-Year		Ten-Year	
Pension Fund	Return	Rank	Return	Rank	Return	Rank	Return	Rank
Wisconsin Investment Board Core Fund	**9.9%**	**5**	**15.8%**	**5**	**12.3%**	**6**	**9.2%**	**6**
Pennsylvania Public School Employees' Retirement System	11.7	1	18.3	1	15.0	1	9.9	1
Washington State Investment Board[1]	11.0	2	17.9	2	15.0	1	9.8	2
California Public Employees Retirement System	10.2	3	15.7	6	13.3	3	9.5	4
Virginia Retirement System[1]	10.1	4	16.2	4	13.2	4	9.6	3
New York State Teachers Retirement System[1]	9.6	6	16.3	3	12.5	5	9.3	5
Minnesota State Board[1]	9.0	7	14.6	7	12.3	6	8.8	9
Teachers Retirement System of Texas	8.8	8	13.8	10	11.0	9	8.9	7
Florida State Board	8.7	9	14.6	7	11.4	8	8.9	7
New Jersey Division of Investments	7.8	10	13.9	9	10.4	10	7.2	10

[1] Returns shown are net of costs because gross returns were not available. Gross returns are shown for the other retirement systems.

While we did not fully research the reasons for the Investment Board's middle rankings, one contributing factor may be its lower allocations to private equity and real estate than those of the four top-performing funds. Both of these asset classes have recently experienced strong returns, especially from 2004 through 2006. Based upon information reported in an industry periodical, *Pension & Investments*, the Core Fund ranked eighth of the ten funds in terms of its proportionate allocation to private equity and real estate as of September 30, 2005 and 2006.

Top-performing funds had larger allocations of private equity and real estate investments in 2005 and 2006.

As of September 30, 2006, the Investment Board had allocated 6.2 percent, or $4.5 billion, of the Core Fund's assets to these asset classes, compared to an average of 10.4 percent for the ten funds. The Washington State Investment Board proportionately ranked first, with an allocation of $14.5 billion, or 27.6 percent. The Pennsylvania Public School Employees' Retirement System ranked second with an allocation of $9.0 billion, or 15.3 percent. The returns for both of these funds ranked first and second for all four periods. The overall underperformance of the Investment Board's domestic equities also likely contributed to its lower rankings during these periods.

Allocation and Investment Decisions for the Variable Fund

Based on our review of investment performance, we believe the Investment Board needs to re-evaluate its policy and procedures for making allocation and investment decisions related to the Variable Fund. For several years, the Investment Board's policy was that the Variable Fund's equity investments proportionately mirrored those of the Core Fund. However, since 2000, decisions made by the Investment Board have moved the Variable Fund's allocation away from a proportionate mix of equity investments.

At the end of 2006, the Wisconsin Retirement System's equity portfolios totaled $54.1 billion, of which $6.9 billion, or 12.7 percent, was allocated to the Variable Fund. The remaining $47.2 billion, or 87.3 percent, was allocated to the Core Fund. If the Investment Board had been maintaining a proportionate mix of equity investments, each retirement fund would have had a comparable portion of each of the Investment Board's 28 equity portfolios.

The two retirement funds have varied proportions of the different equity portfolios.

However, each fund's share of each of the different equity portfolios varied. At the end of 2006, 20.0 percent of each of the seven internally managed equity portfolios was allocated to the Variable Fund, and 80.0 percent was allocated to the Core Fund, as directed by Investment Board policy. In the case of the 21 externally managed equity portfolios, the Variable Fund's share ranged from 5.0 percent to 71.0 percent, while the Core Fund's share ranged from 29.0 percent to 95.0 percent.

One key strategic decision was to include less exposure to international equities in the Variable Fund.

The different proportions of equity portfolios in the two retirement funds result from various allocation and strategic decisions made by the Investment Board. One key strategic decision was to include less exposure to international equities in the Variable Fund, to help temper that fund's potential volatility. At the end of 2006, 23.1 percent of the Variable Fund's equity investments were in international investments, compared to 39.7 percent of the Core Fund's equity investments. As noted, international equity investments have provided strong returns in recent years and returned an average of 17.3 percent, compared to domestic equity returns of 6.5 percent, from 2002 through 2006.

The Investment Board also made different allocation decisions when changes in portfolios have occurred. For instance, in January 2006, it moved $1.7 billion from two internal domestic equity portfolios in the Core Fund to selected fixed-income portfolios as part of an internal rebalancing process. However, because the internal domestic equity portfolios utilize an 80/20 split between the Core Fund and the Variable Fund, a $425 million move was also triggered from the Variable Fund, and most of the funds were transferred to one externally managed large cap portfolio. As a result of the Variable Fund move, 71.0 percent of this externally managed large cap portfolio consisted of Variable Fund assets at the end of 2006.

The Variable Fund's performance lags the composite performance of all of the equity portfolios.

These allocation and investment decisions have affected the Variable Fund's performance. As shown in Table 9, the Variable Fund's performance has been less than the composite performance of all of the retirement funds' equity portfolios for all periods ending December 31, 2006. Consequently, we believe the Investment Board needs to ensure that allocation and investment decisions affecting the Variable Fund are having their intended effect.

Table 9

Performance Comparison between All Equity Portfolios and the Variable Fund
For the Period Ending December 31, 2006

	All Equity Portfolios[1]		Variable Fund	
	Average Annual Rate of Return	Investment Benchmark	Average Annual Rate of Return	Investment Benchmark
1-year	19.3%	19.5%	17.6%	17.6%
3-year	14.4	14.4	12.8	12.9
5-year	9.8	9.9	8.3	8.8
10-year	9.5	8.4	8.7	8.0

[1] Represents combined returns for all of the Core and Variable Fund equity investments.

☑ Recommendation

We recommend the State of Wisconsin Investment Board re-evaluate its policies and procedures for making allocation and investment decisions that affect the Variable Fund.

■ ■ ■ ■

Private Markets Investments ■

Private markets investments, which include real estate, private equity, and private debt, serve an important role in the Investment Board's investment strategy. Because they are typically less liquid, relatively longer-term, and at times more opportunistic than publicly traded investments, they can offer the potential for higher returns. Further, because their performance is often not correlated to the public markets, they can serve to further diversify the Core Fund's holdings. However, private markets investments also can involve higher volatility and greater risks and costs, and therefore they require well thought-out strategies, policies, and controls.

The Investment Board has encountered difficulties in the management of some of its private markets investments in past years because it did not have an adequate structure, resources, and controls in place to support their success. After taking several steps to address past concerns, it has achieved solid returns in its private markets investments, but it faces continuing challenges to maintain this success into the future.

History of Private Markets Group

Approximately 7.2 percent of the Core Portfolio was invested in private markets investments at the end of 2006.

The Investment Board has been making private markets investments since the 1960s, when it first began investing in private debt by providing privately negotiated loans to companies. At the end of 2006, its private markets investments totaled $5.5 billion and represented 7.2 percent of the Core Fund's assets. Included in that total were:

- $3.2 billion in real estate portfolios, which include investments in real estate as a sole owner or in joint ventures and partnerships, as well as commercial mortgages and publicly traded shares in REITs, which are companies that invest in a group of real estate investments. The Investment Board began investing in real estate in 1977.

- $1.9 billion in private equity, which consists of equity investments in companies whose stock is not registered with the Securities and Exchange Commission and available to the general public. The Investment Board's private equity largely includes leveraged buyout and venture capital investments. A leveraged buyout involves the acquisition of a company using a significant amount of borrowed funds. Venture capital provides funding for start-up and newer businesses perceived to have good growth potential, but without ready access to capital markets. The Investment Board began investing in private equity in 1985. Its investments are now largely through funds and partnerships, rather than direct ownership.

- $0.4 billion in private debt and equity investments, primarily in Wisconsin companies. The Investment Board began to officially track Wisconsin debt investments in 1983 and opened a portfolio for Wisconsin private equity investments in 2000.

In 2001, several concerns were identified with the investment and management of private equity investments. In response, the Investment Board undertook several different changes to the management not only of private equity investments, but also of real estate and private debt investments. The most significant of these changes was the establishment of the private markets group to oversee all private markets investments.

Prior Concerns and Recommendations

Our 2001 management audit (report 01-18) noted several concerns with the Investment Board's opportunity portfolio, which was a higher-risk portfolio that focused on private equity investments in emerging markets in Asia and Eastern Europe. They included:

Our 2001 audit found several concerns with the Investment Board's higher risk opportunity portfolio.

- a failure to meet performance benchmarks;
- troubled South Korean investments;
- lack of a clear due-diligence process and documentation standards;
- adequacy of staff resources and skills to manage the portfolio's complex and higher-risk strategies; and
- limited management oversight.

A management consulting firm offered several additional recommendations to improve investment strategies for private markets.

In October 2001, as we completed our audit work, the Investment Board hired a management consulting firm, McKinsey & Company, to refine its strategies for private equity and real estate investments and identify key changes in organization and governance that would enable their successful implementation. A December 2001 report by McKinsey included several additional recommendations to improve investment strategies for private markets.

McKinsey supported continued commitment to private markets investments but identified steps for the Investment Board to take in refocusing its strategies for these investments. Further, McKinsey noted that the Investment Board's investment guidelines and its organizational structure required modification that would reinforce the risk management process and provide an enhanced level of oversight for investment decisions.

Organizationally, McKinsey recommended consolidation of the Investment Board's private equity portfolios to better ensure a consistent and cohesive private equity investment strategy and to best utilize staffing resources. To enhance risk management and oversight, McKinsey recommended that the Investment Board:

- modify its guidelines for approving private equity and real estate investments, and transfer most investment approvals from the Board to the staff and an internal staff investment committee based on various thresholds;
- enhance due-diligence standards; and
- implement a standard performance tracking and reporting system.

The private markets group was established in 2003 to manage private equity, real estate, and Wisconsin private investments.

The Investment Board undertook several organizational, staffing, and strategy changes to implement the recommendations from our audit and the McKinsey report. Many of these changes are summarized in Table 10. They include two major restructurings of private markets investments. First, in January 2002, the Investment Board combined all of its private equity portfolios and staff into an alternative investments area, under the direction of one managing director. Then, in September 2003, it further consolidated private markets investing activities by establishing the private markets group to oversee private equity, real estate, and Wisconsin private investments.

Table 10

Time Line for Transition to Current Private Markets Group

Date	Events
January 2002	Moved the private equity, opportunity, and Wisconsin private debt and equity portfolios into an alternative investment area, under one managing director. Updated charter for risk and investment committee and investment guidelines to incorporate recommendations.
March 2002	Established one portfolio for future private equity investments, retained the opportunity portfolio, and established two transition portfolios from existing private equity portfolios. Maintained separate Wisconsin private debt and equity portfolios.
July 2002	Managing director for alternative investments retired.
January 2003	Hired new managing director for alternative investments.
September 2003	Restructured and merged private equity, Wisconsin portfolios, and real estate into the private markets group. A CIO and a managing director for the private markets group were promoted from the real estate area. Managing director for alternative investments resigned after nine months. One of the long-term private equity portfolio managers also resigned.
March 2004	Merged four private equity/opportunity portfolios into two portfolios—an ongoing portfolio and a transition (legacy) portfolio. Divided existing real estate portfolio into three portfolios—one focusing on fund/pooled investments; the second on separate accounts, joint ventures, and partnerships; and the third as a transition portfolio.
October 2004	Hired consulting firm, Hamilton Lane, to assist in identifying, evaluating, and monitoring private equity investments.
June 2005	Private equity portfolio manager resigned.
October and December 2005	Hired new portfolio manager and assistant portfolio manager for private equity.
September 2006	CIO for the private markets group retired. Retained managing director as head of private markets group.
December 2006	Private equity portfolio manager resigned. Assistant portfolio manager promoted.

Staffing Issues

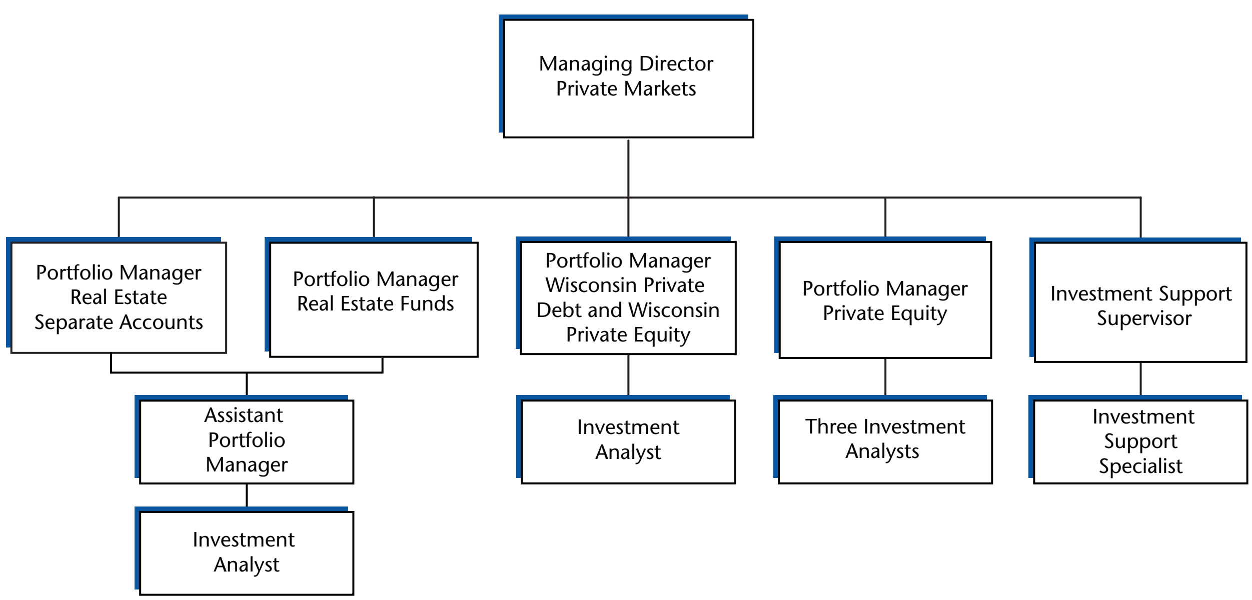
The 2003 restructuring was, in part, driven by changes in staffing. The managing director for alternative investments retired in July 2002, and the Investment Board hired a new managing director in January 2003. Nine months later, the Executive Director created the private markets group and promoted the managing director of real estate to be its chief investment officer. However, shortly after this change, both the managing director of alternative investments and a long-term private equity portfolio manager resigned.

Several key private equity staff have resigned in recent years.

Since the creation of the private markets group, turnover of key staff has continued, including the resignation of one private equity portfolio manager in June 2005 and another in December 2006, after only one year on the job. At the end of 2006, only two investment staff associated with non-Wisconsin private equity portfolios before 2003 remained on the Investment Board's staff. The loss of key staff contributed to a loss of historical knowledge and continuity of investment strategies for the private equity investments, many of which have a long-term horizon. Figure 3 presents the private market group's organizational chart as of April 2007.

Figure 3

Private Markets Group Organization Chart
As of April 2007



In contrast, the Investment Board has maintained continuity and experience with its real estate investment staff. The two current portfolio managers each have more than 20 years of real estate experience with the Investment Board.

Learning from the challenges presented by the turnover of private equity staff, the Investment Board has taken steps to better ensure program continuity and a transfer of knowledge when turnover occurs. One key step has been contracting with a private equity advisor to support critical investment and monitoring functions. The Investment Board has also worked with the advisor to create a comprehensive set of data on its private equity investments.

Transition Portfolios

Transition portfolios were established as the Investment Board made staffing and strategic changes for its private markets investments.

As the Investment Board undertook staffing and strategic changes with its private markets investments, certain "transition" or "legacy" portfolios were established in response to staff concerns that their performance and, correspondingly, their bonuses not be directly based on the investments made by other staff. An experienced staff person was assigned to manage the liquidation and oversight of investments in the transition portfolio for private equities, known as the private equity legacy portfolio, while the two current real estate portfolio managers share responsibility for the real estate transition portfolio.

At the end of 2006, the private equity legacy portfolio totaled $901.0 million and represented 45.1 percent of private equity's market value, down from 66.7 percent at the end of 2005. The real estate transition portfolio represented $518.5 million, or 16.5 percent, of real estate's market value at the end of 2006, down from 26.0 percent at the end of 2005.

To maintain attention on the transition portfolios, the Investment Board has based staff bonuses on their management and performance. Performance bonuses for the manager of the private equity legacy portfolio were based entirely on a qualitative assessment of his efforts to liquidate that portfolio and maximize returns. Qualitative measures of the performance of the real estate transition portfolio affect a portion of the bonuses of its two managers, and bonuses of the former CIO and current managing director who approved the investments for the private markets group have also been linked to the successful management and liquidation of these portfolios.

A large real estate investment trust has contributed significantly to the real estate transition portfolio's performance.

The Investment Board also needs to ensure that staff cannot influence their bonuses by placing investments in the transition or legacy portfolios. The real estate portfolio managers placed in the transition portfolio a REIT investment that represented 39.6 percent of the transition portfolio's total value at the end of 2005, and 56.2 percent at the end of 2006. This investment, which has been a strong performer since its inception in 1997, contributed significantly to the ability of the transition portfolio to meet its benchmarks at the end of 2005 and 2006. Without the REIT investment, the transition portfolio would not have exceeded its one-year benchmark in 2005. While the transition portfolio's performance did not quantitatively affect the calculation of performance bonuses, its success was considered from a qualitative perspective.

The real estate portfolio managers planned to retain this investment, but it was not placed in their other real estate portfolios after they were separately established in 2004 because of its size and because of concerns about the effect of its potential volatility on returns, which is one of the key factors affecting the calculation of staff performance bonuses. The Investment Board recently approved an internal staff proposal to transfer this investment to the real estate separate accounts portfolio, effective October 1, 2007, at its fair market value. Part of the rationale for a transfer at this time is that the strategy of the REIT has changed. In addition, because the size of the separate accounts portfolio has increased considerably in the past three years, this investment will now represent a smaller proportion of that portfolio.

We recognize the rationale and need for transition portfolios when the Investment Board undertakes major changes in organizational structure and investment strategies. However, it is important to ensure they do not allow staff to unduly influence performance bonuses.

☑ Recommendation

We recommend the State of Wisconsin Investment Board review closely the process of and decisions made by investment staff in the placement of investments into transition portfolios.

Decreased Presence in Private Equity Markets

During the transition period in which the Investment Board focused on addressing past concerns, the number of new private equity investments decreased significantly. Table 11 shows its capital commitments over the past ten years. A capital commitment is the maximum amount of money the Investment Board has committed to contribute to a particular investment. Only $191.6 million was committed to six private equity investments in 2003, and $100.0 million to two investments in 2004.

Table 11

Capital Commitments[1] for Non-Wisconsin Private Equity Investments

Year	Number	Total Dollar Amount	Average Dollar Amount
1997	11	$222,620,571	$20,238,234
1998	18	508,534,461	28,251,915
1999	23	686,506,063	29,848,090
2000	22	845,891,611	38,449,619
2001	15	525,786,469	35,052,431
2002	11	261,375,937	23,761,449
2003	6	191,600,017	31,933,336
2004	2	100,000,000	50,000,000
2005	10	959,560,317	95,956,032
2006	21	1,630,826,225	77,658,392

[1] A capital commitment is the maximum amount of money the Investment Board has committed to contribute over a specified period of time for a particular investment.

Because of a decreased presence in the markets during the transition period, the Investment Board potentially missed strong years for private equity investments. Its private equity advising firm reported that 2002 and 2003 were among the best performing "vintage years" since 1985. A vintage year represents the first year in which partners are required to begin making cash contributions to the partnership or fund.

The Investment Board significantly increased its private equity investments during 2005 and 2006.

Further, a decreased presence increased the difficulty of making new private equity investments, which involves establishing and maintaining relationships with general partners who choose investors for their private equity partnerships and funds. The private markets group has therefore needed to increase efforts to establish new relationships and re-establish prior relationships with general partners during 2005 and 2006. For example, during the first three quarters of 2006, private equity staff met with 154 general partners. As a result of recent efforts, the Investment Board has significantly increased its private equity investments and committed nearly $2.6 billion in 2005 and 2006.

Management Improvements

Through the transition period, the Investment Board has made policy and procedural changes to improve the management of its private markets investments. Among the most significant are strategic changes that have helped reduce the level of risk associated with its private equity investments, improved due-diligence procedures, and increased monitoring efforts.

Strategic Changes

The Investment Board invests in private equity primarily through limited partnerships and funds.

The Investment Board has undertaken three strategic changes that help to limit risk with private equity investments. First, it has largely discontinued acquiring direct ownership interests in private companies and, since 2002, has primarily made indirect investments in private equity through limited partnerships and funds. In 2001, we noted reservations about its use of strategic partnering relationships involving direct acquisition of majority or minority equity stakes in companies with a partner who acted as the investment manager.

Strategic partnering relationships avoided some costly management fees and allowed for more direct involvement in investment decisions, but they also represented higher risks and provided fewer protections than participation in a limited partnership or fund. Further, these types of investments required a large commitment of staff resources to ensure proper evaluation at the onset, and adequate monitoring through their terms. Current investment guidelines prohibit the Investment Board from owning more than 50.0 percent of a company's equity.

To complement some of its investments in partnerships and funds, the Investment Board may periodically continue to make direct co-investments that parallel the investments of a fund in which it is investing. Investment guidelines permit co-investments in both the private equity and Wisconsin private equity portfolios, but in recent years all have been made through the Wisconsin private equity portfolio, where they are referred to as "side-by-side" investments. Co-investments can be advantageous by allowing the Investment Board to focus on selected investments within a fund without requiring it to pay management fees to the general partner for the side-by-side amounts. Since 2001, the Investment Board has made nine side-by-side investments in its Wisconsin private equity portfolio.

The Investment Board has established tighter limits on private equity investments in emerging markets.

Second, the Investment Board has established limits on private equity investments in emerging markets. The former opportunity portfolio had made several investments in Asia and Eastern Europe, including South Korea, India, and Russia. Some of these investments did not perform well and have been difficult to liquidate. Current investment guidelines limit international exposure to 40.0 percent of the combined private equity portfolios. They also require that staff monitor whether total investments in emerging markets exceed 15.0 percent, which would trigger a discussion with the Investment Board's internal Investment Committee. In light of the large percentage of older private equity investments in international markets, the international exposure limit was temporarily increased to 50.0 percent through the end of 2007, with the expectation that many of these investments would be liquidated by that time.

The Investment Board is increasing the average size of its private equity investments.

Finally, the Investment Board is increasing the average size of its private equity investments. Before 2005, the average non-Wisconsin private equity investment was $25.0 million. During 2005 and 2006, this average commitment increased to $83.6 million. Private markets group staff currently have authority to make investments up to $300.0 million in buyout funds, and $75.0 million in venture capital funds without approval from the Chief Investment Officer or Executive Director. The larger investments are designed to allow the Investment Board to focus its efforts on the most desirable general partners and investment opportunities. They also reduce the level of effort needed to manage and monitor private equity investments. At the same time, however, larger investments require strong due-diligence and monitoring procedures.

Improved Due-Diligence and Monitoring Procedures

The Investment Board has taken several steps to improve its due-diligence procedures and documentation, which had been lacking or inconsistent for some of its private markets investments in the past. Effective due-diligence procedures are important to ensure that the merits and risks of prospective private equity managers, strategies, and investments are sufficiently researched and analyzed. One of the more significant steps has been to more effectively use the assistance of a consulting firm in private equity investments.

In our 2004 audit (report 04-13), we noted that the Investment Board was not fully using the services of its private equity advising firm. After the expiration of a three-year, $3.1 million contract in October 2004, it contracted with another private equity advising firm—Hamilton Lane Advisors, L.L.C.—for these services. The Investment Board currently pays Hamilton Lane $1.45 million annually to work with staff and:

- recommend long-term private equity strategies and develop annual plans to implement them;
- identify and perform due-diligence of potential investment opportunities;
- track and maintain a database of the Investment Board's private equity investments;
- prepare quarterly performance analyses of the private equity portfolios; and
- provide ongoing research and research in industry trends.

All new private equity investments must undergo a due-diligence review by the Investment Board's private equity advisor.

In contrast to a somewhat limited use of the prior consulting firm, the Investment Board's current investment guidelines require that all new private equity investments undergo a due-diligence review by Hamilton Lane in addition to the review completed by staff. Each year, approximately 500 submissions of potential investment proposals are received by Hamilton Lane, the Investment Board, or both organizations. This number is narrowed to the 40 to 50 proposals that best fit with the Investment Board's strategies, which then undergo further evaluation by staff and Hamilton Lane.

Hamilton Lane performs much of the preliminary work to identify and evaluate prospective private equity investment opportunities, but the Investment Board retains responsibility for the final decisions. Investment Board staff complete due-diligence work and evaluate the information provided by Hamilton Lane, which addresses issues such as the experience and track record of the general partner and the merits of the proposal. They also assess the compatibility of the investment with Investment Board strategies. Depending on its size and type, the proposed investment receives differing levels of review and approval. Following this due-diligence and review process, the Investment Board ultimately made commitments to 10 investments in 2005 and 21 in 2006, as was shown in Table 11.

Due-diligence procedures for real estate investments vary somewhat from those for private equity. Real estate proposals are most often received and screened by Investment Board staff, rather than a real estate advisor. However, proposals involving direct ownership by the Investment Board are required to be assigned to an external real estate advisor, who conducts further analysis and due-diligence and prepares a brief summarizing their merits. Typically, proposals from new general partners for partnerships in fund investments are forwarded to the real estate advisor for a detailed due-diligence analysis.

The Investment Board has improved its procedures to monitor and report on private equity investments.

While real estate monitoring and reporting procedures have required minimal changes since the establishment of the private markets group, the Investment Board is currently undertaking several steps to improve its monitoring and reporting procedures over private equity investments, including:

- more frequent and formalized reporting on the strategy, status, and key issues affecting investments;
- more centralized tracking of investments and related documents;
- improved communication between investment and operations staff; and
- increased monitoring of management fees.

We believe these are important steps to help ensure the accuracy and continuing appropriateness of the investments, as well as to provide for a better document trail should turnover occur again in the future.

Performance of Private Investments

The 2001 reviews by our office and a private consultant noted that the Investment Board's private equity investments were not meeting benchmarks, and their performance was below industry averages. In contrast, both private equity investments and real estate investments provided strong returns during 2005 and 2006 and met all but one benchmark, as shown in Table 12.

Private Equity Investments

The private equity legacy portfolio provided a one-year return of 48.2 percent during 2005, and 32.1 percent during 2006.

A major contributing factor to the strong performance of the private equity investments was successful liquidation and profit distributions for several investments in the private equity legacy portfolio, which reported a one-year return of 48.2 percent during 2005, and 32.1 percent during 2006. One of the larger liquidations in 2005 was the sale of SWR Investments Limited, through which the Investment Board had acquired equity stakes in two banks in Bulgaria and Croatia in 2000. Most of this $70.0 million investment was sold for more than $216.0 million in 2005 and 2006.

Table 12

Performance of Private Equity and Real Estate Investments
For Periods Ending December 31, 2005 and 2006

Asset Class	Period Ending December 31, 2005	Average Annual Rate of Return	Investment Benchmark	Excess/ (Deficiency)
Private Equity	1-year	44.2%	30.4%	13.8%
	3-year	24.9	18.3	6.6
	5-year	13.2	9.0	4.2
	10-year	13.3	12.0	1.3
Real Estate	1-year	28.2	19.2	9.0
	3-year	19.1	13.0	6.1
	5-year	14.7	11.0	3.7
	10-year	13.0	11.4	1.6

Asset Class	Period Ending December 31, 2006	Average Annual Rate of Return	Investment Benchmark	Excess/ (Deficiency)
Private Equity	1-year	28.7%	20.3%	8.4%
	3-year	31.2	20.3	10.9
	5-year	20.5	13.6	6.9
	10-year	13.0	14.3	(1.3)
Real Estate	1-year	30.1	17.6	12.5
	3-year	25.9	16.4	9.5
	5-year	19.0	12.4	6.6
	10-year	14.9	12.3	2.6

Other significant contributors to the performance of the legacy portfolio included:

- a $33.7 million co-investment in the buyout of a pipeline company, which provided cash distributions totaling $72.6 million during 2005 and 2006;

- a $57.3 million investment in a large leveraged buyout fund, which provided cash distributions totaling $43.2 million during 2005 and 2006; and

- a $20.0 million investment in an Asian emerging market debt opportunity fund, which provided a cash distribution of $51.2 million during 2006.

The Investment Board also liquidated some of its poorer-performing private equity investments during this period, including a troubled South Korean investment highlighted in our 2001 audit. In 1999, the Investment Board entered into a partnership with an investment company to form a holding company, Korea OnLine Limited (KOL), with the purpose of acquiring South Korean financial services companies and forming an integrated entity to provide securities trading, banking, and insurance services. The Investment Board's original investment of $110.0 million in KOL faced a number of problems, causing its value to decline to $15.9 million as of June 30, 2001.

The Investment Board took a prolonged series of steps to liquidate this investment, including hiring forensic auditors in 2001 to analyze the company and determine potential liability of other parties, entering into an agreement with the other major shareholder in 2002 that would to move it toward a negotiated sale, and replacing the company's board and management. By the end of 2005, the Investment Board received $51.9 million in dividend distributions and sales proceeds for this investment, after incurring approximately $700,000 in legal and other expenses. Net of these expenses, it realized a $58.8 million loss over the life of the KOL investment.

Real Estate Investments

The real estate funds portfolio provided a one-year return of 48.6 percent during 2005, and 42.7 percent during 2006.

The strong performance of real estate investments during 2005 and 2006 was largely attributable to the performance of the real estate funds portfolio, which had a one-year return of 48.6 percent during 2005, compared to a benchmark of 19.2 percent, and a one-year return of 42.7 percent during 2006, compared to a benchmark of 17.6 percent.

At least part of the portfolio's success is attributable to strong returns from some international investments. For example, two of its fund investments, with a combined total of $106.4 million at the end of 2005, reported gross triple-digit one-year returns during 2005, as they capitalized on the turnaround in the Japanese real estate market with initial public offerings of a Tokyo bank and Japan's largest golf course operator. One of these two funds also benefited from a majority stake in one of the largest banks in South Korea, whose value more than tripled two-and-one-half years after its acquisition. In addition, some of the real estate funds in the portfolio were at a mature stage in the investment cycle, during which higher returns are often realized, and most of the portfolio's funds used leverage or borrowed funds to increase its capital for investments, with the goal of increasing returns.

The real estate transition portfolio had provided a one-year return of 30.7 percent during 2006.

The real estate transition portfolio also performed well during this period. Its one-year return during 2006 was 30.7 percent, compared to a benchmark of 17.6 percent. As noted, the transition portfolio's returns were particularly affected by the consistently strong performance of a REIT investment.

Benchmarks

A continuing challenge in evaluating performance for private markets investments is the establishment of appropriate performance benchmarks. The benchmarks are used to not only evaluate the success of the investments, but also to evaluate the performance of the investment staff responsible for managing them. Because investment staff's performance in comparison to their benchmarks is a major factor in determining their incentive compensation, benchmarks need to be carefully established to ensure they correspond to the goals, strategies, and make-up of investment portfolios. The Benchmark Committee of the Board of Trustees works with a consultant to annually review and recommend performance benchmarks to the Board for adoption. Comprehensive reviews of the benchmarks are performed every three to five years.

The Investment Board changed or modified its private equity benchmarks five times since 2000.

Establishing appropriate private equity benchmarks has been particularly challenging because universally accepted measures have not been readily available. Between 2000 and 2006, the Investment Board changed or modified its benchmarks for private equity portfolios five times, largely in response to the increasing availability of industry-wide performance information.

Through 2004, the Investment Board used absolute return and public equity–based benchmarks. Since 2005, it has used benchmarks that track the performance of a peer group of private equity partnerships based on vintage years. However, the current benchmarks continue to have limitations. For example, they are not transparent and are based on a small sample of private equity partnerships. The Investment Board will likely continue to adjust its private equity benchmarks as better measures become available.

Because real estate is a more established asset class, the Investment Board's benchmarks for real estate investments have changed less frequently than its private equity benchmarks. Currently, benchmarks for the three real estate equity portfolios are based on the National Council of Real Estate Investment Fiduciaries (NCREIF) Property Index, which measures the performance of a pool of more than 5,000 individual commercial real estate properties acquired in the private markets in the United States for investment purposes. The NCREIF Property Index does not, however, include international real estate investments.

The benchmark for the real estate funds portfolio does not factor in its large international exposure.

Under current investment guidelines, the Investment Board is authorized to invest up to 40.0 percent of the total value of its real estate equity portfolios in international investments. It has done so largely through its real estate funds portfolio. International investments, which contributed to that portfolio's recent successful performance, represented 55.7 percent of its value at the end of 2005, and 43.7 percent as of September 30, 2006. Further, the Investment Board's recent commitments to funds with international investments suggest the portfolio will continue to have a large international component for the next several years.

Investment Board staff note three reasons that an international component is not included in the benchmark for its real estate funds portfolio. First, such a component would create a mandate to invest in international markets, which may not be as favorable in the future. Second, limited real estate benchmarks with an international component are available, and those available are relevant only to REIT portfolios. In June 2007, the Investment Board's consultant recommended staying with the current benchmark because suitable alternatives are not yet available. Third, most international investments in the Investment Board's real estate funds are hedged to account for foreign currencies.

While these reasons may have some merit, the Investment Board's continuing presence in international real estate markets suggests that regular review of the benchmark is warranted. Further, global property indices that measure the performance of both domestic and international real estate investments may become available in the future.

The benchmark for the real estate transition portfolio did not factor in a large REIT investment.

During the audit, we also questioned the sole use of the NCREIF Property Index as the benchmark for the real estate transition portfolio because of the inclusion of the large REIT investment in the portfolio. As the real estate transition portfolio was liquidated, the investment represented an increasingly larger portion of the portfolio: 56.2 percent of its total value at the end of 2006.

As noted, the REIT investment significantly contributed to the transition portfolio's successful performance during the last two years, yet there was no REIT component in the portfolio's benchmark. As a further illustration of the investment's effect, the one-year benchmark for the Investment Board's two portfolios that hold only REIT investments was 35.1 percent in 2006, or twice the benchmark of 17.6 percent for the real estate transition portfolio.

The Investment Board's decision to transfer the REIT to the real estate separate accounts portfolio on October 1, 2007, helps to address our concern, because the REIT represents a much smaller portion of that portfolio's overall value. However, further evaluation of the continuing appropriateness of the NCREIF Property Index will be warranted if additional REITS are purchased for the real estate separate accounts portfolio in the future.

☑ Recommendation

We recommend the State of Wisconsin Investment Board regularly analyze the continuing appropriateness of its benchmarks for the real estate portfolios and evaluate whether other options are available that may better match the strategies and holdings of the portfolios.

Future Challenges

Private markets investments are less than the Investment Board's target allocation of 10.0 percent.

The Investment Board faces several challenges in maintaining a successful private markets investment program. One will be meeting its allocation targets for private markets investments. Since 1995, it has generally targeted an allocation of 10.0 percent of Core Fund assets to private markets investments. Currently, that allocation is divided, with 5.0 percent to private equity and debt and 5.0 percent to real estate and mortgages. However, private equity and debt investments were 3.0 percent of the Core Fund's total assets at the end of 2005, and 3.1 percent at the end of 2006, in part because of a decreased presence in these markets during the three-year period from 2002 through 2004. The Investment Board has been more successful in increasing its portion of real estate and mortgage investments from 3.6 percent at the end of 2005 to 4.1 percent at the end of 2006.

The Investment Board faces increased competition for private equity investment opportunities.

The private equity advisor estimates that to achieve a 5.0 percent target allocation for private equity, the Investment Board will need to make commitments to private equity partnerships and funds of at least $1.2 billion per year through 2010. However, the Investment Board is also facing increased competition from other institutional investors and increasing prices for private equity opportunities. For instance, the Washington State Investment Board currently has a private equity target allocation of 17.0 percent and, in late 2006, the Indiana Public Employees Retirement Fund doubled its private equity allocation from 4.0 percent to 8.0 percent. The availability of investment opportunities for public pension funds may be further limited by concerns with increased disclosure of information under public records requirements.

In the case of real estate, the Investment Board has had less difficulty investing with the top funds. However, it likewise anticipates that identifying strong real estate investment opportunities will be challenging, at least in the near future, especially as cash distributions from investment gains and liquidated investments will need to be reinvested if allocation targets are to be met.

The Investment Board is implementing or considering several options to increase its access to potential private markets investment opportunities.

In response to the increasing market demand for private equity and real estate investments, the Investment Board is implementing or considering several options to increase its access to potential opportunities.

- In December 2004, the Board of Trustees authorized increased investment discretion to selected real estate advisors, which would allow them to act quickly on investment opportunities without prior approval. The Investment Board has finalized the necessary investment guidelines and agreements for such increased discretion. However, it has not yet granted increased discretion to any advisor, as it believes many properties are currently too expensive and wishes to directly control all purchases until conditions become more favorable.

- The Investment Board recently approved the hiring of a separate private equity advisor for smaller and mid-sized funds, and to pursue those that choose to not participate in a broad consultant endorsement process because they are highly regarded in the marketplace. That advisor could also be used when Hamilton Lane may have a conflict of interest.

- Investment staff are exploring other investment opportunities, such as infrastructure that include toll roads, airports, water companies, and a number of other long-lived assets that provide essential goods and services, and potentially stable and predictable cash flows.

As the Investment Board evaluates these and other options for increasing its investments in the private markets, we believe it also needs to ensure that corresponding procedures and controls are in place to properly protect its interest and ensure that prudent investments are made. Staff losses in 2005 and 2006 also suggest the Investment Board needs to re-evaluate its strategies for obtaining and retaining staff with skills to develop and monitor complex and higher-risk investment strategies in private markets.

☑ Recommendation

We recommend the State of Wisconsin Investment Board report on its success in increasing its investments in private markets in its annual report to the Legislature.

▪ ▪ ▪ ▪

Wisconsin Investments ■

As part of its continuing interest in promoting economic development, the Legislature encourages the Investment Board to maximize investments in Wisconsin, subject to its fiduciary responsibilities. The Investment Board regularly does so through the State Investment Fund, which purchases certificates of deposit (CDs) and commercial paper issued by Wisconsin banks and thrift institutions, as well as through private equity and private debt portfolios, investments in stocks and bonds issued by publicly traded companies, and real estate investments.

Overview of Asset Classes

The Investment Board has invested almost $1.4 billion in companies headquartered or with a significant presence in Wisconsin.

As shown in Table 13, the Investment Board most recently reported investments totaling almost $1.4 billion in companies with headquarters or a significant presence in Wisconsin. In addition, it invested another $6.9 billion in companies with headquarters elsewhere but with 20 or more Wisconsin employees.

As of June 30, 2006, the State Investment Fund held almost $708.6 million in Wisconsin investments that were primarily CDs and commercial paper issued by Wisconsin banks and thrift institutions through the State Investment Fund. Most of the CDs have been issued through the Wisconsin CD program, which was implemented in 1987 and designed to allow the Investment Board to earn a competitive rate of return while providing local financial institutions with access to capital. Nearly 150 state banks and thrifts participate in the program.

Table 13

Investments in Companies Headquartered or with a Significant Presence in Wisconsin
As of June 30, 2006

Asset Class	Amount
State Investment Fund (CDs and commercial paper)	$ 708,555,000
Private Equity/Private Debt	389,160,665
Public Equities	190,268,898
Fixed-Income	67,254,733
Real Estate	17,046,986
Total	**$1,372,286,282**

Source: Investment Board's 2007 Annual Goals, Strategies, and Performance Report

Two private markets portfolios with a Wisconsin emphasis—the Wisconsin private debt portfolio and the Wisconsin private equity portfolio—held investments valued at $389.2 million as of June 30, 2006. The Wisconsin private debt portfolio provides long-term, fixed-rate loans to Wisconsin companies that can demonstrate the ability to repay their debt. The Wisconsin private equity portfolio primarily invests in venture capital funds in Wisconsin and the Midwest.

Public equities and fixed-income assets are the stocks and bonds of publicly traded companies located in Wisconsin. The Investment Board purchased its own office building, located in downtown Madison, as a real estate investment. It also had an investment in a five-building office park located on the west side of town, but recently sold it in 2007.

Among the Investment Board's largest investments in public equities of Wisconsin companies are stocks issued by Kohl's Corp., Harley-Davidson, Inc.; Great Wolf Resorts, Inc.; and Third Wave Technologies, Inc. While Kohl's and Harley-Davidson are large cap companies, most of the investments in public Wisconsin companies have been small cap stocks.

The Investment Board realized a gain of $49.1 million from the sale of a Madison-based company.

One successful investment in a small cap Wisconsin company involved Bone Care International, Inc., a Madison-based biotechnology and pharmaceutical company that developed a vitamin D hormone product. Throughout FY 2004-05, the Investment Board sold its shares of this stock, with the final and largest sale occurring the day after Bone Care announced it had accepted an acquisition offer from another company. Ultimately, the Investment Board realized a gain of $49.1 million from these sales.

Wisconsin Private Debt Portfolio

The objective of the Wisconsin private debt portfolio is to invest funds in business activities that provide market-rate returns consistent with the Investment Board's fiduciary responsibility and that contribute to Wisconsin's economy. Consequently, the companies must pass the same credit tests used to evaluate companies outside of Wisconsin. Further, Investment Board policies require that the interest rate and other loan terms negotiated with the companies reflect current market rates and terms for similar loans. These loans, which have individually ranged from $750,000 to $55.0 million, are typically used by the companies to make capital improvements, purchase facilities, or perform other expansion activities. Up to 15 percent of the portfolio may be loans to companies in areas bordering Wisconsin.

The Wisconsin private debt portfolio was valued at $352.7 million as of December 31, 2006, which represented loans and investments with 31 different Wisconsin companies. The top ten borrowers had outstanding loans ranging from $15.1 million to $49.0 million and represented 65.3 percent of the portfolio at the end of 2006.

The portfolio has had relatively steady performance over the last several years, exceeding all of its benchmarks at the end of 2005 and, as is shown in Table 14, at the end of 2006. The portfolio has had no defaults on its loans in recent years.

Table 14

Performance of the Wisconsin Private Debt Portfolio

Period Ending December 31, 2006	Average Annual Rate of Return	Investment Benchmark	Excess
1-year	7.6%	4.9%	2.7%
3-year	7.1	3.6	3.5
5-year	7.5	6.0	1.5
10-year	7.8	6.5	1.3

Wisconsin Private Equity Portfolio

The Wisconsin private equity portfolio was established in 2000, largely as a Board of Trustees initiative.

The Wisconsin private equity portfolio was established in 2000, largely as a Board of Trustees initiative. Subsequently, investment staff also concluded that an imbalance between high levels of research and development and disproportionately low levels of venture capital presents increasing opportunities for potentially profitable investments in Wisconsin private equity.

Through 2006, the Wisconsin private equity portfolio has committed $180.0 million to four venture capital firms.

The Investment Board has committed $180.0 million to investments in this portfolio through December 31, 2006, including $145.0 million to various funds that focus largely on start-up or early-stage companies. As shown in Table 15, another $35.0 million has been committed as "side-by-side" investments or direct investments that parallel those of the funds. In 2004, the Board of Trustees also authorized a $5.0 million discretionary pool that can be used as follow-up investments in the Wisconsin companies in which the Investment Board has already made side-by-side investments.

Table 15

Commitments to Venture Capital Firms
December 31, 2006
(in Millions)

Fund Name (Year Established) *Investment Details*	Commitment to Fund	Side-by-Side Commitment	Amount Invested	Amount Invested in Wisconsin Companies
Mason Wells Biomedical Fund I (2000) *Agreed to invest $20 million in Wisconsin*[1, 2]	$ 20.0	$ 5.0	$20.1	$16.5
Venture Investors Early Stage III (2000) *Agreed to invest 75 percent of the Investment Board's commitment in Wisconsin*[1]	15.0	5.0	17.1	13.4
Baird Venture Partners I (B) (2003) *Agreed to make reasonable efforts to invest $10 million in Wisconsin*[1]	25.0	5.0	17.6	2.2
Frazier Technology Ventures II (2004) *Opened an office in Madison as base for Midwest operations*	50.0	10.0	22.5	0.0
Venture Investors Early Stage IV (2006) *Focuses on start-up and early-stage companies*	25.0	5.0	0.4	0.4
Mason Wells Biomedical Fund II (2006) *Focuses on start-up and early-stage biomedical companies*[2]	10.0	5.0	0.0	0.0
Total	**$145.0**	**$35.0**	**$77.7**	**$32.5**

[1] Balances include $13.4 million of side-by-side and discretionary investments.
[2] In 2007, Mason Wells announced the transfer of its venture capital business into an independent firm, Broadwell Ventures. Subsequently, the Investment Board cancelled its commitment to Mason Wells Biomedical Fund II in May 2007. No new investments will be made to Mason Wells Biomedical Fund I, and current investments will be liquidated by Mason Wells.

Through December 31, 2006, $77.7 million in committed funds has been invested, including $32.5 million in Wisconsin companies. The nine companies in which the Investment Board has made direct private equity investments are listed in Table 16. Seven are medical technology or biotechnology companies, which were a primary focus when the Wisconsin private equity portfolio was established. However, more recent investments have also included companies in other emerging technologies and services, such as PinStripe, Inc., which provides recruitment services. All of the companies are located in the Madison or Milwaukee areas.

Table 16

Direct Wisconsin Private Equity Investments[1]
Through December 31, 2006

Company Name *Nature of Business*	Amount (in millions)	Principal City
NimbleGen Systems, Inc.[2] *Technology using digital processing and photochemistry in synthesis of DNA*	$2.4	Madison
OpGen, Inc. *Genetic analysis services and systems*	2.2	Madison
Gala Design, Inc. [3] *Gene insertion technology used in production of biopharmaceuticals*	2.0	Middleton
TeraMedica, Inc. *Medical information technology software*	1.9	Milwaukee
TomoTherapy, Inc. [4] *Equipment for targeted radiation treatment for cancer patients*	1.5	Madison
Zystor Therapeutics, Inc. *Therapeutics for patients with genetic disorders*	1.2	Milwaukee
NameProtect, Inc.[5] *Digital brand management, including trademark clearance and monitoring services*	1.2	Madison
PinStripe, Inc. *Recruitment process outsourcing*	0.7	Brookfield
Caden BioSciences, Inc. *Life sciences tools and services*	0.3	Fitchburg
Total	**$13.4**	

[1] Totals include discretionary pool investments of $2.6 million used for four of the companies.
[2] Announced in June 2007 that it was being bought out by a large pharmaceutical company.
[3] Investment was sold in 2003 for $2.5 million.
[4] Initial public offering occurred in May 2007.
[5] Investment was sold in March 2007 for $3.0 million.

One fund in the Wisconsin private equity portfolio recently received media attention because it has not made any investments in Wisconsin. The Seattle-based Frazier Technology Ventures II was established in 2004 and focuses on communications and information technology investments in northern states from Washington to Ohio. While it has opened an office in Madison as its base for Midwest operations, it has not agreed to make a certain percentage of its investments in Wisconsin or the Midwest, as did some of the other funds. As was shown in Table 15, the Investment Board made a commitment of $50.0 million to this fund, which is the largest commitment of the Wisconsin private equity portfolio. The Investment Board's $50.0 million also represents 47.9 percent of all commitments Frazier Technology Ventures II has received. However, of the fund's 11 investments, 7 are in the Seattle area and 2 are in the Midwest.

While the fund has not made any Wisconsin investments, the Investment Board believes it has been a successful investment because Frazier Technology Ventures II is helping to develop the Wisconsin venture capital infrastructure by advising prospective companies and continuing to search for opportunities. It also has been one of the portfolio's better performers, providing a 27 percent one-year return and a 13 percent inception-to-date return at the end of 2006.

The Wisconsin private equity portfolio has significantly underperformed its benchmarks through 2006.

The Wisconsin private equity portfolio had negative returns and significantly underperformed all of its benchmarks at the end of 2005 and, as shown in Table 17, at the end of 2006. The Investment Board attributes the underperformance to the fact the portfolio is relatively new, and early-stage private equity investments are typically expected to earn below benchmark returns until at least five years have passed.

Table 17

Performance of the Wisconsin Private Equity Portfolio

Period Ending December 31, 2006	Average Annual Rate of Return	Investment Benchmark	Excess/ (Deficiency)
1-year	(1.8)%	8.5%	(10.3)%
3-year	(2.7)	6.7	(9.4)
5-year	(5.0)	5.6	(10.6)
From Inception[1]	(7.6)	7.7	(15.3)

[1] Inception date is June 30, 2000.

The Investment Board expects that it will begin to realize returns from its investments as some of the companies in the funds are sold, and it anticipates that at least two of its investments in the portfolio will be sold at significant gains during 2007. However, it is too early to independently assess what level of success other investments in the portfolio will experience. Consequently, it will be important to closely monitor the success of this portfolio in future years and ensure that it provides the level of returns that meet the Investment Board's fiduciary responsibilities.

☑ Recommendation

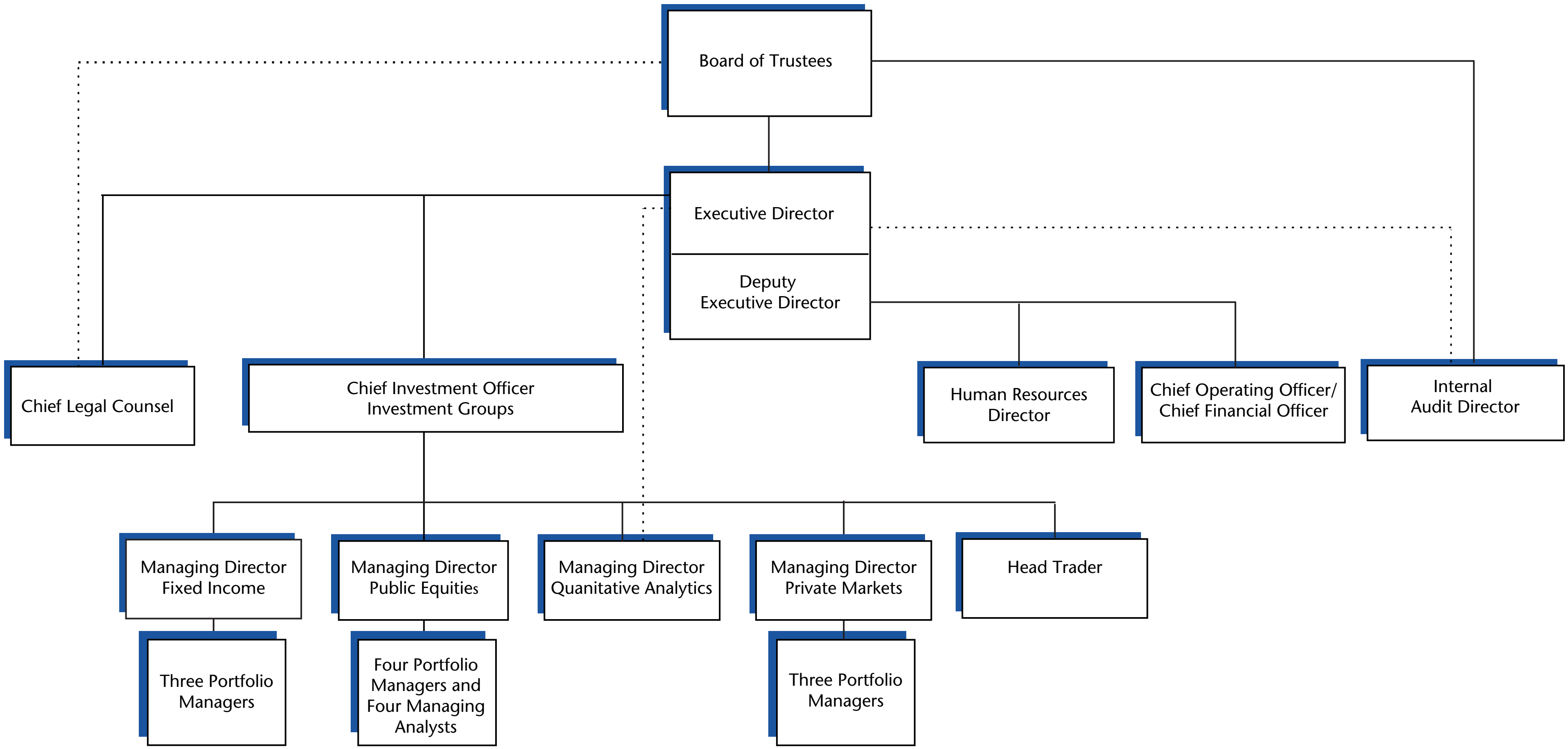
We recommend the State of Wisconsin Investment Board highlight the performance of its Wisconsin private equity portfolio in its annual report to the Legislature.

■ ■ ■ ■

Appendix 1

Investment Board Organization Chart

As of April 2007



Appendix 2

Five-Year Comparison of Core and Variable Fund Asset Allocations

Core Fund Assets

	12/31/06		12/31/05		12/31/04		12/31/03		12/31/02		5-Year Change	
	Amount (in millions)	Percentage	Amount (in millions)	Percentage	Amount (in millions)	Percentage	Amount (in millions)	Percentage	Amount (in millions)	Percentage	Amount (in millions)	Percentage
Equities	**$47,268**	**62.2%**	**$43,391**	**64.3%**	**$39,996**	**62.8%**	**$35,613**	**62.6%**	**$26,715**	**57.7%**	**$20,553**	**76.9%**
Domestic	28,521	37.5	28,502	42.2	25,872	40.6	23,655	41.6	17,954	38.8		
International	16,823	22.2	13,419	19.9	13,385	21.0	11,583	20.4	8,761	18.9		
Emerging Markets	1,924	2.5	1,470	2.2	739	1.2	375	0.7	0	0.0		
Fixed-Income[1]	**20,815**	**27.4**	**17,155**	**25.4**	**17,172**	**26.9**	**14,354**	**25.2**	**13,674**	**29.6%**	**7,141**	**52.2**
Investment Grade	11,907	15.7	9,797	14.5	9,107	14.3	8,597	15.1	6,843	14.8		
TIPS	1,976	2.6	1,765	2.6	1,520	2.4	0	0.0	0	0.0		
High Yield	650	0.9	583	0.9	658	1.0	829	1.4	181	0.4		
Global	4,790	6.3	3,716	5.5	4,731	7.4	4,085	7.2	3,452	7.5		
Emerging Debt	615	0.8	538	0.8	470	0.7	319	0.6	195	0.4		
High Yield/Emerging Hybrid	877	1.1	757	1.1	686	1.1	365	0.6	0	0.0		
National Private Debt	0	0.0	0	0.0	0	0.0	159	0.3	3,003	6.5		
Private Markets[1]	**5,498**	**7.2**	**4,472**	**6.6**	**4,357**	**6.8**	**4,966**	**8.7**	**5,069**	**11.0**	**429**	**8.5**
Real Estate	2,848	3.7	2,063	3.1	1,810	2.8	2,009	3.5	1,861	4.0		
Real Estate Mortgages	302	0.4	358	0.5	518	0.8	579	1.0	663	1.5		
Private Equity/Alternative	1,995	2.6	1,689	2.5	1,653	2.6	1,977	3.5	2,115	4.6		
Wisconsin Private Debt	353	0.5	362	0.5	376	0.6	401	0.7	430	0.9		
Multi-Asset and Cash	**2,452**	**3.2**	**2,496**	**3.7**	**2,205**	**3.5**	**1,966**	**3.5**	**805**	**1.7**	**1,647**	**204.6**
UBS Multi-Asset	845	1.1	736	1.1	380	0.6	328	0.6	0	0.0		
Liquidity Index Funds	385	0.5	842	1.2	623	1.0	0	0.0	0	0.0		
SIF and Custodial Cash[2]	1,222	1.6	918	1.4	1,202	1.9	1,638	2.9	805	1.7		
Total Assets	**$76,033**	**100.0%**	**$67,514**	**100.0%**	**$63,730**	**100.0%**	**$56,899**	**100.0%**	**$46,263**	**100.0%**	**$29,770**	**64.3**

Variable Fund Assets

	12/31/06		12/31/05		12/31/04		12/31/03		12/31/02		5-Year Change	
	Amount (in millions)	Percentage	Amount (in millions)	Percentage	Amount (in millions)	Percentage	Amount (in millions)	Percentage	Amount (in millions)	Percentage	Amount (in millions)	Percentage
Equities	**$6,872**	**96.2%**	**$6,207**	**97.1%**	**$6,113**	**97.8%**	**$5,827**	**98.3%**	**$4,595**	**98.5%**	**$2,277**	**49.6%**
Domestic	5,284	74.0	4,884	76.4	4,800	76.8	4,642	78.3	3,694	79.2		
International	1,394	19.5	1,175	18.4	1,237	19.8	1,151	19.4	901	19.3		
Emerging Markets	194	2.7	148	2.3	76	1.2	34	0.6	0	0.0		
Multi-Asset and Cash	**271**	**3.8**	**186**	**2.9**	**135**	**2.2**	**103**	**1.7**	**71**	**1.5**	**200**	**281.7**
Liquidity Index Funds	177	2.5	32	0.5	32	0.5	0	0.0	0	0.0		
SIF and Custodial Cash[2]	94	1.3	154	2.4	103	1.7	103	1.7	71	1.5		
Total Assets	**$7,143**	**100.0**	**$6,393**	**100.0%**	**$6,248**	**100.0%**	**$5,930**	**100.0%**	**$4,666**	**100.0%**	**$2,477**	**53.1**

[1]For comparability purposes, real estate mortgages and Wisconsin private debt are included in the private markets category for all five years.

[2]Represents cash on hand for liquidity needs, as well as temporarily uninvested cash balances from all the portfolios.

Appendix 3

Performance of the Investment Board's Individual Asset Classes

Asset Class	Period Ending December 31, 2006	Actual Performance	Investment Benchmark	Excess/ (Deficiency)
Equities	1-year	19.3%	19.5%	(0.2)%
	3-year	14.4	14.4	0.0
	5-year	9.8	9.9	(0.1)
	10-year	9.5	8.4	1.1
Fixed-Income	1-year	5.4	4.6	0.8
	3-year	4.5	4.0	0.5
	5-year	7.0	6.5	0.5
	10-year	7.0	6.7	0.3
Real Estate	1-year	30.1	17.6	12.5
	3-year	25.9	16.4	9.5
	5-year	19.0	12.4	6.6
	10-year	14.9	12.3	2.6
Private Equity	1-year	28.7	20.3	8.4
	3-year	31.2	20.3	10.9
	5-year	20.5	13.6	6.9
	10-year	13.0	14.3	(1.3)
Multi-Asset	1-year	14.8	15.0	(0.2)
	3-year	12.9	12.5	0.4
	Since March 2003 Inception	18.5	16.8	1.7

State of Wisconsin Investment Board

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July 20, 2007

Ms. Janice Mueller
State Auditor
Legislative Audit Bureau
22 East Mifflin Suite 500
Madison, WI 53703

Dear Ms. Mueller:

Thank you for the opportunity to review and respond to the management audit of the State of Wisconsin Investment Board (SWIB). We found the report to be balanced and constructive, and we appreciate the thorough and careful way in which it was prepared.

We have the following comments to offer from staff, including our response to the audit's five recommendations which are attached. The full Board looks forward to your presentation and the opportunity to further discuss the audit at the September 13 Board meeting.

Core Fund Performance

The Wisconsin Retirement System (WRS) continues to be in excellent financial condition. This was confirmed again recently by the decision of the Employee Trust Funds Board not to increase WRS contribution rates in 2008 because of better than expected investment performance.

The Core Fund of the WRS represents over 85% of all assets managed by SWIB and is diversified across public and private markets. The audit confirms that the Fund surpassed all performance benchmarks in 2005 and 2006 and remained well ahead of long-term actuarial assumptions. The Fund has now beaten its one-year benchmark for four consecutive calendar years for the first time since the composite benchmark was implemented in the early 1980s. Due to the work of our own staff and outside managers SWIB added $650 million over the benchmark in 2006. Independent analysis has concluded that SWIB's costs to manage the Core Fund are normal for its size and asset mix.[1]

As of December 31, 2006, the Core Fund's five-year average annual return ranked fifth in the LAB selected peer group of ten pension funds. When adjusted for risk (volatility of returns), the Core Fund ranked fourth. As noted in SWIB's 2007 annual report to the Legislature, the

[1] CEM Benchmarking, Inc. 2005 report

Core Fund's five-year return was in the top quartile in a broader survey of 63 public funds with assets of more than $1.0 billion.[2]

As the audit is careful to point out, comparisons of the Core Fund's returns to the performance of other public pension funds are affected by asset allocation decisions that result from liability projections, risk tolerance, statutory investment limitations and resource constraints. All of these factors vary from system to system.

For example, the fund with the highest five-year return in the LAB selected peer group has a private equity allocation that is nearly triple the average share that the Core Fund and other large public funds allocate to this asset class. The Core Fund's target allocation for private equity has resulted in significant added returns to the Fund but it is sized to recognize that private equity investments typically carry greater risk than other major asset classes.

SWIB's disciplined allocation process strives to select a diversified asset mix that achieves an optimal balance of risk and return over the long-term. This fall, the Board will be conducting its biennial in-depth review of asset allocations for both the Core and Variable Funds that will include an updated 50-year financial projection for the WRS from the actuary. The results of this review, including any changes in asset allocation approved by the Board, will be discussed in our annual report to the Legislature next March.

Private Markets

Private markets include real estate, private equity and private debt. We appreciate the audit's acknowledgement of the exceptionally strong returns from our private markets investments, as well as the audit's recognition of the organizational improvements SWIB made that are contributing to this favorable performance.

Although the actual amounts invested in private markets are below our targets, SWIB significantly accelerated private equity capital commitments in 2005 and 2006. That trend has continued in 2007. At the end of 2006, SWIB's total exposure to private equity, including unfunded commitments, was 5.5% of Core Fund assets, which exceeded its 5.0% target. SWIB's exposure to real estate, including unfunded commitments, was 5.6% of the Core Fund, which also exceeded its 5.0% target allocation. These are important milestones on the way to having our invested capital meet our targets.

Our private markets group is a strong and experienced team. We agree that continuing to attract and retain skilled staff is critical to reaching our target allocations and to the continuing success of these investments over the long-term.

The performance benchmarks used by SWIB and our peers for private equity and real estate continue to evolve as the types and structure of these investments continue to expand. In June 2007, SWIB's benchmark consultant concluded that there is still no suitable benchmark for international private real estate investments, and recommended that SWIB continue with its current benchmark. His report also observed that most foreign assets in SWIB's real estate funds are hedged back to the dollar, meaning that SWIB's returns do not arise from US dollar

[2] Trust Universe Comparison Service December 31, 2006 survey

and foreign currency exchange movements. However, SWIB reviews all benchmarks on a regular basis and will continue to evaluate the fit between the real estate benchmark and its investment strategy.

Wisconsin Private Equity Portfolio
In 1999, the Board approved a staff recommendation to invest up to $50 million in private equity funds with a focus on Wisconsin and the Midwest. A SWIB review determined that there was the potential to achieve attractive returns from this initiative, particularly in the areas of healthcare and biotechnology. The first two venture capital firms were chosen in 2000.

Subsequent allocations to this portfolio have increased SWIB's total commitment to $180.0 million as of December 31, 2006. This has made additional funds available for investment and has enabled SWIB to pursue investment opportunities in other early stage ventures in Wisconsin and the Midwest.

It typically takes a number of years for venture capital investments to achieve positive returns. At the time the Wisconsin Private Equity Portfolio was initiated, SWIB observed that the venture capital infrastructure was not well developed in Wisconsin, and that this would further increase the amount of time required for venture capital firms to invest funds and achieve favorable returns.

Although the Wisconsin Private Equity Portfolio began in 2000, a large portion of its current funding was not allocated until 2004 and 2006. Its performance track record is relatively short, but has tended to follow the direction anticipated by SWIB. While returns since the inception of the portfolio were negative at the end of 2006, and continue to lag the vintage year benchmark, there has been a notable improvement in 2007 as a number of investments came to fruition and were sold. As of June 30, 2007, the portfolio's six-month return was 23.2% compared to 13.8% for the benchmark. The 12-month return was 18.3% compared to 16.2% for the benchmark.

Domestic Equities Portfolios
Domestic equities (stocks) represent SWIB's largest asset class. At the end of 2005, SWIB's aggregate returns for domestic equities were ahead of the one-, five- and ten-year benchmarks. In 2006, the ten-year return was ahead of the benchmark; however, performance has lagged the benchmark for more recent time periods.

SWIB uses several styles of internal and external management for domestic equities in order to add value, provide diversification and manage risk. Two of SWIB's three internal, actively managed large company equities portfolios beat their one-year benchmark in 2006. However, these portfolios have found it challenging to consistently outperform the market over longer periods of time.

The audit provides a good summary of the intensive attention SWIB's new Chief Investment Officer and many others at SWIB have given to the reorganization of these portfolios to improve overall performance and consistency of returns. While the reorganization process is already underway, full implementation is dependent on the expanded budget authority provided in the 2007-09 biennial budget bill as well as the approval of additional positions by the Joint Committee on Finance under s. 16.505. We anticipate that this initiative will result in increased returns and a net cost savings as SWIB is able to move assets back from external management to internal management.

Variable Fund Performance

The Variable Fund of the WRS represents 8% of all assets managed by SWIB and is almost entirely invested in public equities. The Variable Fund outperformed its benchmark in six of the eight measurement periods during the 2005 and 2006 timeframe covered by the audit. In addition, as of December 31, 2006, the Variable Fund's one- and three-year returns surpassed the returns of the Core Fund. However, public equities returns for the Variable Fund lagged the returns for the portion of the Core Fund invested in public equities.

The equities performance difference between the Core and Variable Funds is largely because the split between domestic and international equities investments differs between the two funds. At the end of 2006, 23.1% of the Variable Fund's equities investments were in international equities compared to 39.7% of the Core Fund's equities investments. The current splits are intended to achieve an optimal balance between risk and return for each fund and are guided by analysis from SWIB's asset allocation consultant. This analysis is included in the consultant's presentation to the Board and in staff's final asset allocation recommendations that are annually approved by the Trustees.

Over the long term, domestic and international equities have achieved similar returns, but they have differed substantially in shorter, five-year time periods. Further, equities have consistently exhibited at least 50% higher risk (volatility) than a broader mix of assets like those of the Core Fund. Core Fund investment returns are smoothed over a five-year period while the Variable Fund's annual returns are passed directly through to the Fund participants. These factors are taken into account in the differing equity allocations across the two funds.

We will review Variable Fund investment policies as part of our annual asset allocation evaluation with the Board this fall. SWIB will also examine the proportionate allocation of equity portfolios across the trust funds, including any artificial barriers that may be contributing to differing allocation of equity investments between the two funds.

In summary, we appreciate the constructive observations made in the audit. Our more detailed response to the individual recommendations is attached to this letter. We look forward to further discussions with your staff and the Joint Legislative Committee on Audit.

Sincerely,

Keith Bozarth
Executive Director

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Attachment
SWIB Response to Audit Recommendations

1. **SWIB should re-evaluate its policies and procedures for making allocation and investment decisions that affect the Variable Fund.**

   Response: We will re-evaluate our established process for Variable Fund allocation and investment decisions in our annual asset allocation review with the Board this fall.

   The Variable Fund met or surpassed its benchmark in six of the eight time periods covered in the audit. The Variable Fund's one- and three-year returns surpassed the returns of the Core Fund as of December 31, 2006. However, public equities returns for the Variable Fund lagged the returns for the portion of the Core Fund invested in public equities. The equities performance differential between the Core and Variable Funds is largely because the split between domestic and international equities investments differs between the two funds. The current splits are intended to achieve an optimal balance between risk and return for each fund and are guided by analysis from SWIB's asset allocation consultant, reviewed by staff and approved by the Trustees.

   Over the long term, domestic and international equities have achieved similar returns, but have differed substantially in shorter, five-year time periods. Further, equities have consistently exhibited higher risk than a broader mix of assets like those of the Core Fund. Core Fund returns are smoothed over a five-year period while Variable Fund's annual returns are passed directly through to the Fund participants. These factors are taken into account in the differing equity allocations across the two funds.

2. **SWIB should review closely the process and decisions made by investment staff in the placement of investments into transition portfolios.**

   Response: SWIB believes that the placement of investments into transition portfolios has been appropriate. However, we will review current policies and practices with the Board.

   Transition portfolios are only established when there is a change in the management of a portfolio or asset class. When a new portfolio manager assumes responsibility, he or she is allowed to select which assets from the existing portfolio to retain and which to sell. Due to the illiquid nature of private markets, the liquidation takes longer than it does for public markets. The transition portfolio may also continue to hold assets that differ from the strategy employed by the current portfolio manager. Any assets retained by the new portfolio manager are transferred to the new portfolio at market value.

   With respect to the real estate transition portfolio, the qualitative component of the portfolio managers' incentive compensation has been adjusted over time to acknowledge their contributions to managing the liquidation of the transition portfolio. The real estate transition portfolio is included in the quantitative component of the incentive compensation for the Private Markets Managing Director. The real estate transition portfolio, as well as the newly established real estate portfolios, have had strong absolute returns and surpassed performance benchmarks since they were established.

3. **SWIB should regularly analyze the continuing appropriateness of its current benchmarks for the real estate equity portfolios and evaluate whether other options are available that may better match the strategies and holdings of the portfolios.**

Response: SWIB agrees with the recommendation. With the assistance of a consultant, on a regular basis the Board reviews the appropriateness of all benchmarks and will continue to give attention to the real estate benchmarks.

In anticipation of an allocation to global real estate securities portfolios, the consultant's June 2007 report recommended a change to the real estate investment trust (REIT) benchmark to include both a US and a global component. However, the report concluded that there is still no suitable benchmark for international private real estate investments, and recommended that SWIB continue with its current benchmark. Most foreign assets in SWIB's real estate funds are hedged back to the dollar, meaning that SWIB's returns do not arise from US dollar and foreign currency exchange movements.

SWIB's current benchmarks are in the mainstream of public funds; however, we will continue to review them on a regular basis for any improvements that should be made.

4. **SWIB should report on its success in increasing its investments in private markets in its annual report to the Legislature.**

   Response: SWIB will provide this information in our next annual report.

   SWIB's target allocation to private markets (private equity, private debt and real estate) is 10% of Core Fund assets. The targets for private markets and other asset classes are intended to achieve optimal long-term returns for the Fund while reducing risk through diversification. These targets will be reviewed again this fall as part of SWIB's asset allocation exercise.

   SWIB's actual investments in private markets are below our current target. Achieving the target allocation to private equities over the past several years has been difficult due to a significant return of capital from existing holdings, and fewer new commitments while SWIB was changing the private equity strategy away from direct investments. However, we significantly increased our private equity commitments in 2005 and 2006 and have implemented a number of strategies to accelerate real estate investments as well. As of December 31, 2006, SWIB's exposure to private markets, including unfunded commitments, exceeded 10% of Core Fund assets. This is an important milestone on the way to having invested capital reach our targets.

5. **SWIB should highlight the performance of its Wisconsin private equity portfolio in its annual report to the Legislature.**

   Response: SWIB will provide this information in our annual report.

   Private equity investments often take a number of years to achieve positive returns. The Wisconsin Private Equity Portfolio began in 2000 but a large portion of its current funding was allocated in 2004 and 2006. Therefore, its performance track record is relatively short. While returns since the inception of the portfolio continue to lag the vintage year benchmark, there has been a notable improvement in 2007. Preliminary returns as of June 30, 2007, indicate that the six-month return was 23.2% compared to 13.8% for its benchmark. The 12-month return was 18.3% compared to 16.2% for the benchmark.