OHIO PUBLIC EMPLOYEES RETIREMENT SYSTEM
Investment Division

277 East Town Street, Columbus, Ohio 43215
www.opers.org 800-222-7377

OPERS

Investment Plan *2005*

14 December, 2004

Domestic Equity	Global Bonds	Int'l Equity	Real Estate	Private Equity	Fund Services	DC Plans	Total Fund

2004 Review

OPERS Strategic Plan Objectives

The OPERS 2004 Strategic Plan lays out 21 key performance benchmarks, of which three relate to Investments. The three investment-related measures are listed below, with a status update:

1. Comprehensive Investment Policy with appropriate benchmarks and procedures for review and performance. Measures of performance include an annual review of investment policies and a quarterly review of performance.

   Status: Investment policies were updated and expanded as needed during the year. Changes were sought to the Domestic Equity and International Equity Policies to expand the use of active management. The Securities Lending Policy was modified to allow for improved utilization of OPERS securities, thereby improving projected lending income. A new Opportunistic Policy was created to allow for innovative investments that may potentially increase the long-term return of the plan. A Health Care Investment Policy was created to guide the management of the health care assets. The OPERS Board approved a revised Emerging Manager Policy to govern the hiring and monitoring of Ohio, minority, and emerging managers. Finally, the Private Equity Policy was modified to change the target portfolio structure.

2. Overall investment performance, which exceeds the returns of the OPERS performance benchmark, net of expenses. Measures of performance include the total fund return, net of expenses, compared to the composite benchmark.

   Status: Through the third quarter, the total fund return trails the composite benchmark by about 30 basis points (bps). There are two primary reasons for the shortfall this year. First, the plan is in the process of transitioning the real estate portfolio from an opportunistic, bottom-up approach, to a more strategic, top-down orientation. In the first part of the transition, OPERS reduced its allocation to real estate by selling assets that did not fit with the new strategy. The reduced exposure to real estate during a time when real estate is the strongest performing asset class has resulted in about 20 of the 30 bps of underperformance. The balance of the underperformance is due to OPERS being overweight to domestic and international stocks during a period of time when stocks have struggled to post positive year-to-date returns.

3. Overall investment performance that, when adjusted for risk, is competitive with a peer group of large public pension plans. Measures of performance include the ranking of total fund performance, net of fees, compared to an appropriate peer group.

   Status: Through third quarter 2004, for the one-year period the plan performed in the top quartile of the State Street Public Fund > $10 billion universe. For the three-year and five-year periods, the fund ranked in the top quartile and top half, respectively.

The 2004 Annual Investment Plan Objectives

The 2004 Annual Plan listed a number of objectives within three categories; asset management, resources, and initiatives. The following is a summary of our progress.

1. **Asset Management**

a. Performance Objective - We expected to produce 45 basis points of out-performance, primarily through active management strategies within the asset classes.

Status:
Through the third quarter, the plan was trailing its composite benchmark by 30 basis points, as described in the previous section. While the asset classes are generally performing in line with expectation, the real estate transition and the equity bias in the portfolio have detracted from performance thus far this year.

b. Economic Outlook and Re-balancing Bias - We surmised late in 2003 that most of the expected improvement in the economy was already reflected in asset prices, and that capital gains would be much more difficult to achieve in 2004 than in 2003. In light of that expectation, we reasoned there would be limited opportunities for tactical asset decisions. Our forecast has generally proven correct.

Status:
In the 2004 plan we anticipated that the equity markets would post gains of 6 to 8% for the year. Thus far, our projections have proven somewhat optimistic - the US equity market is up by about 2% through the end of September, while the international markets in aggregate are up about 3%. We have not made any tactical asset adjustments in 2004.

2. **Resources**

a. Human Resources - We entered 2004 with 55 existing staff, 3 vacant positions, and five newly-budgeted positions.

Status:
At November 1, our staffing was composed of 46 professionals and 10 support, for a total of 56 persons. We have six vacancies (Assistant Investment Officer - External Management, Assistant Investment Officer - Fund Management, Quantitative Analyst, and three Sr. Investment Analysts). The authorized staff is 61 persons. We continue to emphasize higher productivity from existing staff as opposed to adding positions. In 2004, we transferred one individual from International Equity to Global Bonds, eliminated one professional and one support position through attrition.

b. Operating Costs - In the 2004 Plan, we estimated that the total costs to operate the division would be approximately 18 basis points on a then asset base of $56.4 billion, or approximately $100.5 million.

Status:
The CEM study for 2003 (conducted in 2004) found our costs for 2003 to be 18.7 basis points or $99 million. The CEM study also estimated that our implementation of the investment management program saves OPERS about 1.4 basis points per annum, or the equivalent of approximately $7.5 million. We continue to focus on cost control. We have held staffing flat for three years. Our operating budget (including personnel compensation) for 2005 is essentially flat with 2004, which in turn was flat with 2003, after adjusting for incentive compensation changes. Additionally, we have negotiated reduced external asset manager fees and vendor charges in a number of circumstances.

3. Initiatives

In the text below, we provide an update on eight of the seventeen high-level initiatives that were outlined in the 2004 Annual Plan:

a. Organizational Structure Review - The organizational change discussed with the OPERS Board in the 2004 Strategic Plan, has resulted in the creation of two new positions, for which recruiting efforts are currently underway - an AIO of External Management, and an AIO of Fund Management. We envision concentrating external public market manager oversight under the external management unit, and risk management and research and development activities under fund management. We expect these positions to be filled in 2005 and realignments of reporting responsibilities to follow.

b. Opportunistic Policy - In October, the OPERS Board approved a new Opportunistic Policy to guide OPERS' investments in non-traditional areas that have the promise to benefit performance over the long term. During the year, the OPERS Board reviewed two possible investments under the policy: hedge funds and commodities.

c. Global Investing - Due to pending organizational changes, we deferred this project until the external management unit is created and reporting relationships have been reassigned.

d. Domestic Equity: Enhanced Strategies - During the year, the OPERS Board approved an increase in the share of active management within domestic equity from a limit of 30% to a new limit of 40%. The OPERS Board also approved the search for up to three enhanced index managers. The manager search is underway.

e. Domestic Equity: Portfolio Tilts - Following a multi-year period of small stocks out-performing large stocks, the domestic equity staff began to modestly tilt the portfolio to have a bias toward larger stocks.

f. Global Bonds: Manager Searches - The Global Bond Department conducted two mandates in 2004; a high yield mandate, and a core mandate. In the search for a third high yield manager, OPERS selected Goldentree Asset Management to complement its existing high yield managers. In the core search, OPERS selected Fidelity and Smith Breeden to replace terminated managers Met West and Morgan Stanley.

g. Real Estate: Manager Searches - The real estate staff researched opportunities in 2004 that resulted in OPERS adding money to two open-end real estate funds and three closed-end opportunity funds. Open-end and opportunity funds provide OPERS a way to gain real estate exposure and incremental return.

h. Private Equity: Co-investing - Co-investing was deferred until 2005 as the staff focused on increasing the commitment pace and re-focused on Ohio/midwest Policy requirements.

i. Private Equity: Direct secondaries - Direct secondaries was eliminated as an initiative as the market opportunities have diminished.

2005 Plan Overview

The 2005 Plan is organized along three main sections; asset management, resources, and initiatives.

1. **Asset Management**

a. Performance Objective - Using two separate external models (Ennis Knupp + Associates and Barclays Global Investors) to evaluate asset class composition and expected returns, we have arrived at an active management out-performance goal for 2005 of 43 basis points. The out-performance goal reflects our expectations of manager / portfolio alpha (excess return over a benchmark) derived from historical data, tempered by judgment and the characteristics of our asset management policies and strategies (active/passive split, sector ranges, constraints).

b. Risk - There are three distinct sources of return and risk that we will measure and monitor:

1. Policy Risk - This is the risk inherent in the policy asset mix adopted by the OPERS Board. The mix has an expected return and variability given the volatility and correlations of the underlying asset classes. The expected return of the OPERS asset mix is 5.91% for 2005 (and 6.9% per annum long-term) with an estimated variability of 10.75%. This means that two-thirds of the time, actual annual returns are expected to range between -3.85% and +17.65%.

2. Tactical Risk - This is the added risk introduced into the variability of returns by allowing the actual asset mix to deviate from the policy asset mix. Our modeling indicates that the expected return of tactical allocation is 3 basis points, with an estimated variability (tactical risk) of 60 basis points. The estimated information ratio of tactical allocation (the expected return divided by the expected variability of return) is 0.05.

3. Active Risk - This is the risk introduced through the use of active management within asset classes and at the portfolio level. It is risk that arises from asset class and portfolio compositions that are dissimilar to underlying benchmarks. Our modeling of the expected composition of asset classes and portfolios indicates an expected active return of 40 basis points, with an estimated variability of returns (active risk) of 40 basis points. The estimated information ratio of active management is 1.00 (the expected return divided by the expected variability of return).

In sum, the total expected return of the OPERS fund in 2005 is the expected policy return of 5.91%, plus 3 basis points from tactical return, plus 40 basis points from active management, for a total of 6.34%. The total risk that will be taken to achieve this return is the combination of the policy risk of 10.75%, the tactical risk of 60 basis points, and the active risk of 40 basis points, for a total risk of 11.30%.

c. Economic Outlook and Re-balancing Bias - The economy should continue to expand at a rate of 3% or more in 2005, supported by continued monetary stimulus (historically low interest rates) and accommodative fiscal policies (high budget deficits). The economy has thus far weathered high oil prices and rising commodity prices. A reduction in input costs would boost corporate profit growth and also provide the confidence to corporate America to begin to spend its ever-swelling cash horde on new investments and acquisitions. We remain upbeat on the outlook for equity markets in 2005, and expect gains of 7% and 8% in both US and international stocks, respectively. We expect that the bond market will provide only modest returns for the year as we continue to anticipate a general rise in interest rates; the Fed will continue the process of removing its insurance policy of low interest rates as recession fears fade.

2. **Resources**

a. Human Resources - The Investment Division currently has 62 authorized positions, composed of 56 filled positions and six vacancies. We have budgeted for one additional position in 2005.

b. Operating Costs - The Investment Division submitted an operating budget (including personnel costs) for 2005 that is flat with the original 2004 budget. The flat budget reflects the division's efforts to manage our internal investment management expenses. We estimate that the total cost to manage the assets in 2005 will be 18.1 basis points, or $113.4 million. The increase in the basis point fee reflects higher external management fees due to the growth in the asset base over the last year.

3. **Initiatives**

a. Health Care Split - Staff will undertake the separation of pension and health care assets beginning early in the year, and form a new health care portfolio. This multi-year undertaking will allow for health care assets to have a risk and return profile more reflective of the characteristics of the health care plan, while utilizing the same managers and portfolios as the pension assets, and benefiting from the same low cost investment structure.

b. Culture Development - Senior staff will continue to work on the multi-year implementation of the division's vision and values that were preliminarily identified during sessions in October 2004. The implementation phase is intended to assure that the vision and values agreed to by staff are woven into the fabric of the operations of the investment program, from the employee evaluation process, to the promotion process, and on to include a formal employee development process.

c. Strategic Research - During 2004, the investment staff conducted a series of internal strategic planning meetings to identify investable themes to position the fund for long-term gain. The three main themes that were identified are technology, rising middle class in developing countries, and developed market demographics. A number of teams will be formed to research various aspects of these themes including investement opportunities. Some of the ideas may lead to new investments under the Opportunistic Policy or tilts within asset class policies.

d. Continuation of Alpha Initiatives - In 2004, staff undertook numerous research initiatives to identify ways to expand incremental return. A number of the initiatives are currently underway and will be completed in 2005, including the hedge fund project, the addition of a high yield Commercial Mortgage Backed Securities (CMBS) manager, the commodities project, and research on active currency management.

e. Domestic Equity: Internal Management of Synthetic Enhanced Indexing - The Domestic Equity Department has proposed to research the investment processes and skills that are required to successfully manage a synthetic-based mandate. Staff will determine if the futures and the cash component of this strategy can be managed by internal staff.

f. Domestic Equity: Manager Search - The Domestic Equity Department will conduct a search in 2005 for Ohio-qualified, minority and emerging (OME) managers to add alpha.

g. Domestic Equity: Dynamic Allocation - The Domestic Equity Department has been experimenting with a risk budgeting process that would lead to a more dynamic or fluid allocation of the respective active managers/portfolios. The focus of the quantitative staff will be on delivering a higher information ratio for this component.

h. Global Bonds: Manager Search - The Global Bond Department initiated alpha projects in 2004 to add incremental return. To the extent these initiatives have long-term alpha potential, the Global Bond Department will conduct a search in 2005 to identify skilled managers.

i. Global Bonds: Attribution Model - The Global Bond Department has proposed to develop a performance attribution model for the internal portfolio. This should result in an improved risk/return profile.

j. International Equity: Policy and Portfolio Allocations - The International Equity Department will review the portfolio's small capitalization and emerging market policy target allocations for 2005. Additional, the International Equity Department will evaluate currency exposure, risk, and existing manager allocations.

k. Real Estate: Increase Exposure and Returns - The Real Estate Department will analyze ways to increase exposure via stable assets. Through the end of 2008, an estimated $4 billion is scheduled to be invested to achieve the target allocation of 9%. Apart from increasing exposure, the focus of the team is on increasing returns expected to take form in enhanced and specialty areas, international and mezzanine investments, along with savings through operations.

l. Private Equity: Co-investing - The private equity staff anticipates developing a co-investment plan by mid-year, and presenting such a plan to the Investment Committee. This plan will set forth short- and long-term objectives for successful implementation.

Neil V. Toth

ENNISKNUPP

November 22, 2004

Board of Trustees
Public Employees Retirement System of Ohio
277 East Town Street
Columbus, OH 43215-4642

Dear Ladies and Gentlemen,

We have reviewed OPERS' Investment Plan, 2005. Its essential contents include:

Governance structure
Staffing
Target asset allocation and ranges
Performance benchmarks
Expense budget
Risk budget
Major initiatives

In our opinion, it describes the investment program in prospect for 2005 in a manner consistent with existing policies and board directives as well as plans and estimates that have already presented to the Board.

Sincerely,

Richard Ennis

Richard M. Ennis, CFA
Principal

RME:cs

Ennis Knupp + Associates
10 South Riverside Plaza, Suite 700
Chicago, Illinois 60606-3709

vox 312 715 1700
fax 312 715 1952
www.ennisknupp.com

MEMORANDUM

To: Ohio Public Employees Retirement System ("OPERS")

From: Pacific Corporate Group ("PCG")

Date: November 5, 2004

RE: 2005 Investment Plan

PCG has worked closely with OPERS' Staff in the process of developing the 2005 Annual Plan. In particular, PCG performed multi-scenario investment pacing analyses with respect to reaching the private equity program's targeted allocation of 4%. Factors involving risk, returns, sub-sector correlation, commitment size, relationship exposure and number of total relationships were considered, among others.

PCG is comfortable with the plan as presented and believes it accurately reflects the private equity program's capital and diversification requirements within the context of the market opportunity.

The Townsend Group

INSTITUTIONAL REAL ESTATE CONSULTANTS

Main Office:
Skylight Office Tower
1660 West Second Street
Suite 450
Cleveland, Ohio 44113
Telephone: (216) 781-9090
Fax: (216) 781-1407

Branch Office:
One Magnificent Mile
980 North Michigan Avenue
Suite 1400
Chicago, Illinois 60611
Telephone: (312) 214-3590
Facsimile: (312) 214-3510

November 22, 2004

Investment Committee
Public Employees Retirement System of Ohio
277 East Town Street
Columbus, Ohio 43215-4642

RE: 2005 Annual Real Estate Plan

Dear members of the Investment Committee:

The Townsend Group, as real estate consultant ("Townsend") to the Public Employees Retirement System of Ohio ("OPERS"), has reviewed the 2005 Real Estate Department Annual Real Estate Plan ("2005 Annual Plan). We have reviewed the 2005 Annual Plan as a component of the overall 2005 Investment Plan prepared by the Ohio PERS Investment Division.

We note the principal objectives of the 2005 Annual Plan are consistent with Real Estate Policy and Strategy ("Policy") approved by OPERS in 2002 and the Real Estate Implementation Plan prepared by Staff and updated in September and presented to the Investment Committee in October 2004 ("Updated Implementation Plan").

We note the projections for activity in 2005 and later periods build upon the Updated Implementation Plan presented in October. At the October meeting we noted the historical challenges faced in implementing the Policy due to the continued strength of the capital markets favoring Stable Return properties and the challenges in acquiring such investments, despite active efforts by your advisors and Staff to find suitable investments. In addition, OPERS has been an active seller during this period of strong capital flows to real estate. As a result of these trends, and future assumed plan asset growth, we and the Staff projected a need to extend the period to achieve the projected transition to meet the Policy targets to the end of 2008.

We have discussed the source of the information for the projections, and based upon our review, the projected activity appears reasonable for your portfolio, especially in light of the pending activities to both sell current investments (which have been considerable) and the challenges of making new investments. We note the 2005 Annual Plan calls for fewer discretionary sales of assts, as most of the sales have occurred in the portfolio as Staff has taken advantage of the market conditions to cull the portfolio.

The 2005 Annual Plan continues a number of initiatives undertaken by Staff and Townsend to increase both the real estate exposure and enhance the returns generated by the portfolio. We expect OPERS will make significant commitments to open end commingled funds ("OECFs") to further deploy capital in the Stable Return sector, one of the components facing the largest funding need over the next several years. The OECFs provide OPERS with the ability to access certain property types not typically found in its traditional separate account investing (large CBD office buildings and dominant regional malls), plus a relatively high degree of liquidity (in the present market conditions).

In addition to deploying Stable Return capital in the OECFs, the 2005 Annual Plan also contemplates addition investing, as opportunities arise, in the Enhanced and High Return sectors, including traditional "opportunity funds", global real estate funds and potentially specialized investments, such as mezzanine investments.   These investments will help accomplish both objectives of increasing the real estate exposure and enhancing expected returns.

While we believe that over the longer term the recommended structure in the Policy will provide attractive risk adjusted returns that meet the goals and objectives of the real estate program, we remain advocates of a deliberate and disciplined investment program. We concur with taking advantage of the opportunity to capitalize upon the favorable capital markets for real estate by implementing selective sales of certain types of investments. We also believe a disciplined approach to making new investments is prudent in light of the same strong capital markets demand for well leased real estate. Such an approach is preferable to either forcing the liquidation of assets to achieve the Policy ranges (particularly in the Enhanced and High Return sectors), or forcing capital into the Stable Return sector that through most of the last two years has not been attractively priced. Therefore, we believe the targets set for investment activity in the 2005 Annual Plan are reasonable but achieving such goals will be subject to market opportunities in 2005.

I will be attending the December 14, 2004 Investment Committee meeting and will address any questions you may have. In the interim, please feel free to contact me if you have any questions.

Very truly yours,

The Townsend Group

Frank J. Blaschka

Frank L. Blaschka
Principal

Cc: Mary Beth Shanahan

http://ttgsql/client portal/document library/OPERS/Correspondence/2004/2005 Annual Real Estate Plan Review 11 22 04.doc

Summary

Unless markets improve rather dramatically following the election, 2004 will prove to be the lackluster year that we anticipated as we wrote the 2004 Plan. Coming off a stellar year in 2003, the fund is likely to produce single-digit absolute returns for 2004. These results, though not inspiring, should come as no surprise as we continue to manage the fund for the long-term. In some years, like 2003, capital markets provided an opportunity for strong absolute returns and incremental gains through active and tactical management, while in other years, like 2004, opportunities can be limited and fleeting. During 2004, we chose to maintain our asset weightings and not make any material tactical asset allocation decisions. We continue to believe that the asset mix is properly positioned to benefit from the eventual easing of terrorism fears, oil prices, pre-election uncertainty, and concerns over the path of the war with Iraq. There are many fundamental reasons to believe that the financial markets are poised to move higher in 2005, and we are positioned for such an eventuality.

The Investment staff undertook numerous, important initiatives in 2004 that continue to build the foundation for stronger long-term returns and a leading investment program. Below we have listed a few:

Investment Division Progress Update

Divisional

- Engaged the staff in a discussion of the division's vision and values. We aspire to be a leading investment management program, and the establishment of our vision and operating protocols is a foundational step in that regard.
- Continued to develop an organizational model that will permit investment agility, accountability, and a proper level of specialization. We are in the process of adding an External Management unit for public markets, and a Fund Management unit to specialize in risk monitoring.
- Continued to refine investment strategic planning, working with the senior management team and the division's managers.
- Gained OPERS Board approval of an Opportunistic Policy to allow for investments in newer and innovative vehicles that do not fit neatly within established asset classes.
- Obtained OPERS Board approval of a policy to address the hiring of Ohio, midwest, emerging, and minority managers.

Asset Management

- All major asset classes are expected to produce positive incremental return in 2004.
- Continued to enjoy competitive performance with internally managed funds.
- Continued to develop the Private Equity program with $680M of new commitments expected in 2004.
- Continued to reposition the Real Estate program through initial investments in open-end and opportunity funds.
- Added three managers in Global Bonds to position the asset class for improved performance.
- Presented to the OPERS Board a research and an implementation strategy for high yield commercial mortgage backed securities.
- Initiated a search for enhanced index managers for the domestic equity asset class.
- Provided the OPERS Board with initial and follow-on implementation presentations for Opportunistic Class investments in hedge funds and commodities.
- Added two securities lenders for mortgage backed securities, and are in the process of developing an auction process for securities lending to substantially boost lending income.

Total Fund

The following sections of this Total Fund report summarize the asset management characteristics of the overall program; the resources needed to run the program, and lastly, the major initiatives that we propose to undertake in the coming year.

Asset Management

Asset Size and Expected Growth

The OPERS investment fund had assets of $59.8 billion at September 30, 2004. The expected average annual return of the OPERS asset mix over a long-term horizon is 7.26%, with an expected volatility of 12.26% (EK+A policy estimates). The net cash flow of the pension fund in 2005 (contributions less benefit payments and administrative expenses) is estimated at ($1.453) billion. The following table summarizes these statistics to arrive at a probability estimate of the ending value of the fund at December 31, 2005.

	Estimates of Investment Portfolio Ending Market Value		
	Est. Year End 2005		
	Costs in billions of dollars		
	Pessimistic Case	Base Case	Optimistic Case
Est. Beg. Market Value (9.30.04)	$ 59.815	$ 59.815	$ 59.815
Expected Return %	-0.050	0.073	0.195
Expected Return $	-2.991	4.343	11.676
Est. Net Cash Flow	-1.453	-1.453	-1.453
Est. End. Mkt. Value (12.31.05)	**$ 55.371**	**$ 62.705**	**$ 70.038**

The table provides a confidence interval of the ending value of the investment portfolio at December 31, 2005. There is a 66% probability that the ending value will be between the pessimistic estimate and the optimistic estimate. Statistically, there is a 17% chance that the ending value will be below the pessimistic estimate, and a 17% chance that the ending value will be greater than the optimistic estimate.

Asset Allocation

The target asset allocation and ranges for 2005 are shown in the following table:

Asset Class	Target	Range	Peer Group*
Domestic Equity	46%	+/- 3%	44%
International Equity	20%	+/- 3%	14%
Real Estate	9%	+/- 4%	6%
Private Equity	1%	+/- 3%	6%
Subtotal Equity	**76%**		**70%**
Global Bonds	23%	+/- 3%	29%
Cash	1%	NA	1%
Subtotal Debt	**24%**		**30%**
Total Fund	**100%**		**100%**

*Peer Group names provided at the end of Total Fund section.

The preceding table shows that we have a level of exposure to domestic stocks that is consistent with our peer group. However, we have a materially higher commitment to equities overall versus our peer set due to our heavier allocation to international stocks.

The pension asset-liability study completed in 2004 affirmed that the level of risk being assumed in the asset mix is appropriate for OPERS' characteristics and circumstances. Throughout 2005 and beyond, staff will work with the organization's consultants to recommend certain enhancements to the asset mix and asset management strategies to raise the expected return within the risk budget. While not all of these actions have as yet been identified, some are described in the asset class sections of this report.

Composition of Investment Portfolio

The following table displays OPERS' composition of internal and external asset management by asset class and in total, and compares our composition to a peer group of the top ten public funds.

	Internal Management		External Management	
	OPERS	Peer Group	OPERS	Peer Group
Domestic Equity	85.9%	58.6%	14.1%	41.4%
International Equity	0.0%	20.5%	100.0%	79.5%
US Fixed Income	85.2%	89.1%	14.8%	10.9%
International Fixed Income	NA	23.1%	NA	76.9%
Real Estate	18.9%	16.5%	81.1%	83.5%
Private Equity	0.0%	33.3%	100.0%	66.7%
Weighted Averages	**61.8%**	**57.8%**	**38.2%**	**42.2%**

The table shows that OPERS is similar to its peer group in the high use of internal management for domestic equity and bonds, and the high use of external management for the specialty asset classes such as real estate and private equity. We are somewhat dissimilar to the peer group in using external asset management exclusively in the international equity area. Three of the funds in our peer group listed emerging market debt under the international fixed income category, whereas OPERS has combined this component under US fixed income. Overall, our internal / external management mix is very close to the average for the peer group.

Our relatively high degree of internal asset management within the domestic equity and bond areas continues to be an important strategic advantage to OPERS in a number of ways:

1. Flexibility: Rebalancing decisions are executed more efficiently and effectively. Since we have control over the assets, we can take advantage of market dislocations to reposition our portfolio. We are not subject to an external manager's constraints, allowing us to be truly opportunistic.

2. Cost Control: Asset management is a high margin business, and over the long-term, asset management fees create a material drag on net returns. As long as internally-managed portfolios generate the expected excess return, there is a double benefit to OPERS in performance and cost savings. External asset management fees range from a multiple of 6x to 20x the cost of managing assets internally.

3. Market Insight: Conducting some level of asset management internally also plays an important role in forming our judgments and decisions across a number of dimensions:

   a. External Manager Hiring and Oversight - Staff is better able to assess external manager strengths and weaknesses as a result of our direct asset-management experience and knowledge.

   b. Public / Private markets - In the past year, there have been numerous occasions when staff has leveraged insights from one asset class to aid decision-making in another asset class. For instance, we have come to appreciate that our nascent private equity efforts can assist our internal asset management, and vice versa.

The following table displays OPERS' composition of active and passive asset management by asset class and in total, and compares our composition to a peer group of the top ten public funds.

	Active Management		Passive Management	
	OPERS	Peer Group	OPERS	Peer Group
Domestic Equity	30.2%	36.8%	69.8%	63.3%
International Equity	78.6%	75.4%	21.4%	24.6%
US Fixed Income	99.4%	79.1%	0.6%	20.9%
Weighted Averages	**54.3%**	**62.2%**	**45.7%**	**37.8%**

The table shows that OPERS is lower than the peer group in the use of active management in domestic equity while it is higher than the peer group in international equity and US fixed income. While our greater use of passive management contributes to our lower implementation costs, as described later in this report, it may also somewhat constrain our ability to generate excess return. In 2004, staff evaluated the active / passive split in domestic equity and made recommendations for enhancing returns by adjusting from the 30 / 70 split to a 40 / 60 split in 2005.

A list of the peer groups used in the analysis is found on page 27.

Expected Fees

The following table depicts the expected annual external asset management fees per asset class, and for the fund in total. The estimate of fees is based on the "Base Case" estimate of year-end market value of $62.705 billion.

	Estimate of External Management Fees in Dollars and Basis Points		
	Est. Year End 2005		
	Average Assets External ($ billions)	Estimated Annual Fee ($ millions)	Fees of External Assets (Bps)
Domestic Equity	4.424	12.897	29.2
Global Bonds	2.190	7.734	35.3
International Equity	12.541	31.289	24.9
Real Estate	3.741	18.546	50.0
Private Equity	0.500	25.000	500.0
Short-Term Cash	0.000	0.000	0.0
Total Fund	**23.396**	**95.466**	**40.8**

We expect to incur $95.466 million in manager and advisor asset management fees in 2005, representing a cost of 40.8 basis points. Of the total amount of external fees, 59% or $56.289 million is due to two asset classes, International Equity and Private Equity. Over time, our external asset management fees will gradually increase in absolute dollars and in basis points of the total fund as we move toward our target allocation of 4% to private equity, a fee-intensive asset class.

Fund and Asset Class Strategies

Return and Risk

The investment portfolio's performance objective is to earn a long-run rate of return that meets or exceeds the return of the policy benchmark. Where markets are generally efficient, such as domestic equity and domestic bonds, our out-performance goals are modest. In less efficient markets, such as International Equity and Real Estate, our goals for incremental return above the indices are more aggressive.

The expected return of the OPERS portfolio in 2005, based on internal estimates of asset class returns, ranges from 2.12% to 9.95%, with a single-point, median estimate of 6.34%. The return estimates below were arrived at using the following assumptions based on individual asset class return expectations developed by internal staff:
The single-point estimate of return of 6.34% is composed of an expected return of 5.91% on the policy mix, an additional 3 basis points from tactical decisions (over-weighting and under-weighting asset classes), and an additional 40 basis points through active management within portfolios and asset classes.

2005 Return Assumptions	Return				
	Pessimistic	Base	Optimistic	Risk	I.R.
Domestic Equity	3.00%	7.00%	10.00%		
International Equity	4.00%	8.00%	12.00%		
Global Bonds	-1.00%	2.00%	5.00%		
Real Estate	5.00%	7.00%	9.00%		
Private Equity	-3.00%	-2.00%	-1.00%		
Cash	2.00%	2.00%	2.00%		
Composite Return	**2.39%**	**5.91%**	**8.97%**	**10.75%**	
Tactical Return	-0.27%	0.03%	0.18%	0.60%	**0.05**
Active Return	0.00%	0.40%	0.80%	0.40%	**1.00**
Total Return	**2.12%**	**6.34%**	**9.95%**	**11.30%**	

There are three distinct sources of return and risk which we will now measure and monitor:

1. Policy Risk - This is the risk inherent in the policy asset mix adopted by the OPERS Board. The mix has an expected return and variability given the volatility and correlations of the underlying asset classes. The expected return of the OPERS asset mix is 5.91% for 2005 (and 6.9% per annum long-term) with an estimated variability of 10.75%. This means that two-thirds of the time, actual annual returns are expected to range between -3.85% and +17.65%.

2. Tactical Risk - This is the added risk introduced into the variability of returns by allowing the actual asset mix to deviate from the policy asset mix. Our modeling indicates that the expected return of tactical allocation is 3 basis points, with an estimated variability (tactical risk) of 60 basis points. The estimated information ratio of tactical allocation (the expected return divided by the expected variability of return) is 0.05.

3. Active Risk - This is the risk introduced through the use of active management within asset classes and at the portfolio level. It is risk that arises from asset class and portfolio compositions that are dissimilar to underlying benchmarks. Our modeling of the expected composition of asset classes and portfolios indicates an expected active return of 40 basis points, with an estimated variability of returns (active risk) of 40 basis points. The estimated information ratio of active management is 1.00 (the expected return divided by the expected variability of return).

In sum, the total expected return of the OPERS fund in 2005 is the expected policy return of 5.91%, plus 3 basis points from tactical return, plus 40 basis points from active management, for a total of 6.34%. The total risk that will be taken to achieve this return is the combination of the policy risk of 10.75%, the tactical risk of 60 basis points, and the active risk of 40 basis points, for a total risk of 11.30%.

Tactical Outlook

The investment discretion that is permitted at the total fund level relates to the rebalancing of the portfolio. Staff is permitted to rebalance toward, but not away from, policy targets. Further, staff is required to rebalance when asset allocations fall outside of prescribed ranges.

Staff analyzed data from a variety of sources to determine the tactical bias for 2005. Information considered included the Macroeconomic Adviors' outlook, research by a large number of investment banks, discussions with and research by investment managers, feedback from generalist and specialized consultants, discussions with peers and industry experts, and an array of academic and informational periodicals.

The economic and investment outlook, as forecasted by our economic advisor, Macroeconomic Advisors (MA), is summarized below:

1. A continued expansion in GDP growth, with 2005 Q4 over Q4 GDP growth estimated at 4.1%, compared to a similar estimate for 2004 at 3.9%. The expansion of GDP is predicated on an anticipated pick-up in business fixed investment and a continuation of strong consumer demand aided by growth in household wealth.
2. MA anticipates that the Federal Reserve will continue to increase the Federal Funds rate at a "measured pace" through next year to 3.75% by the end of 2005. The yield on the US Treasury 10-year note is expected to increase to 5.35%.
3. Inflation is expected to increase in 2005 to an annualized rate of 1.8% after a projected rise of 1.7% in 2004. The increase in inflation is expected to occur as a result of higher import prices for key commodities such as oil.
4. Corporate profit growth is expected to decline to 5% in 2005.

Domestic Equities - Neutral to Favorable

- Expected return of 7% in 2005.
- Favorable economic environment in 2005 should allow for earnings growth in the mid-single digits.
- Market valuations remain high with little room for multiple (P/E) expansion.
- Modestly rising interest rate scenario will dampen investors expectations.
- First six months of a post-election environment is typically favorable for U.S. stock prices.
- Record cash flows give U.S. companies the flexibility to potentially increase dividends, buy back their stock or raise the level of capital spending.
- Geopolitical situation and terrorist threats continue to cause uncertainty in the energy markets.

Global Bonds - Neutral to Unfavorable

- Expected return of 2% in 2005.
- Notwithstanding MA's forecast, interest rates will need to eventually work higher, limiting the return on bonds.
- Corporate bonds are expected to outperform treasuries and agencies. Although corporate bond spreads are not as attractive as a year ago, the economic backdrop continues to favor improvement in corporate balance sheets.
- High yield bonds will continue to benefit from a stronger economy and lower default rates, resulting in strong relative performance.
- Emerging market debt is expected to continue to provide strong relative performance again as the world appears headed for a synchronized global upturn.

International Equities - Favorable

- Expected return of 8% in 2005.
- Non-U.S. equities offer more favorable valuations than U.S. stocks.
- Emerging markets remain cheaper than developed markets, trade at a discount to their historical averages and offer faster growth potential.
- A weaker dollar is forecasted given the large U.S. current account deficit.
- Global interest rate normalization process is expected to be less severe outside the U.S.
- Downside risks include sustained high oil prices, central banks raising interest rates more aggressively than forecast, excessive caution by business executives and the continued threat of terrorism.

Real Estate - Neutral to Favorable

- Expected return of 7% in 2005.
- Real estate fundamentals should benefit from continued improvement in the domestic economy.
- Property valuations remain high relative to historical averages, which may limit expected returns.

Macroeconomic Advisers' complete 2005 Economic Outlook is provided in the appendix.

The generally favorable economic outlook, combined with reasonable valuation levels in the US and international equity markets, will cause us to maintain a target or above-target allocation to equities, and a target to below-target allocation to fixed income. We are under-weight to real estate at present and we intend to begin increasing our exposure in 2005 and beyond. The following table summarizes our anticipated re-balancing stance for 2005:

Asset Allocation Rebalancing Bias 2005	Target	Upper Limit	Lower Limit	Rebalancing Bias
Domestic Equity	46.0%	49%	43%	N /+
Global Bonds	23.0%	26%	20%	N /-
International Equity	20.0%	23%	17%	+
Real Estate	9.0%	13%	5%	N /+
Private Equity	1.0%	4%	0%	NA
Short-Term Cash	1.0%	NA	NA	NA
Total Fund	**100.0%**			

N = Neutral

Active Return and Risk

The following schedule details the expected excess performance over the respective indexes and displays the tracking error (volatility of returns) for each asset class and the overall investment portfolio.

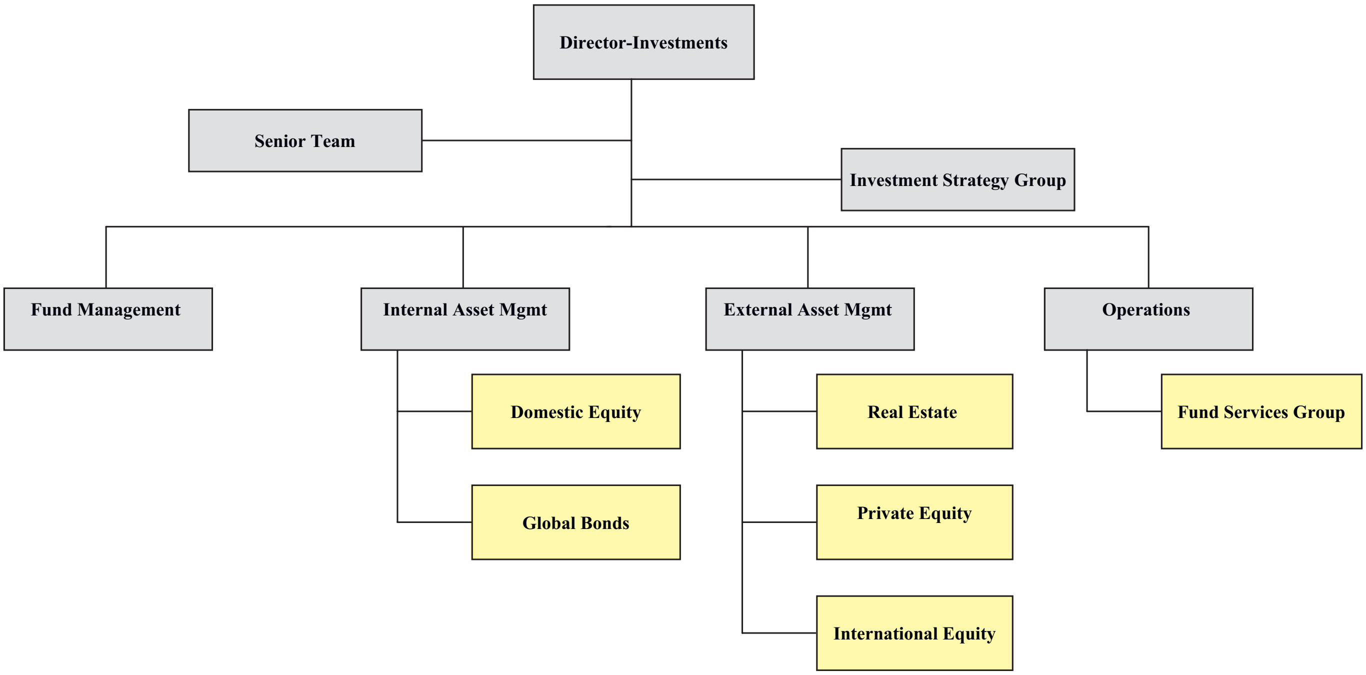
Schedule of Expected Performance and Volatility	2005 Policy Allocation in Percent	Expected Performance Over Index in Bps	Contribution to Fund Performance in Bps	Estimated Tracking Error in Bps	Target Information Ratio
Domestic Equity	46.0%	19	9	40	0.47
Global Bonds	23.0%	30	7	70	0.43
International Equity	20.0%	75	15	130	0.58
Real Estate	9.0%	100	9	250	0.40
Private Equity	1.0%	0	0	0	0.00
Short-Term Cash	1.0%	0	0	0	0.00
Total Fund	**100.0%**		**40**	**40**	**1.00**

The table shows that we expect the investment portfolio to out-perform through active management by 40 basis points annually, on average. The 40 basis points of estimated tracking error tells us that there is a 66% probability that our actual annual performance will be in a range of 0 basis points below the policy return to +80 basis points above the policy return. This confidence interval is arrived at by subtracting the tracking error statistic from the expected return to arrive at the lower bound and adding the tracking error statistic to the expected return to arrive at the upper bound.

The statistics shown in the table are rolled-up from the asset classes. The tracking error that results at the fund level is lower than the respective asset classes due to the diversifying effects of the asset classes on the total fund.

Structure

The Investment Division is broadly structured as depicted in the chart below. A detailed organizational chart is included in each asset class section.



Responsibility for oversight of the Investment Division is shared between the director and the senior team as depicted in the chart. The organizational design allows for a more focused and efficient use of resources while providing flexibility and accountability. Fund Management will be responsible for risk management, research and development initiatives, and asset rebalancing strategies. The Internal Asset Management will provide active internal management of domestic equity and global bond portfolios. External Management will oversee the division's external managers across all asset classes. Finally, the Operations unit will support the organization's investment activities.

The Investment Strategy Group (ISG) is composed of the director and the heads of the asset classes. The ISG is the primary mechanism by which the Investment Division evaluates, debates, and arrives at key decisions affecting performance or policy. The ISG meets biweekly to evaluate initiatives expected to have a material impact on the investment program. Topics of discussion in ISG meetings include:

- Policy issues that impact strategy
- Investment initiatives with alpha potential
- Portfolio performance and risk
- Portfolio rebalancing implementation
- Sector over-weighting and under-weighting decisions

Resources

This major section reviews staffing and operating costs and is divided into two sub-sections: Staffing and Operating Budget.

Staffing

The following table presents our anticipated full staffing at year-end 2005:

Schedule of Target Staffing at Year End 2005	Dom. Equity	Global Bonds	Int'l Equity	Real Estate	Private Equity	Fund Services	Admin	Total Inv. Div.
Current Staff (2004)	21	8	1	9	4	9	4	56
Vacant Positions	2	1	1	0	1	0	1	6
Est. Full Staff (2004)	22	8	2	9	5	9	5	60
Budgeted New Positions	0	0	1	0	0	0	0	1
+ / - Internal Transfers	0	0	0	0	0	-2	0	-2
Est. 2005 Full Staffing	23	9	3	9	5	7	5	61
Professional	21	8	2	8	4	5	4	52
Support	2	1	1	1	1	2	1	9

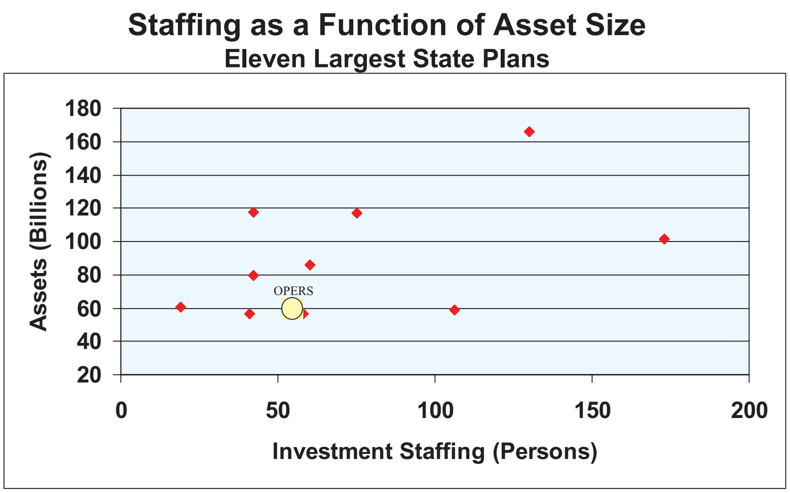
The Investment Department has six vacant positions resulting from turnover and budgeted-but-unfilled positions from 2004. We are budgeting for one new position for 2005: an Investment Assistant I (International). The position is slotted to be hired in the first quarter. If all budgeted positions are deemed necessary and are filled, we estimate the department will have 61 employees at the end of 2005, composed of 52 investment professionals and 9 support persons.

The following table describes by department and position the vacant and budgeted new positions we will be addressing in the balance of 2004 and into 2005.

Status of Open Positions at Year End 2004	Position	Vacant	Newly Budgeted	Target Hire Date
Domestic Equity	Sr. Investment Analyst	X		12/2004
	Quant Analyst	X		6/2005
Global Bonds	Sr. Investment Analyst	X		04/2005
Private Equity	Sr. Investment Analyst	X		12/2004
International Equity	AIO - External Management	X		12/2004
	Adminstrative Asst		X	1/2005
Administration	AIO - Fund Management	X		12/2004
Total	7	6	1	

Total Fund

The following chart compares OPERS' asset size and estimated year-end 2004 staffing to a peer set of the top 10 state pension funds. While implementation issues affect the relationship of asset size to staffing, the chart provides a guide to our staffing relative to a peer set of funds.



The general conclusion from the chart is that we have sufficient staffing relative to our asset size to conduct the investment program. We have re-staffed from the depleted levels of a few years ago. Going forward, the focus of our senior management team is on the productivity of existing staff.

The annual cost of salaries and benefits for the investment department, at the estimated 2005 full staffing level, is displayed in the following table:

Schedule of Estimated 2005 Salary and Benefit Costs								
	Compensation dollars in millions							
	Dom. Equity	Global Bonds	Int'l Equity	Real Estate	Private Equity	Fund Services	Admin	Total Inv. Div.
Salaries	2.456	0.919	0.306	0.950	0.483	0.503	0.566	6.182
Benefits	0.765	0.281	0.089	0.284	0.144	0.148	0.170	1.881
Incentive Compensation	0.514	0.157	0.019	0.123	0.061	0.049	0.077	1.000
Total Compensation	3.735	1.357	0.414	1.357	0.688	0.700	0.813	9.063
Assets in $ billions	28.844	14.422	12.541	5.643	0.627	NA	NA	62.705
Cost in Basis Points	1.29	0.94	0.33	2.40	10.97	0.11	0.13	1.45

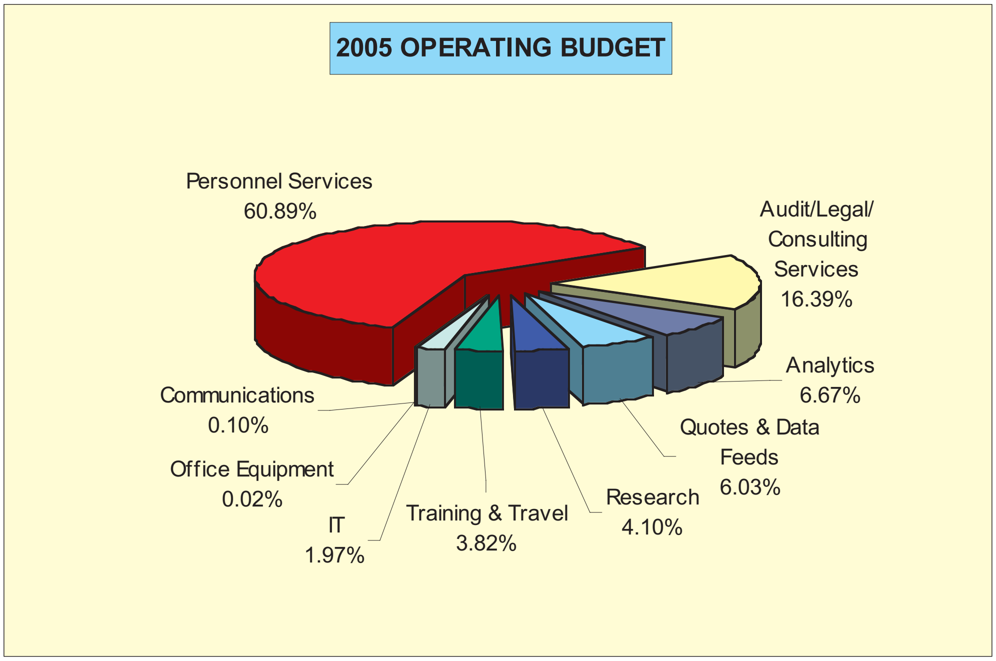
The comparable total figures for 2004 were $8.984 million and 1.59 basis points of assets. Aggregate compensation is expected to be up in 2005 due to the 2004 budgeted positions filled as we begin the new year. Compensation as a percent of assets is expected to decrease due to lower aggregate compensation on a higher asset base.

Operating Budget

The Investment Department 2005 operating budget is set at $13.677 million. This represents a decrease of $43K from the 2004 budget. International Equity is expected to increase due to the hiring of an AIO - External Management and one support staff. The Domestic Equity area accounts for 37% of the Investment Division operating budget.

Schedule of Budgeted Operating Expenses by Department								
Operating Budget in millions of dollars								
	Dom. Equity	Global Bonds	Int'l Equity	Real Estate	Private Equity	Fund Services	Admin	Total Inv. Div.
2004 Budget	4.908	1.955	0.496	1.815	1.797	1.017	1.732	13.720
2005 Budget	5.110	2.020	0.591	1.664	1.925	0.853	1.514	13.677
Percent Change	4.1%	3.3%	19.1%	-8.3%	7.1%	-16.2%	-12.6%	-0.3%
Percent of Total	37.4%	14.8%	4.3%	12.2%	14.1%	6.2%	11.1%	100.0%
Asset Size ($ b)	28.844	14.422	12.541	5.643	0.627	NA	NA	62.705
Budget in bps	1.77	1.40	0.47	2.95	30.69	0.14	0.24	2.18

The preceding table shows that internal operating costs will be 2.18 basis points of total assets in 2005.



The accompanying pie chart displays the allocation of the operating expenses across major budget categories. The four main areas of operating expenses within investments are personnel services, consulting services, the combination of analytics, quotes & data feeds, research, and lastly, training and travel.

• The primary cost items in the Professional Services category include consulting fees for EK+A, as well as newly added costs for Real Estate and Private Equity consultants. In 2005, we estimate that consulting fees will total $2.040 million, composed of:

-	PCG	$1,000,000
-	EK+A	600,000
-	Townsend	320,000
-	Special Projects	75,000
-	Macroeconomic Advisers	25,000
-	Cost Effectiveness Measurement	20,000

• The primary cost items in the Quote and Data Feeds category are Bloomberg, Bridge, and Factset terminals. In 2005, we reduced the number of terminals, generating a savings of nearly $100,000. In the category of Investment Analytics, the primary cost items are Factset, a market and company analytical package, BARRA, a risk measurement package, StockVal, a company valuation package, Salomon Yield Book, Quantitative Services Group, and Market QA. In the Research category, the primary cost items are independent research services such as Thompson Financial, Intex, Multex, Moody's Credit Reports, and Bondscore.

• In training and travel, the primary cost item is business travel. Each asset class / department budgeted travel according to their estimated requirements. On average, estimated travel and conference fees are $7,000 and $850, respectively, per professional employee in 2005. The Investment Division's travel budget has been reduced by $63,000 from the 2004 budget.

Estimated Total Costs of Investment Program

As shown in the following table, the estimated total cost of the investment program in 2005 is $ 114.1 million or 18.2 bps of assets under management. The comparable figures in the 2004 Annual Plan were $100.5 million and 17.8 basis points. The growth in the size of the fund has caused an increase in external management fees and custody fees.

Schedule of Estimated Total Costs for Investment Department
Est. Year End 2005
Costs in millions of dollars

	Dom Equity	Global Bonds	Int'l Equity	Real Estate	Private Equity	Fund Services	Admin	Total Div.	% of Total
Compensation Costs	3.735	1.357	0.414	1.522	0.688	0.700	0.813	9.228	**8.1%**
Operating Budget less Compensation	1.670	0.772	0.214	0.418	1.295	0.211	0.768	5.349	**4.7%**
Manager Fees	12.897	7.734	31.289	18.546	25.000	0.000	0.000	95.466	**83.6%**
Custody and Overhead							4.120	4.120	**3.6%**
Total	18.302	9.863	31.917	20.486	26.983	0.911	5.701	114.163	**100.0%**
Percent of Total	16.0%	8.6%	28.0%	17.9%	23.6%	0.8%	5.0%	100.0%	
Asset Size ($ b)	28.844	14.422	12.541	5.643	0.627	NA	NA	62.705	
Costs in bps to Asset Class	6.3	6.8	25.5	36.3	430.3	NA	NA	NA	
Costs in bps to Total Fund	**2.9**	**1.6**	**5.1**	**3.3**	**4.3**	**0.1**	**0.9**	**18.2**	

The last row of the table displays the contribution of each asset class (or area) to the total estimated cost to run the Investment Division. The two asset classes with a high degree of external management, Private Equity and International Equity, account for approximately 59% of the estimated total costs to run the investment program.

The 2003 Cost Effectiveness Measurement Survey of investment programs estimated the benchmark cost to run a program possessing the implementation characteristics of our fund to be $107 million or 20.1 basis points of assets (the survey used an asset base of $59 billion for OPERS). The difference between the CEM estimate and our actual cost estimate reflects a net savings of $7.538 million resulting from a combination of a greater use of lower cost internal management than our peers and a low implementation-cost strategy through the use of a high degree of passive management.

Initiatives

The following text describes the proposed major initiatives that will be pursued in 2005. The list of proposed initiatives is shorter than in years past and more focused on direct asset management, as we have addressed many of the findings in the Comprehensive Investment Review.

Division-Wide

1. Health Care Split - Staff will undertake the separation of pension and health care assets beginning early in the year, and form a new health care portfolio. This multi-year undertaking will allow for health care assets to have a risk and return profile more reflective of the characteristics of the health care plan, while still utilizing the same managers and portfolios as the pension assets, and benefiting from the same low cost investment structure.

2. Culture Development - Senior staff will continue to work on the multi-year implementation of the division's vision and values that were preliminarily identified during sessions in October 2004. The implementation phase is intended to ensure that the vision and values agreed to by staff are woven into the fabric of the operations of the investment program, from the employee evaluation process, to the promotion process, and on to include a formal employee development process.

3. Strategic Research - During 2004, the investment staff conducted a series of internal strategic planning meetings to identify investable themes to position the fund for long-term gain. The three main themes that were identified are technology, rising middle class in developing markets, and developed market demographics. A number of teams will be formed to research various aspects of these themes including investment opportunities. Some of the ideas may lead to new investments under the Opportunistic Policy or tilts within asset class policies.

4. Continuation of Alpha Initiatives - In 2004, staff undertook numerous research initiatives to identify ways to expand incremental return. A number of the initiatives are currently underway and will be completed in 2005, including the hedge fund project, the addition of a high yield Commercial Mortgage Backed Securities (CMBS) manager, the commodities project, and research on active currency management.

Domestic Equity

5. Internal Management of Synthetic Enhanced Indexing - The Domestic Equity Department has proposed to research the investment processes and skills that are required to successfully manage a synthetic-based mandate. Staff will determine if the futures and the cash component of this strategy can be managed by internal staff.

6. Manager Search - The Domestic Equity Department will conduct a search in 2005 for Ohio-qualified, minority and emerging (OME) managers to add alpha.

7. Dynamic Allocation - The Domestic Equity Department has been experimenting with a risk budgeting process that would lead to a more dynamic or fluid allocation of the respective active managers/portfolios. The focus of the Quantitative staff will be on delivering a higher information ratio for this component.

Global Bonds

8. Manager Search - The Global Bond Department initiated alpha projects in 2004 to add incremental return. To the extent these initiatives have long-term alpha potential, the Global Bond Department will conduct a search in 2005 to identify skilled managers.

9. Attribution Model - The Global Bond Department has proposed to develop a performance attribution model for the internal portfolio. This should result in an improved risk/return profile.

International Equity

10. Policy and Portfolio Allocations - The International Equity Department will review the portfolio's small capitalization and emerging market policy target allocations for 2005. Additionally, the International Equity Department will evaluate currency exposure, risk, and existing manager allocations.

Real Estate

11. Increase Exposure and Returns - The Real Estate Department will analyze ways to increase exposure via stable assets. Through the end of 2008, an estimated $4 billion is scheduled to be invested to achieve the target allocation of 9%. Apart from increasing exposure, the focus of the team is on increasing returns expected to take form in enhanced and specialty areas, international and mezzanine investments, along with savings through operations.

Private Equity

12. Co-investing - The Private Equity staff anticipates developing a co-investment plan by mid-year, and presenting such a plan to the Investment Committee. This plan will set forth short and long-term objectives for successful implementation.

Peer Group

The following chart provides a list of the peer groups used in the analysis on pages 14 and 15.

Eleven Largest State Plans as of 6/30/2004	
($ millions)	
California Public Employees Retirement System	$ 166,296
New York State & Local Retirement System	$ 117,716
California State Teachers Retirement System	$ 116,649
State Board of Administration of Florida	$ 102,391
Texas Teachers Retirement System	$ 86,049
New York State Teachers Retirement System	$ 80,276
North Carolina Retirement System	$ 60,684
Ohio Public Employees Retirement System	$ 60,005
State of Wisconsin Investment Board	$ 59,121
Washington State Investment Board	$ 57,302
Division of Investment Services - State of Georgia	$ 56,671

Compiled using data from www.pfde.org (NASIO) as of 10/19/2004.

Asset Management

Strategy

The Domestic Equity asset class is expected to produce a return, net of expenses, equal to or greater than that of the Russell 3000 Index while incurring a comparable degree of volatility. In calendar year 2005, the asset allocation to the Domestic Equity asset class will be set at a target level of 46%. Last year, the target allocation was also set at 46%.

The Domestic Equity asset class utilizes both index (passive) and active management styles. Given the relative efficiency of the domestic equity markets and the total size of assets under management ($28 billion), a majority of the domestic equity program is managed on an index or passive basis. In order to achieve our targeted information ratio of 0.47 in 2005, we have selected a single point target of 65% for the passive allocation in the Domestic Equity asset class. The passive component falls within the new policy range of 55% to 65%. The remaining 35% within the asset class will be actively managed.

Once again, our strategy for 2005 will incorporate both internal and external managers for asset management. External managers are used for large cap active and small cap active mandates. OPERS' internal staff manages index and large cap active mandates. External large and small cap managers are used for their "core" management approaches. These managers are expected to achieve their "alpha" or outperformance from their emphasis on bottom-up fundamental analysis and subsequent stock selections. Internally, the Research Portfolio combines a quantitative ranking system along with fundamental analysis and insights provided by the Domestic Equity staff of analysts, providing recommendations to the Portfolio Committee and creating the primary source of "alpha" in this particular portfolio.

By year-end 2004, we will have completed the Enhanced Index Initiative. Enhanced Indexing is a lower risk investment strategy within the traditional active spectrum. A project team researched this space and identified four external managers that can add alpha over their respective benchmarks. In addition, these four managers also exhibited low correlations with our internally managed Research Portfolio (also managed with an enhanced index approach). Shifting funds out of the passive or index allocation to fund these managers should result in an information ratio greater than our asset class goal of 0.40. We will have shifted 5%, or approximately $1.5 billion, from our total index allocation. As a result, we have zeroed out the external index portfolio managed by Barclays Global Investors (BGI) with the remaining funds (approximately $430 million) coming from our internally managed R3000 Index portfolio.

The following paragraphs briefly describe the specific strategies within the four (active - internal, active - external, index - internal and index - external) main pillars of the Domestic Equity asset class.

Active Portfolios - Internal

The Research Portfolio represents 20% of the total assets within the Domestic Equity asset class. This Enhanced Index product has been structured to achieve outperformance in a broadly diversified portfolio by utilizing a quintile ranking based Stock Selection System (SSS) in combination with a risk management process that results in a low tracking error. Stocks that pass the above screening process are candidates to be overweighted, while issues that rank at the bottom of the SSS and the validation screens are candidates to be sold entirely or underweighted. The Research Portfolio was activated on October 10, 2002 and is benchmarked to the Russell 1000 Index.

Since the beginning of 2003, the Research Portfolio has been out performing the Russell 1000 Index by approximately 50 basis points (0.50%) on an annualized basis. With two years of experience and the addition of a senior analyst to follow the uncovered portion of the Financial sector, we expect to ratchet up the active risk (tracking error) in this portfolio to 100 basis points (the guideline ceiling is set at 125 basis points). Maintaining an information ratio in the 0.45 to 0.50 range will result in an expected alpha (active return over the benchmark) of 47 basis points in calendar year 2005.

Active Portfolios - External

The five external managers have been a part of the Domestic Equity asset class since November 2001. The two large capitalization managers are benchmarked to the Russell 1000 while the three small capitalization managers are benchmarked to the Russell 2000. On a combined basis, these managers are responsible for approximately 10.0% of the Domestic Equity asset class. After funding is completed, the new Enhanced Index managers will account for approximately 5.0% of the asset class.

We are using managers that are typically referred to as "core" portfolios. As such, most of the portfolios will not exhibit significant or persistent style biases versus their respective benchmarks. Style neutral or "core" philosophies are expected to deliver investment premiums regardless of the market environment. Enhanced indexing is another form of active management, but its investment approach puts a greater emphasis on the integration of active management and risk control.

The following is a brief description of each externally managed active portfolio and each manager's benchmark. The alpha objectives (net of fees) are sourced from the Schedule of Expected Performance and Volatility contained in the *Performance Objectives & Risk Control* section.

Manager	Benchmark	Alpha Objective
AllianceBernstein Institutional Investment Mgmt. Blend of growth and value portfolios managed largely independently by Alliance and Bernstein, resulting in a structured, style neutral portfolio	Russell 1000	98 bps
Wellington Management Company Bottom-up stock selections and sector neutral approach managed by Wellington's 38 Global Industry Analysts	Russell 1000	43 bps
Capital Guardian Trust Company Very experienced portfolio managers and analyst team manage a well-diversified portfolio utilizing a "multiple portfolio manager" strategy	Russell 2000	33 bps
Fidelity Management Trust Co. Seasoned portfolio manager supported by a dedicated team of small cap analysts focused on financially strong companies selling at valuations at or below the market	Russell 2000	111 bps
INVESCO, INC. Structured, quantitative process that neutralizes all portfolio biases except individual stock selections	Russell 2000	124 bps

The four enhanced index managers (undetermined at press time) will each exhibit tracking errors less than 135 basis points and alpha objectives (net of fees) of 25 basis points or more over their respective benchmarks.

Index Portfolio - Internal

There is one internally managed index portfolio in 2005. The R3000 Index portfolio falls under the direction of the Manager of Passive Investments. The Russell 3000 Index portfolio is managed to produce index-like returns, while preserving the assets of the portfolio by maintaining a low-cost profile. Replicating the index as closely as possible, with fewer securities than are in the Index, results in low turnover, accurate tracking and low costs.

The expected tracking error ceiling is 10 basis points except at Russell reconstitution time when tracking error may increase to as much as 35 basis points. The benefits of this methodology include: a broad exposure to the domestic equity market, minimal turnover and transaction costs, and the achievement of the benchmark-matched performance goal.

Index Portfolio - External

The portfolio managed by Barclays Global Investors (BGI) was zeroed out to fund the bulk of the $1.5 billion that was shifted into the active component of the asset class. Since its inception (January 2002), the external index portfolio managed by Barclays has essentially performed in-line with its benchmark, the Russell 3000 Index after the inclusion of fees. This relationship with BGI gave the internal staff at OPERS an opportunity to gain experience and education associated with managing the Russell 3000 Index, especially at reconstitution time.

Our internal staff has developed the requisite skills to effectively manage a Russell 3000 Index portfolio and at a lower cost than an external manager. This was the primary reason that the entire BGI portfolio was liquidated during the funding process for the newly hired enhanced index managers.

Performance Objectives & Risk Control

The Domestic Equity asset class uses the broad, Russell 3000 Index as a benchmark. The allocation between actively and passively managed funds is the primary factor that determines the overall risk and return profile within the Domestic Equity asset class. The passive component (Russell 3000 Passive), benchmarked to the overall Russell 3000 Index, has a general strategy to deliver index-like returns.

As such, the passive component is not expected to contribute excess returns, alpha, in the calculation of the targeted information ratio. Therefore, the outperformance expectations for the Domestic Equity Department will primarily be dependent upon the efforts and composition of the active component of the portfolio.

Based upon risk tolerances established at the overall fund level, Domestic Equity is allocated a risk budget of 50 basis points. We believe our current strategy and the resulting mix of portfolios can deliver an excess return, alpha, of 19 basis points in calendar year 2005 with an estimated tracking error of 40 basis points. As a result, we are targeting an information ratio (or a level of alpha per unit of risk) for the Domestic Equity asset class of 0.47. These results were computed with Barclay's software package, PortfolioWorks.

The schedule on the next page details the active risk budget for each portfolio in the Domestic Equity asset class and the corresponding active return expectations.

Index	Portfolio Expected Allocation ($ billions)	% of Total Portfolio	Benchmark	Expected Performance Over Index in Bps	Historical Tracking Error in Bps	Target Information Ratio
	Schedule of Expected Performance and Volatility					
R3000 Index	18.633	64.6%	*Russell 3000*	-1	3	-0.33
Barclays R3000 Index	0.000	0.0%	*Russell 3000*	-3	3	-1.00
Total Index	18.633	64.6%	*Russell 3000*	-1	3.0	-0.33
Active						
Large Cap						
AllianceBernstein	1.211	4.2%	*Russell 1000*	98	600	0.16
Wellington	1.096	3.8%	*Russell 1000*	43	300	0.14
R1000 Research	5.740	19.9%	*Russell 1000*	47	100	0.47
Enhanced Mgr A	0.808	2.8%	*S&P 500*	41	125	0.33
Enhanced Mgr B	0.202	0.7%	*Russell 1000*	37	135	0.27
Enhanced Mgr C	0.490	1.7%	*Russell 1000*	38	110	0.35
Enhanced Mgr D	0.029	0.1%	*Russell 1000*	27	120	0.23
Small Cap						
Capital Guardian	0.173	0.6%	*Russell 2000*	33	1000	0.03
Fidelity	0.231	0.8%	*Russell 2000*	111	1400	0.08
Invesco	0.231	0.8%	*Russell 2000*	124	500	0.25
Total Active	10.211	35.4%	*Russell 3000*	54	80	0.68
Total Fund	28.844	100.0%	*Russell 3000*	19	40	0.47

Note: Historical tracking errors and alphas after fees (expected performance) were used this year as the primary inputs in Barclay's optimization software. Staff used a refined formula (source: R. Grinold and R. Kahn) to forecast the expected performance of each portfolio. Inputs for the four enhanced index managers were estimated from a sample of the manager's RFI (Request for Information) responses.

Domestic Equity

Domestic Equity Composition

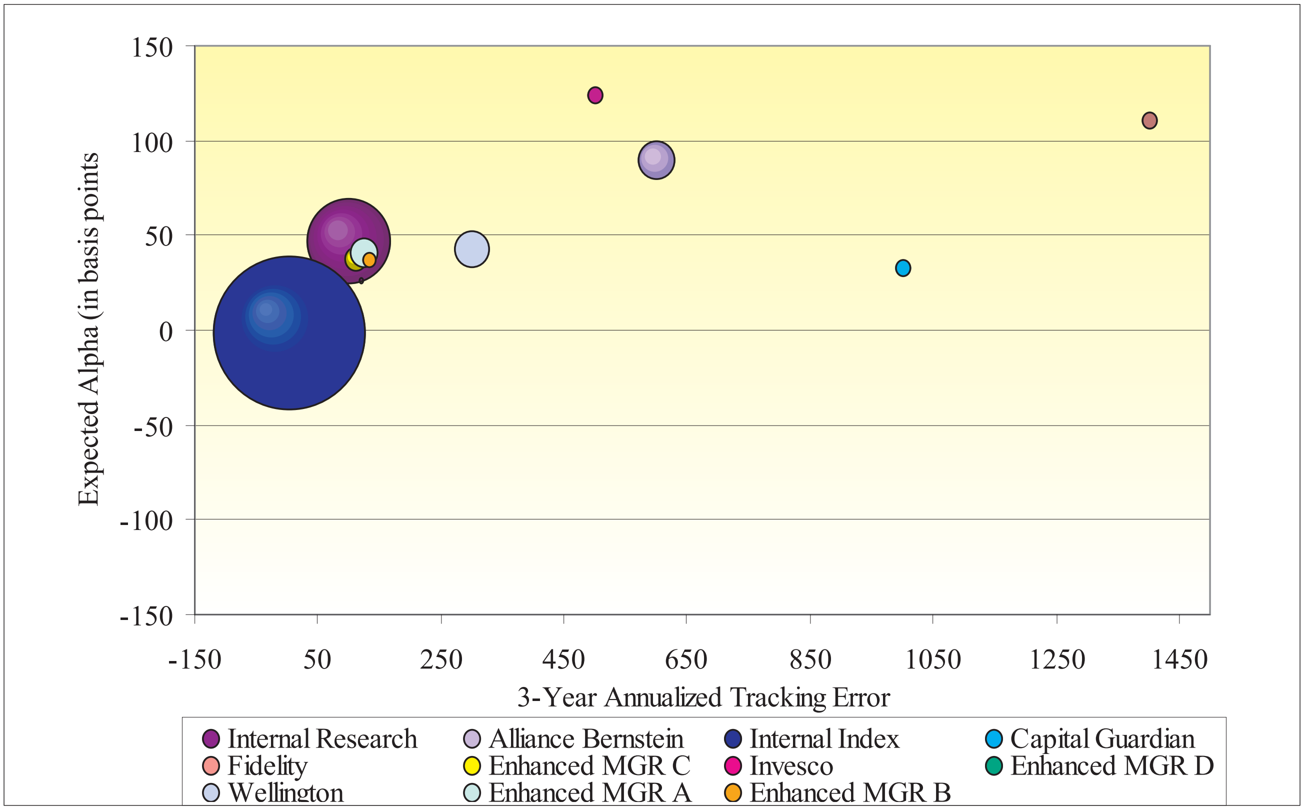
The following table summarizes the Domestic Equity characteristic information at the end of 2004 and the estimated characteristic information at the end of 2005. The slight difference in the two year-end totals would be a function of hiring Ohio-qualified, minority or emerging (OME) managers during the course of the year. As an initiative in 2005 (see Initiatives section for details), we expect to hire two or three OME managers with an aggregate dollar allocation of approximately $100 million.

Estimate of Internal/External and Active/Passive Composition							
		Est. Year End 2004			Est. Year End 2005		
		Active	Passive	Total	Active	Passive	Total
Domestic Equities	Internal	19.9%	64.6%	84.5%	19.9%	64.2%	84.1%
	External	15.5%	0.0%	15.5%	15.9%	0.0%	15.9%
	Total	***35.4%***	***64.6%***	***100.0%***	***35.8%***	***64.2%***	***100.0%***

The following schedule details the average assets under management by individual portfolio along with the expected fees or costs associated with each of the portfolios. For the internally managed portfolios, the cost components consisted of the department's total compensation and operating budget for 2005. The time spent by each staff member on the respective internal portfolios was the metric selected to allocate the total costs.

Schedule of Portfolio, Size & Estimated Fees					
	Mandate	Benchmark	Assets Under Management in millions	Estimated Annual Fee ($ millions)	Estimated Annual Fee (bps)
Internal					
R1000 Research	LC Core	**Russell 1000**	$5,678	4.227	7.4
R3000 Index	Passive	**Russell 3000**	$18,441	0.903	0.5
Internal Total			$24,119	5.131	2.1
External					
Alliance Bernstein	LC Core	**Russell 1000**	$1,194	2.985	25.0
Wellington	LC Core	**Russell 1000**	$1,086	2.824	26.0
Fidelity	SC Core	**Russell 2000**	$224	1.411	63.0
Invesco	SC Core	**Russell 2000**	$228	1.140	50.0
Capital Guardian	SC Core	**Russell 2000**	$178	0.623	35.0
Enhanced Mgr A	Enhanced	**S&P 500**	$804	2.010	25.0
Enhanced Mgr B	Enhanced	**Russell 1000**	$201	0.603	30.0
Enhanced Mgr C	Enhanced	**Russell 1000**	$485	1.213	25.0
Enhanced Mgr D	Enhanced	**Russell 1000**	$25	0.088	35.0
Barclays Global	Passive	**Russell 3000**	$0	0.000	3.0
External Total			$4,425	12.896	29.1
Total		**Russell 3000**	$28,544	18.026	6.3

The following exhibit displays the expected alphas and tracking errors of the individual Domestic Equity portfolios in a "Bubble Chart" format. The area of each circle provides a visual depiction of the portfolio's relative size.

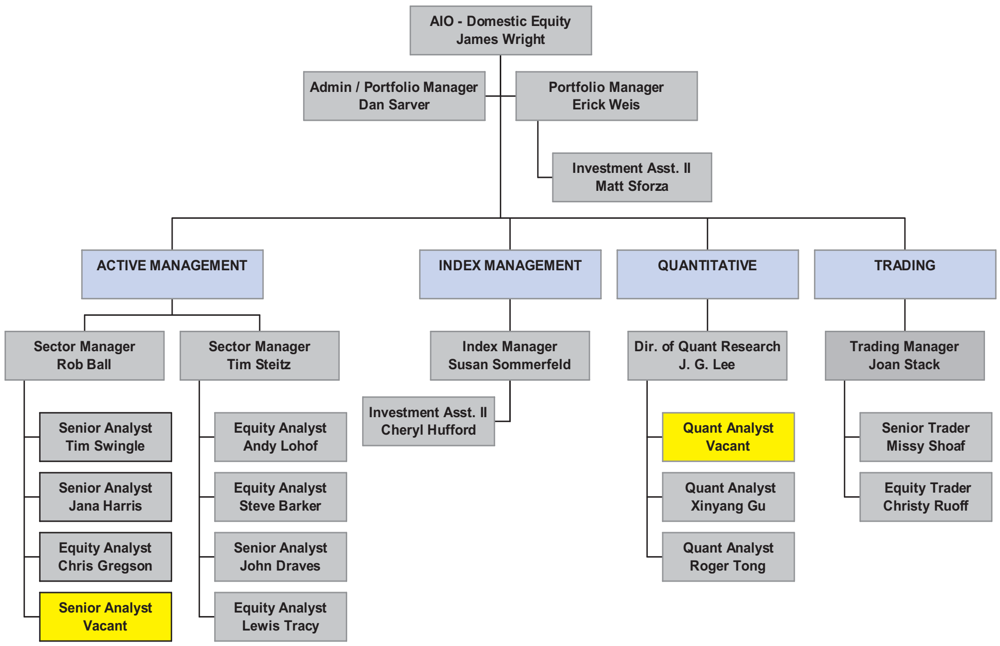


Domestic Equity

Resources

Organizational Structure

The accompanying chart displays the projected organizational structure as of the beginning of calendar year 2005.



The Domestic Equity Department is currently arranged with a total of seven managers reporting to the Assistant Investment Officer -Domestic Equity. There are four primary areas of responsibility: Active Management, Index Management, Quantitative Research and Trading. In addition, there are two portfolio managers who report directly to the AIO - Domestic Equity and they share the responsibility of monitoring the external active managers.

Active Management is responsible for the internally managed large cap portfolio (Research Portfolio), which was started in October 2002. A Portfolio Committee consisting of the AIO - DE, the two Portfolio Managers and the two Sector Managers is responsible for the overall management of the Research Portfolio. The two Sector Managers oversee the Fundamental Analytical staff which consists of seven current members. One additional analyst with experience covering the Financial Services sector (insurance and brokerage companies) was expected to be hired before year-end 2004. However, that date will be pushed out into the first quarter of 2005, as we broaden the search for qualified candidates.

The Manager of Index Investments is responsible for the entire passively managed component of the Domestic Equity portfolio. Specific day-to-day backup support to the Index component is provided by one of the senior portfolio managers. The Quantitative Manager currently oversees two quantitative analysts with one analyst vacancy expected to be filled sometime during the first half of 2005. The Quantitative staff provides the research support (back-testing, risk control, maintenance of the quintile ranking Stock Selection System and other tasks) for all the managers in the Domestic Equities asset class.

The Trading Manager heads up a three-person department responsible for executing the passive program trades and trading both the internally managed Research and REIT portfolios. The REIT (Real Estate Investment Trust) portfolio is managed by our Real Estate Department. In addition, the trading group analyzes and monitors the execution results of the broker/dealers utilized in the Domestic Equity asset class.

Staffing / Hiring

The Domestic Equity Department currently has 21 members on staff with two vacancies (as previously discussed) which are expected to be filled before mid-year 2005. With these hirings, the Domestic Equity staff will consist of 21 professionals and 2 support personnel, for a total of 23 staff members.

Schedule of Target Staffing at Year End 2005

	Domestic Equity
Current Staff (2004)	21
Vacant Positions	2
Est. Full Staff (2004)	21
Budgeted New Positions	0
+ / - Internal Transfers	0
Est. 2005 Full Staffing	23
Professional	21
Support	2

Schedule of Estimated 2005 Salary and Benefit Costs

Compensation dollars in millions

	Domestic Equity
Salaries ($ mm)	2.456
Benefits ($ mm)	0.765
Incentive Comp. ($ mm)	0.514
Total Comp. ($ mm)	3.735
Assets in $ billions	28.844
Cost in Basis Points	1.3

Assuming full staffing levels at year-end 2005, the chart on the right details the annual cost of salaries, benefits and incentive compensation paid in 2005 (assuming the target payout level) for the Domestic Equity asset class.

The projected compensation costs of the Domestic Equity staff as a percent of total managed assets is 1.3 basis points.

Domestic Equity

Asset Management Fees

The Domestic Equity asset class utilizes both internal and external managers to achieve the performance objectives, as detailed in this plan. The estimated external asset management fees for 2005 are shown on the accompanying table. The newly hired enhanced index managers are benchmarked to either the Standard & Poor's 500 (S&P 500) Index or the Russell 1000 Index.

	Estimate of External Management Fees in Dollars and Basis Points		
	Est. Year End 2005		
	Average Assets External ($ billions)	Estimated Annual Fee ($ millions)	Fees of External Assets (Bps)
Russell 3000 Passive	0.000	0.000	3.0
S&P 500 (Large Caps)	0.804	2.010	25.0
Russell 1000 Large Caps	2.991	7.713	25.8
Russell 2000 Small Caps	0.630	3.174	50.4
Total Domestic Equity	**4.424**	**12.897**	**29.2**

Operating Budget

The Domestic Equity Department 2005 operating budget is set at $5.110 million, a 4.12% increase versus the 2004 budget of $4.908 million. This amount represents 1.8 bps of our total Domestic Equity assets of $28.844 billion. The schedule of Budgeted Operating Expenses is presented below. In summary, the year-over-year increase in personnel expense is partially offset by the aggregate reductions in the quotes, research services, analytics and training categories.

In the personnel expense category, the 2005 budget amount will include the total compensation costs associated with an additional senior investment analyst and another quantitative analyst. With respect to the other budget categories, the Domestic Equity Department continues to find ways to be more efficient with fewer resources and not compromise the investment objectives as detailed in this annual investment plan.

Schedule of Budgeted Operating Expenses

	2004 Budget	2005 Budget	Dollar Change	Percent Change	Percent of Total	Asset Size ($ b)	Budget in bps
Personnel Expense	$3,087,352	$3,440,080	352,728	11.42%	67.32%		
Audit/Legal/Consulting Services	$20,000	$0	(20,000)	-	0.00%		
Quotes & Data Feeds	$465,000	$531,000	66,000	14.19%	10.39%		
Research Services	$214,300	$169,900	(44,400)	-20.72%	3.32%		
Analytics	$759,200	$668,900	(90,300)	-11.89%	13.09%		
Communications	$1,440	$1,440	-	0.00%	0.03%		
Information Technology	$108,550	$112,440	3,890	3.58%	2.20%		
Office Equipment & Supplies	$3,200	$2,850	(350)	-10.94%	0.06%		
Training & Travel Expenses	$248,960	$183,665	(65,295)	-26.23%	3.59%		
Total	$4,908,002	$5,110,275	202,273	4.12%	100.00%	$28.844	1.8

Domestic Equity

The following table lists the total cost estimates for managing the Domestic Equity portfolio. The total costs for internal management is projected to reach 2.2 basis points of the internal Domestic Equity assets under management. The total external management costs (fees) are estimated at 29.1 basis points of the external Domestic Equity assets under management. The total asset management costs for the asset class amount to $18.302 million or 6.4 basis points on assets under management.

	Schedule of Estimated Total Costs		
	Est. Year End 2005		
	Costs in Millions of Dollars		
	Internal	External	Total
Compensation Costs	3.735	-	3.735
Operating Budget less Compensation	1.670	-	1.670
Manager Fees	-	12.897	12.897
Total Costs	5.405	12.897	18.302
Average Assets Under Management	24,119.0	4,425.0	28,544.0
Costs in Bps	2.2	29.1	6.4

As a percent of the total Domestic Equity portfolio, internally managed assets will account for 85.0% and the external assets under management will make up the remaining 15.0%.

Initiatives

Evaluate Internal Management of Synthetic Enhanced Indexing

One of the recently hired enhanced index managers uses a synthetic-based investment approach to achieve their expected alpha or out performance. Synthetic-based enhanced index managers obtain their equity exposure through the use of future contracts and "enhance" their return through the management of the underlying cash portfolio. The cash component is invested in short-term fixed income securities in order to generate a higher return over the cost of capital (typically LIBOR), which is implied in the futures contracts.

Through our strategic relationship with this enhanced index manager, we will research the investment processes and skills that are required to successfully manage a synthetic-based mandate. We will determine if the futures component of this strategy could be managed by the Domestic Equity staff and the cash component managed by our internal Cash Management staff within the Global Bonds Department.

We would expect to have this research completed by the end of May 2005. If it is concluded that internal staff has the requisite skills, we would propose a recommendation to the Investment Committee in June 2005 that a "pilot program" be established as an allocation in the Opportunistic Class. If successful, this pilot program could lead the way for OPERS to consider larger portable alpha strategies as part of its overall investment composition.

Evaluate and Hire OME Managers

There are potential alpha opportunities in the smaller, emerging manager universe. The Ohio-Qualified, Minority and Emerging (OME) Manager Policy will provide staff with the flexibility to identify, evaluate and hire OME managers that will eventually add alpha to the overall asset class.

The Domestic Equity staff expects to identify OME managers to the Director of Investments by mid-year 2005. We expect that the total funding amount for these managers will be approximately $25 - $50 million and these funds will be moved out of the internally managed Index Portfolio.

Evaluate Dynamic Manager Allocation

The Quantitative staff has been experimenting with a risk budgeting process that would lead to a more dynamic or fluid allocation of the respective active managers/portfolios within our asset class. Today's process is fairly "fixed" and leads to a static allocation that rarely changes. A proven (back-tested for a significant information coefficient) dynamic allocation process should result in a manager/portfolio line-up that delivers a higher information ratio for that component of the overall asset class.

The Quantitative staff expects to evaluate and present a recommendation to the Investment Strategy Group (ISG) by August 2005. Once approved, this allocation process will be implemented in September.

Asset Management

Strategy

The Global Bond asset class uses a combination of internal and external asset management to optimize potential return given a budgeted amount of risk, while maintaining a low cost structure. Internal staff actively manages the majority of Global Bond assets using a "core" strategy, with focus on investment grade securities. External managers manage three additional core portfolios. External managers specializing in the management of high yield and emerging market debt augment the active core portfolio. The allocation to these sectors is managed to ensure that the overall fixed income asset class remains in compliance with the Global Bond Policy and Strategy.

Following a review of the core plus strategy in 2003, the Investment Committee adopted an investment policy for the Global Bond asset class that eliminated the use of the core plus mandate. This action led to the termination of Morgan Stanley Investment Management in 2004.

Core

Internal staff, using a risk controlled core strategy, manages the majority of the assets within the Global Bond asset class. Core portfolios seek to outperform primarily through sector and security selection and typically have small duration deviations relative to the index. Core portfolios focus on investment grade securities and the preservation of capital. The internal portfolio maintains a high level of issuer diversification and has less than 5% duration deviations relative to the index. The internal portfolio has an objective of 20 bps outperformance and a tracking error limit of 50 bps relative to its benchmark.

The AFL-CIO portfolio focuses on government and mortgage securities and is also categorized as a core portfolio due to its investment grade focus. The AFL-CIO HIT has an objective of providing 40 bps of active return over the return of the Lehman Brothers Aggregate Index. Two additional core managers, Fidelity and Smith Breeden, were hired in the third quarter of 2004.

High Yield Debt

High yield securities represent approximately 6% of the Lehman Brothers Universal Index. Due to the high level of credit risk in this sector, external specialists are used for the high yield debt portfolios. The outperformance comes from security selection which is supported by a labor-intensive credit research. In order to take advantage of opportunities in the sector, portfolio guidelines are formulated to give the managers broad discretion within the high yield universe.

In 2004, we hired GoldenTree as a third external high yield manager. The high yield allocation also includes an internally managed passive portfolio consisting of Dow Jones CDX Securities. These securities provide broadly diversified exposure to the high yield market and allow internal staff to tactically adjust exposure to the high yield sector. In 2005, we will conduct a search for an external manager to manage a $25 million portfolio against the Lehman High Yield CMBS index.

Emerging Market Debt

Emerging market debt securities represent approximately 3% of the Lehman Brothers Universal Index. External managers are used for emerging market debt due to the need for specialized expertise and resources. Emerging market debt managers primarily add value through country selection.

Global Bonds

Performance Objectives & Risk Control

The Global Bond asset class uses the Lehman Brothers Universal Index as its benchmark. Based upon risk tolerances established at the overall fund level, Global Bonds is allocated a maximum active risk budget of 90 basis points. This risk is referred to as tracking error and corresponds to the expected performance relationship between the Global Bond portfolio and that of the Lehman Brothers Universal Index. A tracking error of 70 bps means that 66% of the time, the asset class portfolio will be within 70 bps of the benchmark on an annualized basis. Based on the expected excess return of 30 bps and the maximum 70 bps tracking error, the information ratio is approximately 0.43.

Schedule of Expected Performance and Volatility

Internal	Portfolio Expected Allocation ($ billions)	% of Total Portfolio	Benchmark (Lehman)	Expected Performance Over Index in Bps	Estimated Tracking Error in Bps	Target Information Ratio
Internal Core	12.125	84.1%	Aggregate	20	60	0.33
Passive HY	0.094	0.7%	High Yield	0	550	0.00
External						
AFL-CIO	0.102	0.7%	Aggregate	40	100	0.40
Fidelity	0.310	2.2%	Aggregate	50	60	0.83
Smith Breeden	0.316	2.2%	Aggregate	50	60	0.83
Golden Tree	0.162	1.1%	High Yield	200	500	0.40
Shenkman Capital	0.340	2.4%	High Yield	100	500	0.20
W.R. Huff	0.319	2.2%	High Yield	100	450	0.22
New HY CMBS Manager	0.025	0.2%	HY CMBS	100	500	0.20
Capital Guardian	0.309	2.1%	Emerging Market Debt	100	400	0.25
Salomon Asset Management	0.320	2.2%	Emerging Market Debt	100	450	0.22
Total Global Bonds	14.422		Universal	30	70	0.43

The portfolios will be rebalanced as needed, in order for the overall portfolio structure to remain within the specified ranges. Staff may also rebalance to take advantage of longer-term opportunities in the market. In implementing portfolio adjustments, staff shall analyze the strategic benefits versus the transaction costs.

Global Bond Composition

The following table summarizes the allocation of the Global Bond portfolio between the internal and external managers.

Estimate of Internal/External and Active/Passive Composition

		Est. Year End 2004			Est. Year End 2005		
		Active	Passive	Total	Active	Passive	Total
Global Bonds	Internal	84.1%	0.7%	84.8%	84.1%	0.7%	84.8%
	External	15.2%	0.0%	15.2%	15.2%	0.0%	15.2%
	Total	***99.3%***	***0.7%***	***100.0%***	***99.3%***	***0.7%***	***100.0%***

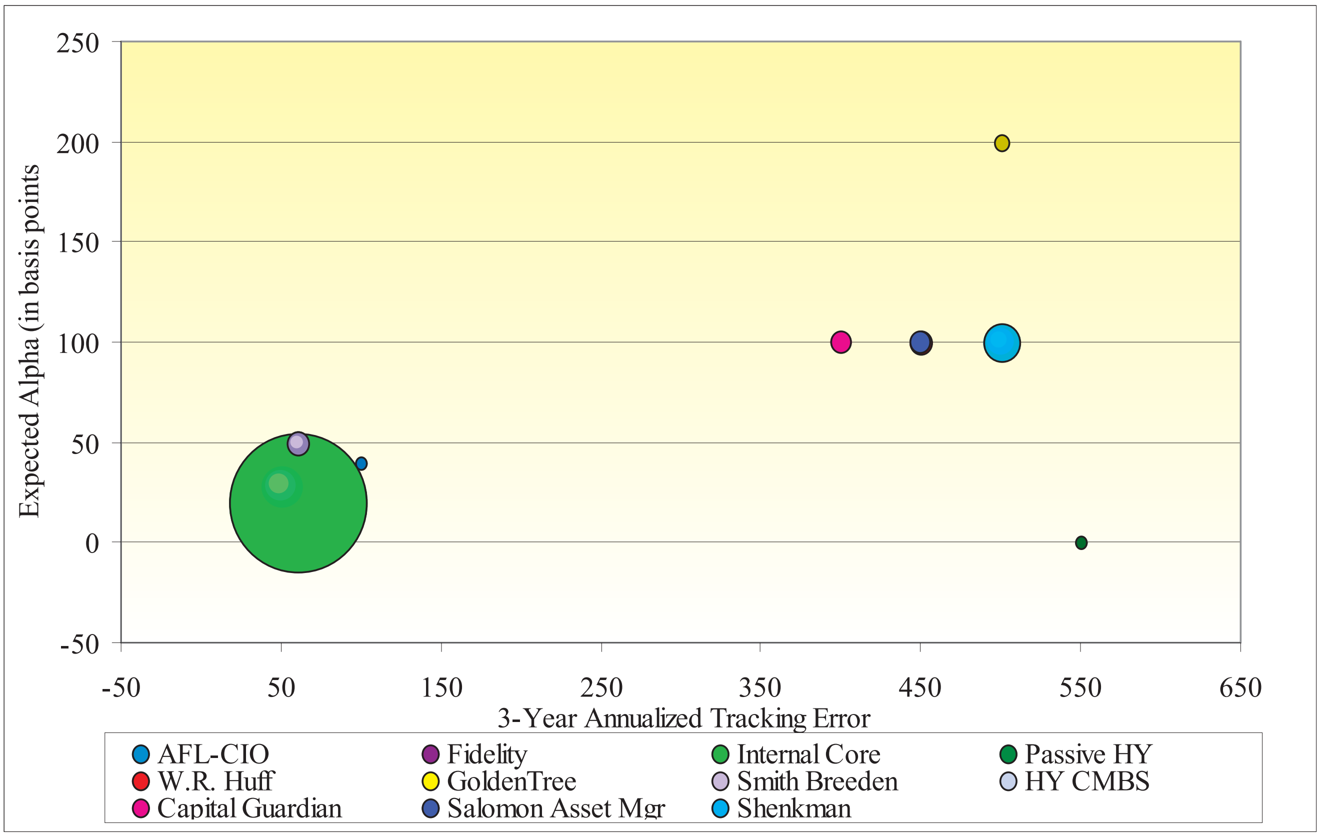
The total Global Bond allocation is currently 23.8% or approximately $14.3 billion. In 2005, the asset allocation to the Global Bond asset class will remain close to the total fund target of 23%. Assuming the investment consultant's long-term growth rate, and a return to the 23% asset allocation, fixed income assets would increase marginally to $14.4 billion at the end of 2005. The capital markets assumptions contained in Ennis Knupp's asset/liability study cited an expected return of 4.5% for fixed income securities.

Schedule of Portfolio, Size & Estimated Fees

	Mandate	Benchmark (Lehman)	Average Assets Under Management ($ millions)	Estimated Annual Fee ($ millions)	Estimated Annual Fee (bps)
Internal					
Internal Core	Core	**Aggregate**	12,055	2.020	1.68
Passive HY	High Yield	**High Yield**	93	-	-
External					
AFL-CIO	Core	**Aggregate**	102	0.356	35.00
Fidelity	Core	**Aggregate**	308	0.462	15.00
Smith Breeden	Core	**Aggregate**	314	0.534	17.00
Golden Tree	High Yield	**High Yield**	161	0.771	48.00
Shenkman Capital	High Yield	**High Yield**	338	1.320	39.00
W.R. Huff	High Yield	**High Yield**	317	1.584	50.00
New HY CMBS Manager	High Yield	**High Yield**	25	0.201	80.00
Capital Guardian	Emerging Market Debt	**Emerging Market Debt**	307	1.074	35.00
Salomon Asset Management	Emerging Market Debt	**Emerging Market Debt**	318	1.432	45.00
Total Global Bonds	Universal	**Universal**	14,339	9.755	6.80

Global Bonds

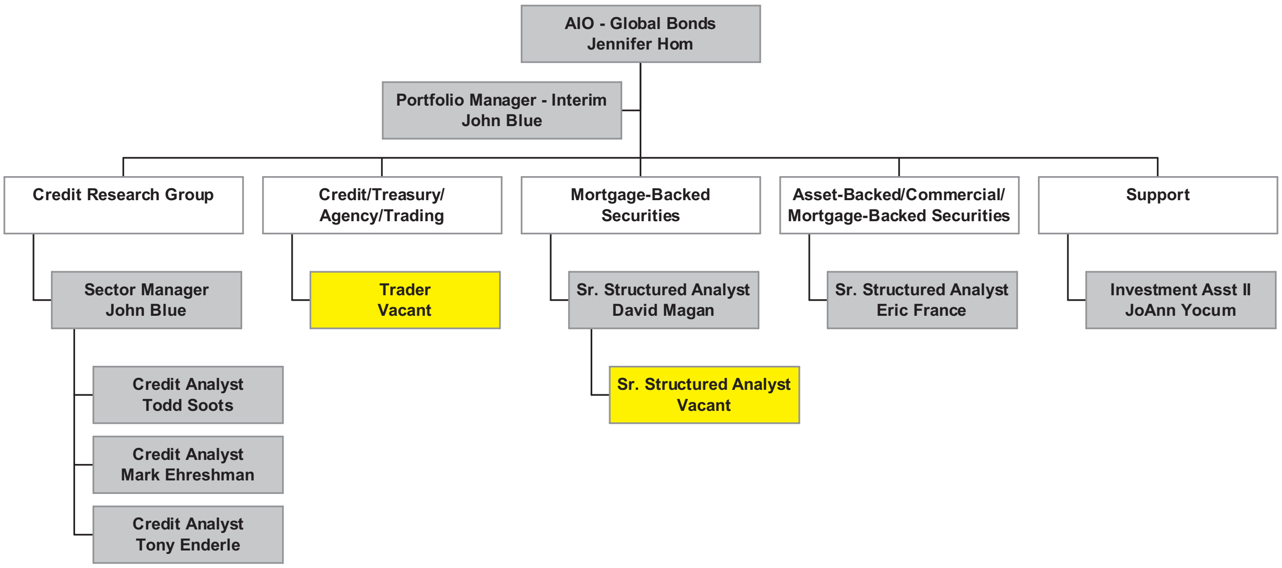
The following exhibit displays the expected alphas and tracking errors of the individual portfolios comprising the Global Bond asset class. The area of each circle provides a visual depiction of the portfolio's relative size.



Resources

Organizational Structure

The current organizational structure is as follows:



Staffing / Hiring

The Global Bond Department currently employs seven professionals and one support person. There is a vacant position for an investment professional to replace an analyst who left in 2004.

The Global Bond Department is headed by the Assistant Investment Officer (AIO)/ Senior Portfolio Manager. The AIO is responsible for the Global Bond asset class achieving its performance objective within its stated risk budget. The AIO is likewise responsible for the overall administration of the department. Supporting the AIO are the Portfolio Manager (PM) and the Investment Analysts.

The credit analysts are responsible for the corporate sector, which includes company analysis and the identification of relative value ideas among the sub sectors. They are also responsible for monitoring the high yield and emerging market managers. The structured analysts are responsible for the treasury, agency, mortgage-backed securities (MBS), commercial mortgage-backed securities (CMBS), and asset-backed securities (ABS) sectors. They are responsible for individual security analysis and trading of securities in their assigned sectors. They are responsible for monitoring the core managers. In addition, the treasury/agency analyst is responsible for trading securities in the corporate sector.

The Portfolio Manager is responsible for the Global Bond sector methodology, process, and risk management. The PM will integrate the outlook of the external managers into the overall Global Bond asset class outlook. Both the AIO and PM are responsible for duration, curve, and sector positioning. Either the AIO or the PM will approve all purchases and sales.

Global Bonds

The team-oriented organizational structure reduces the potential negative impact of the departure of any one employee. The investment analysts cover their assigned sectors and serve as back ups on their fellow analysts' sectors. This setup ensures that all sectors are covered at any time and takes full advantage of opportunities in the market.

Assuming full staffing levels at year-end 2005, the chart below details the estimated annual cost of salaries, benefits and incentive compensation (assuming the target payout level) for the Global Bond asset class.

Schedule of Target Staffing at Year End 2005	Global Bond
Current Staff (2004)	8
Vacant Positions	1
Est. Full Staff (2004)	9
Budgeted New Postions	0
+ / - Internal Transfers	0
Est. 2005 Full Staffing	9
Professional	8
Support	1

Schedule of Estimated 2005 Salary and Benefit Costs Compensation dollars in millions	Global Bonds
Salaries ($ mm)	0.919
Benefits ($ mm)	0.281
Incentive Comp. ($ mm)	0.157
Total Comp. ($ mm)	1.357
Assets in $ billions	14.422
Cost in Basis Points	0.9

Asset Management Fees

The Global Bond asset class utilizes both internal as well as external managers to achieve the performance objectives as detailed in this plan. The estimated external asset management fees for 2005 are shown on the following table.

	Estimate of External Management Fees in Dollars and Basis Points		
	Est. Year End 2005		
	Average Assets External ($ billions)	Estimated Annual Fee ($ millions)	Fees of External Assets (Bps)
Core	0.724	1.352	18.7
High Yield	0.841	3.876	46.1
Emerging Market Debt	0.625	2.506	40.1
Total Global Bonds	**2.190**	**7.734**	**35.3**

Operating Budget

The Global Bond Department's operating budget is $2.020 million or 1.4 bps on our estimated year-end $14.422 billion asset allocation. This represents an increase from the $1.954 million budget in 2004. The increase is higher personnel expenses resulting from the replacement of departing employees with more seasoned staff. The higher personnel expenses were partially offset by reductions in quote and data feeds, research services, information technology, and training & travel expense.

	Schedule of Budgeted Operating Expenses						
	2004 Budget	2005 Budget	Dollar Change	Percent Change	Percent of Total	Asset Size ($ b)	Budget in bps
Personnel Expense	$1,129,349	$1,247,660	118,311	10.48%	61.77%		
Audit/Legal/Consulting Services	$0	$0	-	0.00%	0.00%		
Quotes & Data Feeds	$238,200	$218,800	(19,400)	-8.14%	10.83%		
Research Services	$308,100	$290,600	(17,500)	-5.68%	14.39%		
Analytics	$131,200	$132,000	800	0.61%	6.53%		
Communications	$500	$500	-	0.00%	0.02%		
Information Technology	$73,300	$65,040	(8,260)	-11.27%	3.22%		
Office Equipment & Supplies	$0	$0	-	0.00%	0.00%		
Training & Travel Expenses	$74,275	$65,400	(8,875)	-11.95%	3.24%		
Total	$1,954,924	$2,020,000	65,076	3.33%	100.00%	$14.422	1.4

The following table lists the total cost estimates for managing the Global Bonds portfolio. The total costs for internal management is projected to fall to 1.7 bps as operating expenses increase slower than assets under management. The total external management costs (fees) are estimated at 35.3 basis points of the external Global Bonds assets under management. As a percent of the total Global Bonds portfolio, internally managed assets will account for 84.1% and the external assets under management will make up the remaining 15.9%.

	Schedule of Estimated Total Costs Est. Year End 2005 Costs in Millions of Dollars		
	Internal	External	Total
Staffing Costs	1.357	-	1.357
Operating Budget	0.772	-	0.772
Manager Fees	-	7.734	7.734
Total Costs	2.129	7.734	9.863
Assets Under Management	12,219.0	2,191.0	14,410.0
Costs in Bps	1.7	35.3	6.8

Global Bonds

Initiatives

Implement 2004 Alpha Projects

Global Bonds initiated alpha projects in 2004 to add incremental return to the Global Bonds and/or total fund portfolios as appropriate. To the extent these initiatives have long-term alpha potential, Global Bonds will identify skilled managers as part of its implementation plan. Upon identification of appropriate managers, Global Bonds will fund in 2005.

Performance Attribution Model

Develop a performance attribution model for the internal portfolio. This evaluation model will provide valuable information on how actual decisions impact performance. It will likewise reflect the effectiveness of the Global Bond decision-making process.

Asset Management

Strategy

Highlights of the International Equity Policy and Investment Strategy are detailed below.

	Target Portfolio Allocation	
	Range	Target
Active	70%-90%	80%
Passive	10%-30%	20%
Total International	-	100%
ACWIFxUS Managers	88-95%	92%
Emerging Market Managers	5-8%	5%
Small Cap. Managers	2-5%	3%

- The target allocation to non-U.S. equities is (20%) of plan assets.
- The entire portfolio is 100% externally managed.
- Active management is (80%) of the total portfolio. The remaining (20%) is passively managed.
- The portfolio's performance benchmark is the Morgan Stanley Capital International All Country World Index Free excluding the United States index (MSCI ACWIFxUS Index), which incorporates developed and developing markets.
- The program includes a (5%) dedicated allocation to emerging markets and a (3%) target allocation to small capitalization companies.
- The portfolio's maximum exposure to emerging markets is limited to the MSCI ACWIFx US Index emerging market weighting plus (5%) or (15%) of the total holdings, whichever is greater.

Performance Objectives & Risk Control

The objective of the International Equity portfolio is to outperform the Morgan Stanley Capital International All Country World Index Free excluding the United States index (MSCI ACWI x US) by 75 basis points annualized over a three- to five-year market cycle, net of fees. Based upon the risk tolerances established at the overall fund level, International Equity is expected to track the performance of the benchmark with a realized tracking error in the range of 250 to 300 basis points (2.50% to 3.00%). As a result, staff expects the information ratio (or a level of alpha per unit of risk) to be 0.58.

International Equity

The following table illustrates each existing portfolio, its expected performance objective and forecasted contribution to the total asset class return.

	Portfolio Expected Allocation ($ billions)	% of Total Portfolio	Benchmark	Expected Performance Over Index in Bps	Historical Tracking Error in Bps	Target Information Ratio
Schedule of Expected Performance and Volatility						
Passive						
Barclays	2.760	22.0%	ACWIFxUS	0	0	0
Active						
Barclays	2.634	21.0%	ACWIFxUS	50	100	0.50
Baring	1.380	11.0%	ACWIFxUS	75	295	0.25
Acadian	0.251	2.0%	WorldxUS Small Cap	200	640	0.31
Alliance Bernstein	0.878	7.0%	ACWIFxUS	100	324	0.31
Brandes	1.066	8.5%	ACWIFxUS	150	857	0.18
Boston Company	0.251	2.0%	EMF	150	623	0.24
Capital Guardian	1.003	8.0%	ACWIFxUS	100	573	0.17
First State	0.256	2.0%	EMF	150	767	0.20
JP Morgan Fleming	0.439	3.5%	ACWIFxUS	100	456	0.22
Lazard	0.156	1.2%	EMF	150	843	0.18
Oechsle	0.414	3.3%	ACWIFxUS	100	640	0.16
TT Int'l.	0.442	3.5%	ACWIFxUS	150	767	0.20
Walter Scott	0.456	3.6%	ACWIFxUS	200	859	0.23
Wellington	0.157	1.3%	WorldxUS Small Cap	200	1900	0.11
Total Fund	12.541	100.0%	ACWIFxUS	75	130	0.58

International Equity Composition

The International Equity portfolio uses external management exclusively and staff will continue to review the manager line-up to better achieve performance goals. As a result, current manager allocations may be reduced or eliminated and additional external manager searches launched. Throughout 2005 the percentage of active versus passive management will remain unchanged from prior year and in conformity with the International Equity Investment Policy and Strategy.

		Estimate of Internal/ External and Active/Passive Composition					
		Est. Year End 2004			Est. Year End 2005		
		Active	Passive	Total	Active	Passive	Total
International Equity	**Internal**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	External	78.0%	22.0%	100.0%	80.0%	20.0%	100.0%
	Total	***78.0%***	***22.0%***	***100.0%***	***80.0%***	***20.0%***	***100.0%***

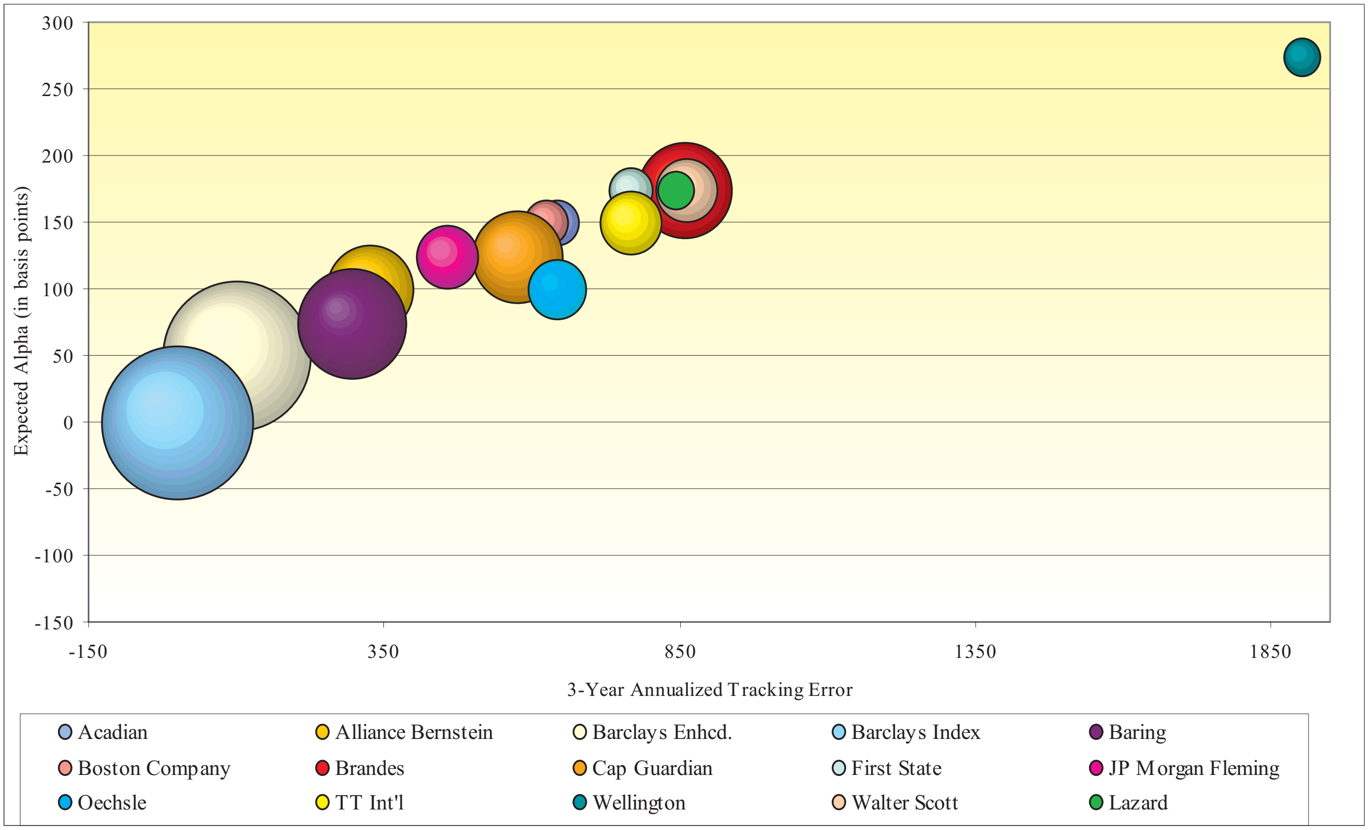
The following table details the size and fees associated with each mandate in the portfolio. The projected fees for 2005 reflect the current cadre of managers utilized in the International portfolio, which may change during the year. Overall, the external manager fees are projected to be $31.3 million or 24.9 basis points on a portfolio of $12.5 billion.

Schedule of Portfolio, Size & Estimated Fees

	Mandate	Benchmark	Average Assets Under Management ($ millions)	Estimated Annual Fee ($millions)	Estimated Annual Fee (bps)
Passive					
Barclays	Passive	ACWIFxUS	$2,760	0.828	3.0
Active					
Barclays	Enhanced	ACWIFxUS	$2,634	3.621	13.8
Baring	Enhanced	ACWIFxUS	$1,380	2.207	16.0
Acadian	Small Cap Value	WorldxUS Small Cap	$251	1.254	50.0
Alliance Bernstein	Core	ACWIFxUS	$878	3.073	35.0
Brandes	Value	ACWIFxUS	$1,066	5.330	50.0
Boston Company	Emerging Markets	EMF	$251	1.881	75.0
Capital Guardian	Growth/Core	ACWIFxUS	$1,003	3.812	38.0
First State	Emerging Markets	EMF	$256	1.868	73.0
JP Morgan Fleming	Growth	ACWIFxUS	$439	1.668	38.0
Lazard	Growth	EMF	$156	0.622	40.0
Oechsle	Growth	ACWIFxUS	$414	1.448	35.0
TT International	Growth	ACWIFxUS	$442	1.060	24.0
Walter Scott	Growth	ACWIFxUS	$456	1.598	35.0
Wellington	Small Cap Growth	WorldxUS Small Cap	$157	1.019	65.0
Total	Active/Passive	ACWIFxUS	$12,541	31.289	24.9

International Equity

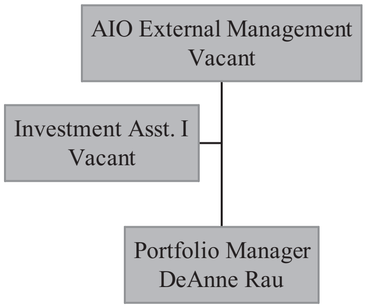
The following exhibit displays the expected returns and tracking errors of the individual International Equity portfolios in a "Bubble Chart" format. The area of each circle provides a visual depiction of the portfolio's relative size. The portfolio's two largest allocations are to the Barclays Global Investors index fund and enhanced index product.



Resources

Organizational Structure

The International Equity Department organizational structure for 2005 will be the following:



International's staff is composed of one portfolio manager who will report to the new Assistant Investment Officer (AIO) - External Management. The portfolio manager is charged with monitoring and reporting on all non-US equity external managers. Staff is also called upon to help in the management of the day-to-day affairs of the department, compose research pieces and participate in department-wide initiatives. The AIO of External Management role is to provide guidance to the portfolio manager and oversight to the total portfolio. In addition, the AIO of External Management:

- Represents the asset class to OPERS Board.
- Keeps senior investment personnel abreast of significant activity in the portfolio.
- Develops strategies that will maximize the portfolio's return within its risk profile.

Staffing / Hiring

The International Equity Department currently employs one professional and no administrative staff. A new AIO - External Management position is budgeted for 2005 and will be filled during the year. International will also receive administrative support in early 2005.

Schedule of Target Staffing at Year End 2005

	International Equity
Current Staff (2004)	1
Vacant Positions	1
Est. Full Staff (2004)	2
Budgeted New Postions	1
+ / - Internal Transfers	0
Est. 2005 Full Staffing	3
Professional	2
Support	1

Schedule of Estimated 2005 Salary and Benefit Costs

Compensation dollars in millions

	International Equity
Salaries ($ mm)	0.306
Benefits ($ mm)	0.089
Incentive Comp. ($ mm)	0.019
Total Comp. ($ mm)	0.414
Assets in $ billions	12.541
Cost in Basis Points	0.3

The chart above details the annual cost of salaries, benefits and incentive compensation (assuming target payout levels) to be paid in 2005 for the International Equity Department at full staffing levels. The projected compensation costs are expected to be $414,000, or 0.3 basis points of total managed assets.

International Equity

Asset Management Fees

Staff is forecasting a $2 million, or 5%, increase in external management fees as a result of the appreciation of the portfolio and increased allocations to active management. The estimated annual expense in basis points is 24.9 basis points, which is 7% lower than the previous year due to fee renegotiation efforts.

The following table details the size and fees associated with each mandate in the portfolio. All fees projected for 2005 reflect the current cadre of managers utilized in the International Equity portfolio, which may change during the year.

	Estimate of External Management Fees in Dollars and Basis Points		
	Est. Year End 2005		
	Average Assets External ($ billions)	Estimated Annual Fee ($ millions)	Fees of External Assets (Bps)
Passive	2.760	0.828	3.0
Active	9.781	30.461	31.1
Total International	**12.541**	**31.289**	**24.9**

Operating Budget

The total 2005 department budget is $628,325 which is a 27% increase from the $496,324 budgeted in 2004. The rise in expenses is entirely due to an increase in personnel.

	Schedule of Budgeted Operating Expenses						
	2004 Budget	2005 Budget	Dollar Change	Percent Change	Percent of Total	Asset Size ($ b)	Budget in bps
Personnel Expense	$265,974	$376,900	110,926	41.71%	63.75%		
Audit/Legal/Consulting Services	$40,000	$1,500	(38,500)	-96.25%	0.25%		
Quotes & Data Feeds	$20,000	$0	(20,000)	-	0.00%		
Research Services	$86,000	$90,000	4,000	4.65%	15.22%		
Analytics	$44,250	$85,000	40,750	92.09%	14.38%		
Communications	$2,900	$2,100	(800)	-27.59%	0.36%		
Information Technology	$3,500	$0	(3,500)	-	0.00%		
Office Equipment & Supplies	$0	$0	-	0.00%	0.00%		
Training & Travel Expenses	$33,700	$35,725	2,025	6.01%	6.04%		
Total	$496,324	$591,225	94,901	19.12%	100.00%	$14.422	0.4

The expense of operating the International Equity portfolio is estimated below. These figures incorporate both the department's operating budget as well as projected external management fees. Total portfolio expense is forecasted to be 25.5 basis points, or approximately $31.917 million. Of this amount, 24.9 basis points--or 98% of the cost--is a result of external management fees.

	Schedule of Estimated Total Costs		
	Est. Year End 2005		
	Costs in Millions of Dollars		
	Internal	External	Total
Staffing Costs	0.414	-	0.414
Operating Budget	0.214	-	0.214
Manager Fees	-	31.289	31.289
Total Costs	0.628	31.289	31.917
Assets Under Management		12,541	12,541
Costs in Bps		24.9	25.5

Initiatives

Throughout 2005, International Equity will engage in the following research initiatives, shown below, and suggest policy changes in an effort to improve performance.

Portfolio Changes

Continue to review existing manager allocations and engage in additional searches if necessary.

Policy Changes

Increase the portfolio's small capitalization target allocation from 3% to 5% in an effort to: 1) have greater conformity between Domestic and International Equity allocation targets; and 2) to take advantage of the stronger long-term growth potential of smaller companies.

Expand the portfolio's emerging market investments to an allocation closer to 3-5% of total plan assets.

Note: all policy changes must first be approved by the OPERS Board.

Research Initiatives

Evaluate the merits of a global equity allocation.

Review the portfolio's currency exposure to better understand risks.

Asset Management

Strategy

The role of the Real Estate asset class is to provide stable returns and diversification to the total OPERS investment fund. Real Estate traditionally has exhibited low to negative correlation with stocks and fixed income investments. Real Estate has also served as a potential inflation hedge. The current Real Estate target allocation is 9%, with a range of plus or minus 4%. The range is intended to allow the Real Estate asset class to remain in compliance with the policy given the illiquid nature of the asset class and execute its tactical investment strategies. During 2005, the Real Estate asset class was in the lower end of the allocation range.

The primary focus of the department will be to continue to transition the asset class in accordance with the Real Estate Investment Policy and Strategic Plan (policy) and the 2003-2004 Implementation Plan. The policy states that 90% of the asset class consists of investments in private, directly held real estate and 10% of the asset class consists of public REITs.

Within the private investment portfolio, the policy states a target of 60% Stable investments, 20% Enhanced investments, and 10% High Return investments. Each of these style sectors has a target allocation with a range that allows a certain level of flexibility. As shown in the following table, the current portfolio allocation consists of 19% REITs, 44% Stable, 32% Enhanced, 5% High Return, and virtually nothing (.18%) in Mortgages.

In 2005, we will continue our concerted effort to increase the fund's exposure to real estate by researching a variety of opportunities and structures for investing in real estate. In addition, we will continue the process of repositioning the portfolio to bring it within the new policy guidelines. We will continue to work toward increasing our exposure to Stable properties, simultaneously reducing our exposure to REITs and Enhanced Return properties. However, given the illiquid nature of the market and the difficulty in predicting timing of capital flows, we do expect to identify and take advantage of some opportunities in the Enhanced Return area.

2005 Implementation Transaction Summary by Style

Internal	9.30.2004 Portfolio Allocation ($billions)	% of Real Estate Portfolio	Projected 2004-2005 Dispositions ($billions)	Projected 2004-2005 Acquisitions ($billions)	Projected 12.31.2005 Portfolio Allocation ($billions)	% of Real Estate Portfolio
REITs	0.643	19%	0.140		0.503	13%
External						
Direct Equity - Debt	0.006	0%	0.006		-	0%
Direct Equity - Stable Return	1.456	44%	0.042	0.462	1.876	47%
Direct Equity - Enhanced Return	1.049	32%	0.245	0.355	1.159	29%
Direct Equity - High Return	0.167	5%	0.001	0.168	0.334	8%
REIT External Manager	-	0%	-	0.140	0.140	3%
Total External	2.678	81%	0.294	1.125	3.509	87%
Total Asset Class	3.321	100%	0.434	1.125	4.012	100%
Goal	5.076	100%			5.643	100%

Acquisitions and sales will be a function of pricing opportunities over the next year. Currently, there appears to be an oversupply of capital in Stable Return or income producing assets. The pricing for Stable properties has been extremely strong this year and, as a result, it has been difficult to acquire Stable properties without sacrificing return. We anticipate adding and external manager for REITs as we implement the Heath Care asset allocation.

To accomplish our policy goals, we will invest in one or more Open End Core funds as a way of achieving exposure to Stable properties. We will continue to invest in office, retail, multi-family, and industrial properties through our separate accounts with our Stable managers. We will conduct searches for Enhanced and High Return funds in the mezzanine and international areas. We will conduct a search for additional managers in the Enhanced sector with a relationship that will take the form of either a separate account or one or more Enhanced funds.

We do not expect to maintain our momentum for dispositions at the rate we have seen in recent years, but we will continue to evaluate each asset on its merits and will sell selected assets as appropriate.

The following table illustrates our real estate investments by property type as of September 30, 2004. To meet the policy guidelines, we will need to increase our exposure to the retail and office categories and reduce our exposure to the specialty category. We expect that as we increase our exposure to retail, office, industrial, and multi-family, our exposure to the specialty category will fall proportionately.

Real Estate Portfolio by Property Type

	As of 9.30.04 ($ millions)	% of Total	Target Range	NCREIF Allocation as of 9/30/04	Difference
Industrial	614	22.93%	9%-29%	18.44%	4.49%
Multi-family	849	31.70%	9%-29%	19.26%	12.44%
Office	732	27.33%	20%-60%	38.66%	-11.33%
Retail	20	0.75%	10%-30%	21.41%	-20.66%
Specialty*	463	17.29%	0%-20%	1.73%	15.56%
REITS	643	24.01%	5%-15%		
Total	2,678	100%		100%	

**Includes Hotels, Single-family, Healthcare, Storage, Movie Studio and Land.*

Performance Objectives & Risk Control

The Real Estate asset class is expected to produce a return equal to or greater than 100 bps, annualized over a full market cycle, above that of the custom benchmark which is comprised of 90% NCREIF Property Index (NPI) and 10% Wilshire Real Estate Securities Index (WRESI). The active management of the Stable component is intended to generate a limited portion of the targeted excess return. The main source of excess return is from the allocation to the Enhanced, High Return, and REIT components, which are intended to provide the ability to take advantage of tactical and other higher return investment opportunities to produce excess returns over the benchmark for the Real Estate asset class.

The objective for each manager is to exceed, on a cumulative basis, returns for comparable portfolios in the industry. Each manager is compensated on a performance basis in addition to the base asset management fee. The performance-based fees are structured with a series of hurdles so that as OPERS makes more money, on a cumulative cash basis, the manager can achieve a higher percentage level of compensation.

The following chart demonstrates the expected out-performance of the Real Estate portfolio to its benchmark.

Schedule of Expected Performance and Volatility						
Internal	Portfolio Expected Allocation ($ billions)	Benchmark	Expected Real Estate Allocation	Expected Performance Over Index in Bps	Estimated Tracking Error in Bps	Target Information Ratio
REITs	0.503	WRESI	12.5%	100	400	0.25
External						
Direct Equity - Stable Return	1.876	NPI	46.8%	50	200	0.25
Direct Equity - Enhanced Return	1.159	NPI	28.9%	100	400	0.25
Direct Equity - High Return	0.334	NPI	8.3%	400	800	0.50
REIT External Portfolio	0.140	WRESI	3.5%	100	400	0.25
Total External	3.509	Custom	87.5%	98	250	0.39
Total Fund	4.012	Custom	100.0%	100	250	0.39
Goal	5.643	Custom	100.0%	100	250	0.40

Risk Control Policy

As a public pension fund, our risk tolerance may be different than that of other investors, and controlling risk is just as important as seeking higher returns. The Townsend Group has used quantitative models to allocate and control risk across investment sector styles. The optimal portfolio from these models is a mixture of Stable, Enhanced, High Return, and REIT investments. It is important to follow a policy that seeks to build a well-diversified portfolio, including diversification by property type, location, and investment manager. To manage risk, the Real Estate asset class implements a diversification strategy on a portfolio-wide basis and executes policies and procedures throughout the due diligence, acquisition, and asset management processes.

Risk Control Procedures

With data limitations, illiquidity, transaction costs, and other concerns, the real estate market does not provide the information or efficiency needed to quantify risk using methods normally found in the stock and bond markets. The Real Estate asset class controls risk through alternative methods, which include diversification strategies, leverage policies, valuation standards, acquisition and disposition processes, and asset and insurance risk management. Further detail for each risk control method can be found in the Real Estate Policies and Procedures.

Real Estate

Composition

Within the Real Estate portfolio, the REITs are managed actively and internally, with the remaining assets managed by external managers. As we contemplate increasing the overall exposure to REITs as part of the Health Care Asset Allocation, we are analyzing the viability of retaining external managers for a portion of the REIT portfolio in 2005, and indexing a portion of the internal portfolio. We do not anticipate bringing any portion of the management of the direct real estate internal. The following table summarizes the Real Estate asset class characteristic information as of the end of 2004, and the estimated characteristic information at the end of 2005.

		Estimate of Internal/External and Active/Passive Composition					
		Est. Year End 2004			Est. Year End 2005		
		Active	Passive	Total	Active	Passive	Total
Real Estate	Internal	10.0%	0.0%	10.0%	1.3%	8.7%	10.0%
	External	90.0%	0.0%	90.0%	90.0%	0.0%	90.0%
	Total	***100.0%***	***0.0%***	***100.0%***	***91.3%***	***8.7%***	***100.0%***

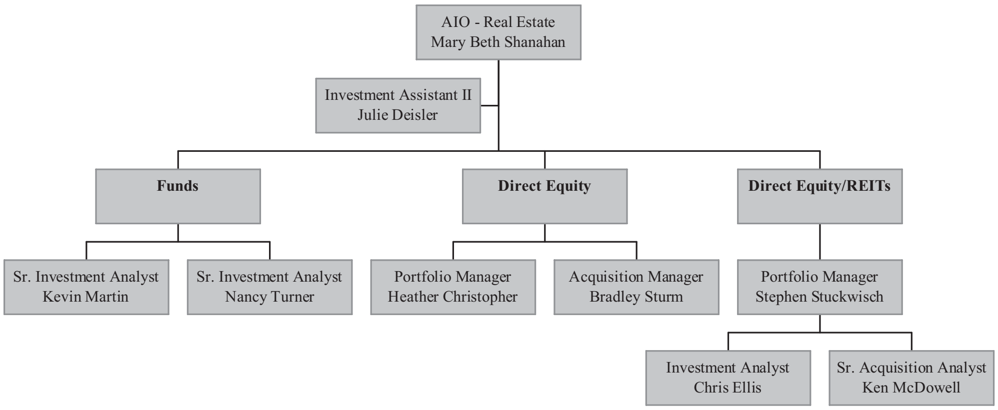
The following table details the size and fees associated with each manager's mandate in the Real Estate asset class. All fees projected for 2005 reflect the current roster of managers utilized in the Real Estate portfolio plus projected fees for a new manager.

Schedule of Portfolio, Size & Estimated Fees	Mandate	Benchmark	Average Assets Under Management ($ millions)	Estimated Annual Fee ($ millions)	Estimated Annual Fee (bps)
Internal					
REITs	REIT	WRESI	$572.82	0.125	2
External					
Bristol Group	Mixed	NPI	$796.64	3.983	50
CBA Huntoon Hastings	Mortgage	NPI	$1.70	0.006	38
Faison & Associates	Mixed	NPI	$173.16	0.935	54
Great Point Investors	Stable	NPI	$175.01	0.945	54
LaSalle	Stable	NPI	$25.00	0.150	60
Legg Mason	Mixed	NPI	$49.34	0.252	51
Lowe Enterprises	Enhanced	NPI	$244.66	1.297	53
PRISA II	Stable	NPI	$35.00	0.525	150
Rothschild Realty	Enhanced	NPI	$302.61	1.906	63
Sarofim Realty	Stable	NPI	$96.63	0.483	50
Sentinel Real Estate Corp	Stable	NPI	$362.79	1.814	50
TGM & Associates	Stable	NPI	$627.12	3.136	50
New REIT Managers	REIT	WRESI	$70.00	0.350	50
New Opportunity Funds	High Return	N/A	$58.33	0.875	150
New Open End Core Funds	Stable	N/A	$35.00	0.525	150
Mezzanine Fund	Enhanced	N/A	$30.00	0.450	150
Global Fund	High Return	N/A	$10.00	0.150	150
Total	Mixed	Custom	$3,666	$ 17.908	49

Resources

Organization Structure

The following is a projected organizational structure as of the start of calendar year 2005.



Staffing / Hiring

The Real Estate Department currently has nine members on staff, consisting of eight professionals and one support personnel. Total staff compensation is estimated at $1.23 million or 3.6 basis points of assets under management.

Assuming full staffing levels at year-end 2005, the following chart details the annual cost of salaries, benefits and incentive compensation paid in 2005 (assuming the target payout level) for the Real Estate asset class.

Schedule of Target Staffing at Year End 2005

	Real Estate
Current Staff (2004)	9
Vacant Positions	0
Est. Full Staff (2004)	9
Budgeted New Postions	0
+ / - Internal Transfers	0
Est. 2005 Full Staffing	9
Professional	8
Support	1

Schedule of Estimated 2005 Salary and Benefit Costs

Compensation dollars in millions

	Real Estate
Salaries ($ mm)	0.950
Benefits ($ mm)	0.284
Incentive Comp. ($ mm)	0.123
Total Comp. ($ mm)	1.357
Assets in $ billions	5.643
Cost in Basis Points	2.4

No positions are currently vacant in the Real Estate area, and we have not budgeted any new positions for 2005.

Real Estate

Operating Budget

The Real Estate Department 2005 budget is $1.664 million, which is an 8.32% decrease from the 2004 budget of $1.815 million. The decreases in the Operating Budget where primarily due to reductions in personnel expenses, research, and analytics. A detailed schedule of expenses is presented below.

Schedule of Budgeted Real Estate Operating Expenses	2004 Budget	2005 Budget	Dollar Change	Percent Change	Percent of Total	Asset Size ($ b)	Budget in bps
Personnel Expenses	$1,367,019	$1,246,025	(120,994)	-8.85%	74.88%		
Audit/Legal/Consultant Services	$320,000	$320,000	-	0.00%	19.23%		
Quotes & Data Feeds	$20,400	$20,400	-	0.00%	1.23%		
Research	$17,500	$5,600	(11,900)	-68.00%	0.34%		
Analytics	$19,700	$0	(19,700)	-	0.00%		
Communications	$1,300	$1,300	-	0.00%	0.08%		
Information Technology	$0	$9,420	9,420	-	0.57%		
Office Equipment & Supplies	$125	$0	(125)	-	0.00%		
Training & Travel Expenses	$69,000	$61,225	(7,775)	-11.27%	3.68%		
Total	$1,815,044	$1,663,970	(151,074)	-8.32%	100.00%	$5.643	2.9

The total cost of operating the Real Estate asset class is estimated in the table below. These figures incorporate both the internal expenses as well as the external management fees projected for 2005.

Schedule of Estimated Total Costs Est. Year End 2005 Costs in Millions of Dollars	Internal	External	Total
Staffing Costs	1.522	-	1.522
Operating Budget	0.418	-	0.418
Manager Fees	-	18.546	18.546
Total Costs	1.940	18.546	20.486
Assets Under Management	589.5	5,053.4	5,643.0
Costs in Bps	N/A	36.7	36.3

Initiatives

Increase Exposure to Real Estate

The primary focus of the team will be to analyze ways to increase the fund's exposure to real estate by increasing our allocation to stable assets. Through the end of 2008, an estimated $4 billion in incremental dollars must be invested in real estate to achieve the target allocation of 9%.

Increase Returns

We will evaluate opportunities to achieve increased returns in the Real Estate portfolio. These opportunities are expected to take the form of separate account and fund investments in enhanced and specialty areas, as well as international and mezzanine investments.

Savings through Operations

We will continue to evaluate opportunities to produce savings through operations. Areas where savings may be possible include consolidation of property tax appeals and consolidation of contracts for annual audit. In addition, we will continue to examine our compensation arrangements with our managers to ensure they are both fair and competitive.

Asset Management

Performance Objectives & Risk Control

The Private Equity Policy establishes the asset class objectives and are restated below:

"The asset allocation study also establishes the long-term net expected return for private equity. The asset allocation study conducted in 2003 requires a mature portfolio to return a net 10.5% over the long-term. This return is based on a mature portfolio consisting of aged exposures and new commitments that are a drag on short-term performance."

The Private Equity Policy establishes the program risk controls listed below. Please refer to the Private Equity Policy for details.

Risk Management

- Liquidity
- Targeted Portfolio Structure
- Vintage Risk
- Manager Risk
- Firm Risk
- Currency
- Industry
- Leverage

Investable Securities and Restricted Investments

- Investment Types
- Co-Investments and Direct Placements
- Hedge Funds
- Derivatives
- Real Estate
- Ohio and Regional
- Stock Distributions
- Child Labor
- Privatization

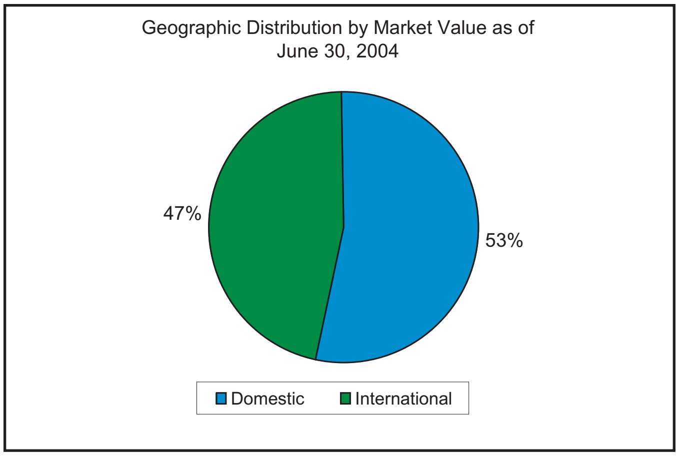
Private Equity

Composition

The Private Equity portfolio has an unaudited market value of $300 million as of June 30, 2004. The following table and charts show the composition of the market value and outstanding commitments.

Schedule of OPERS' Private Equity Portfolio by Vintage ($millions)							
Fund	**Type**	**Vintage**	**Commitment**	**Capital Called**	**Outstanding Commitment**	**Market Value**	**% Market Value**
Ohio/Regional Legacy							
Primus Capital Fund II	Venture Capital	1987	10.0	10.0	0.0	0.0	0.0%
Blue Chip Capital I	Venture Capital	1992	15.0	15.0	0.0	1.1	0.4%
Primus Capital Fund III	Venture Capital	1993	10.0	10.0	0.0	0.7	0.2%
Blue Chip Capital II	Venture Capital	1997	15.0	15.0	0.0	5.3	1.8%
Primus Capital Fund IV	Venture Capital	1997	15.0	14.6	0.4	7.0	2.3%
Linsalata Capital Partners Fund III	Corporate Finance	1998	15.0	15.0	0.0	8.7	2.9%
MCM Capital Partners	Corporate Finance	1998	15.0	11.4	3.7	11.1	3.7%
Blue Chip Capital III	Venture Capital	1999	25.0	25.0	0.0	7.7	2.6%
Blue Chip Capital IV	Venture Capital	2000	25.0	12.0	13.0	8.3	2.8%
Linsalata Capital Partners Fund IV	Corporate Finance	2000	25.0	14.8	10.2	10.9	3.6%
Primus Capital Fund V	Venture Capital	2000	25.0	14.1	10.9	9.6	3.2%
Sub-Total Ohio/Regional Legacy			195.0	156.9	38.2	70.4	23.4%
International Legacy							
OPERS International Timber Fund I	Special Situations	1994	234.3	234.3	0.0	68.0	22.6%
AIG Global Emerging Markets Fund	Special Situations	1997	50.0	36.8	13.2	23.2	7.7%
Cambium II Fund	Special Situations	1997	63.7	63.7	0.0	19.7	6.5%
Sub-Total International Legacy			348.0	334.8	13.2	110.9	36.9%
New Program							
Blackstone Capital Partners IV	Corporate Finance	2002	175.0	60.9	122.6	59.4	19.7%
Coller International Partners IV	Special Situations	2002	75.0	19.1	55.9	17.6	5.8%
Castle Harlan Partners IV	Corporate Finance	2003	75.0	10.0	65.0	6.1	2.0%
Charterhouse Capital Partners VII *	Corporate Finance	2003	93.3	9.9	83.4	10.9	3.6%
CMEA Ventures VI	Venture Capital	2003	25.0	0.0	25.0	0.0	0.0%
FS Equity Partners V	Corporate Finance	2003	50.0	3.3	46.7	1.8	0.6%
Permira Europe III *	Corporate Finance	2003	62.2	2.8	59.4	1.7	0.6%
TPG Partners IV	Corporate Finance	2003	100.0	15.6	84.4	12.9	4.3%
Essex Woodlands Heath Ventures VI	Venture Capital	2004	45.0	2.4	42.6	2.0	0.7%
First Reserve Fund X	Corporate Finance	2004	50.0	0.0	50.0	0.0	0.0%
Hellman & Friedman Capital Partners V	Corporate Finance	2004	75.0	0.0	75.0	0.0	0.0%
Kirtland Capital Partners IV	Corporate Finance	2004	10.0	0.0	10.0	0.0	0.0%
Lincolnshire Equity Fund III	Corporate Finance	2004	25.0	0.0	25.0	0.0	0.0%
New Mountain Capital II	Corporate Finance	2004	50.0	0.0	50.0	0.0	0.0%
OCM Principal Opportunities Fund III	Special Situations	2004	50.0	7.6	42.4	7.2	2.4%
Providence Equity Partners V	Corporate Finance	2004	50.0	0.0	50.0	0.0	0.0%
Sub-Total New Program			1,010.5	131.6	887.4	119.6	39.7%
Total			$1,553.5	$623.3	$938.8	$300.9	100%

* Commitments in Euros, converted to dollars at: 1.24



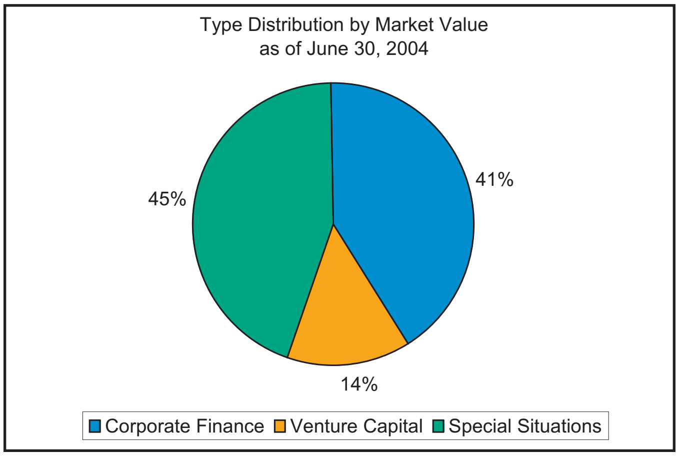


Table 1. Actual Portfolio Fair Market Value vs. Target Fair Market Value ($ millions)

	Domestic			International			Total		
	Actual %	Target %	Difference %	Actual %	Target %	Difference %	Actual %	Target %	Difference %
Corporate Finance									
Large	24.0%	30.0%	-6.0%	4.2%	12.5%	-8.3%	28.2%	42.5%	-14.3%
Mid/Small	12.8%	20.0%	-7.2%	0.0%	7.5%	-7.5%	12.8%	27.5%	-14.7%
Total	36.9%	50.0%	-13.1%	4.2%	20.0%	-15.8%	41.1%	70.0%	-28.9%
Venture	13.8%	15.0%	-1.2%	0.0%	0.0%	0.0%	13.8%	15.0%	-1.2%
Special Situations	2.4%	10.0%	-7.6%	42.7%	5.0%	37.7%	45.1%	15.0%	30.1%
Total	53.1%	75.0%	-21.9%	46.9%	25.0%	21.9%	100.0%	100.0%	0.0%

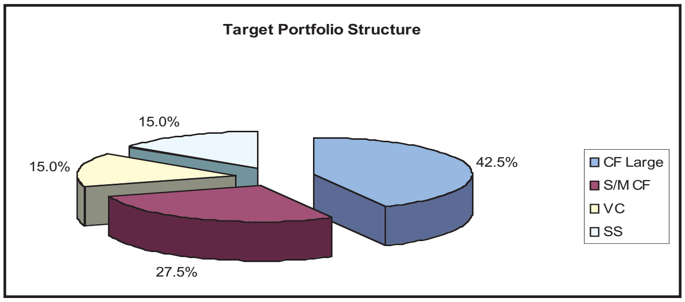
Strategy

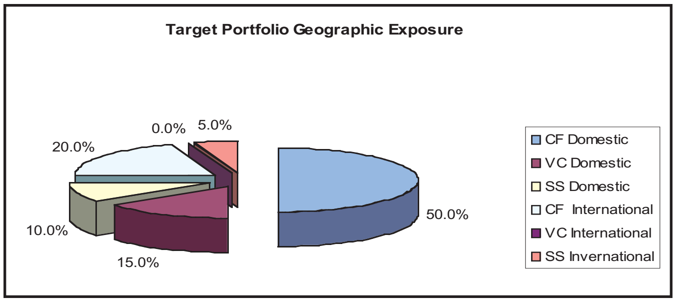
OPERS seeks to establish a top-tier Private Equity program generating leading risk-adjusted long-term returns. The following sections describe our short and long-term strategic efforts for achieving this objective.

Private Equity

Targeted Portfolio Structure

The Private Equity exposure will be built over time and balances the need for exposure with investment opportunities and vintage risk. The figures presented within this section are best approximations and are designed to achieve the target portfolio structure by mid-year 2009. [Note that the targets are bounded by +/- 5%.]

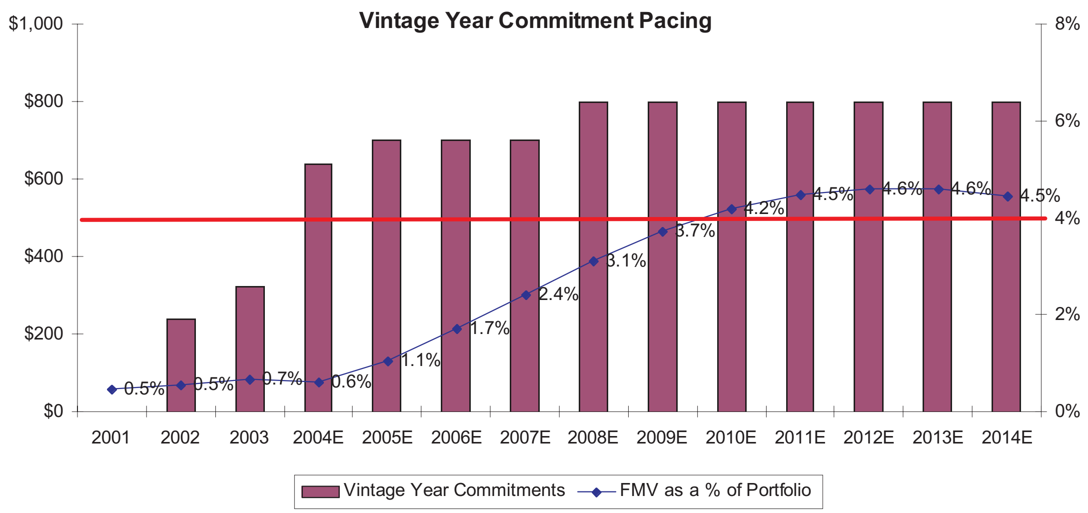




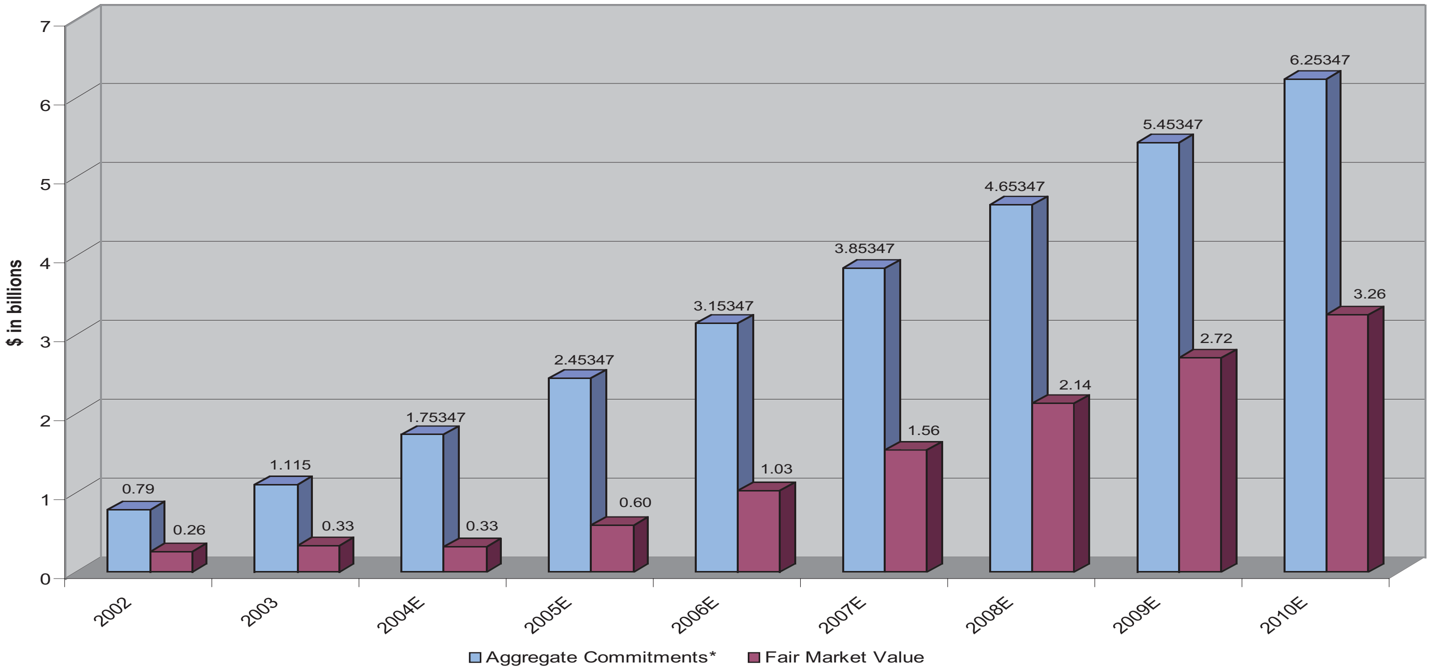
Investment Pacing

Investment pacing controls the commitment budget. Multi-factor models are used to determine the rate of commitments to achieve a target market value exposure in a period of time. The graph below depicts the updated investment pacing model in millions of dollars per year to achieve a 4% target (+/- 3%) market value exposure by mid-year 2009. While the investment pacing graph indicates precise annual commitments, the actual 2005 commitments will be in the range of $550-850 million and will be approximately $4 billion from 2002 - 2008.

Projected Investment Pace Through 2011 ($Millions)



The graph below illustrates aggregate commitments and fair market value for the portfolio, based on the following projected commitment schedule: $250 million in 2002, $435 million in 2003, $680 million estimated in 2004, $700 million through 2007, and $800 million per year thereafter.



Commitments in 2005

The 2005 investment pacing targets $700 million in commitments with a range from $550-850 million. At this time, commitments are expected broadly across primary partnerships, including domestic and international corporate finance, venture, and special situations. Discretionary commitments, including an Ohio/midwest and venture capital mandate, are imbedded in the $700 million target. The actual 2005 commitments are dependent on market opportunities and may vary from the anticipated commitments shown in Table 2.

Table 2 - Anticipated Commitments in 2005 ($millions).

	Domestic			International			Total		
Corporate Finance									
Large	$125	-	$175	$50	-	$100	$200	-	$250
Mid/Small	75	-	150	75	-	125	175	-	250
Total	$200	-	$325	$125	-	$225	$375	-	$500
Venture	$125	-	$175	$0	-	$25	$125	-	$200
Special Situations	$50	-	$100	$0	-	$50	$50	-	$150
Total	$375	-	$600	$125	-	$300	$550	-	$850

Commitment Size

Table 3 shows the typical commitment range for primary partnerships and discretionary mandates.

Table 3 - Typical Commitment for Each Type of Primary Partnership ($ millions).

Type	Typical Commitment Range ($millions)
Corporate Finance	$25 - $150
Venture Capital	$25 - $50
Special Situations	$25 - $75
Discretionary Mandates	$50 - $150

Strategic Implementation and Number of Commitments

Capital will be invested through Private Equity partnerships and discretionary managers investing in Private Equity partnerships. Selecting the appropriate mix of primary partnerships and discretionary mandates requires balancing several factors including maximizing performance, creating appropriate diversification, increasing negotiating leverage and minimizing the administrative burden. Table 4 shows the estimated number of commitments in 2005.

Table 4 - Estimated Number of Commitments 2005.

	Domestic			International			Total		
Corporate Finance									
Large	0	-	2	0	-	1	0	-	3
Mid/Small	1	-	2	1	-	2	2	-	4
Total	1	-	4	1	-	3	2	-	7
Venture	3	-	5	0	-	1	3	-	6
Special Situations	1	-	3	0	-	2	1	-	5
Total	5	-	12	1	-	6	6	-	18

Discretionary managers may be used for broad market mandates or to gain exposure to relatively small or niche portfolio components. Each discretionary manager will make commitments to multiple primary partnerships over several years, further improving the portfolio diversification. Table 5 identifies the current and projected use of discretionary managers.

Staff anticipates completing the first of these discretionary commitments, a $100 million diversified discretionary mandate, by the end of 2004. Staff is actively pursuing a discretionary venture capital mandate and an Ohio/midwest mandate anticipating commitments in 2004 and 2005 respectively. During 2005, staff will seek another discretionary venture capital mandate (if a qualified opportunity exists) and consider discretionary options for a potential co-investment program. Staff may also consider other niche discretionary mandate placements including small funds (<$250 million) and/or emerging managers. Discretionary mandate efforts are communicated to the Investment Committee on a monthly basis.

Table 5 - Estimated Number of Commitments 2005.

Discretionary Mandate	Commitment ($ millions)	Year
Broad Market	$100	2004
Venture Capital	$75	2004
Ohio/Midwest	$50	2005
Venture Capital	$75	2005
Co-Investment	TBD	TBD
Total	**$300-TBD**	

General Partners

General partner selection is critical for outperformance and we proactively seek relationships with experienced, top-tier general partners. Working with the Private Equity advisor, peers and all available sources, we filter and review the general partners in each subclass and initiate a dialogue regarding potential participation in their new partnerships, even if they are not expected in the market for years. Further, we limit exposure to first-time general partners. The Private Equity general partner selection procedures describe the due diligence process and factors for consideration.

We contain the number of general partners for several reasons. We want to maximize our commitment size per general partner to increase the likelihood of advisory roles and improved negotiating leverage. Meaningful allocations also increase access to general partners, improving market knowledge and the opportunity for co-investment rights. Containing the number of general partners also minimizes the administrative burden and allows continued meaningful participation in a mature program. The vast majority of our commitments will be through primary participation in general partnerships.

Co-Investments and Directs

A co-investment plan is expected to be presented to the Investment Committee during 2005 and implications for this Annual Investment Plan will be discussed at that time. Currently, co-investments and direct investments are restricted by the Private Equity Policy.

Strategic Intangibles

The following items describe additional approaches for developing a competitive Private Equity program.

Staff Development

As we staff the Private Equity Department, we will build core competencies. Initially, these will include performing due diligence, administering advisory roles, and monitoring portfolio compliance. Longer-term, we anticipate developing capabilities to capture the economic advantages of co-investment and perhaps direct opportunities.

Networking

Information is critical and we will maximize our market knowledge by participating in industry conferences and actively networking with peers, including public and corporate plans, endowments, foundations, and financial institutions.

Active Participation in Partnerships

We will exercise our partnership rights including participation in advisory boards and valuation committees. We will also participate in all meetings and actively monitor partnership compliance.

Remain Opportunistic

While operating consistently within the Private Equity Policy, we will remain alert and rapidly assess unforeseeable opportunities. As markets evolve, situations may arise that require timely, critical analysis, and contrarian approaches. We must remain open to new ideas and unique investment structures.

Maintain Patience

OPERS has a competitive advantage in the marketplace with the ability to provide long-term, patient capital. We will remain committed to our policy and strategy and resist pressures to disrupt investment pacing or force sales.

OPERS Strategic Planning

OPERS has identified three investment themes for further consideration in a total fund investment approach. Staff will participate in these efforts and consider associated Private Equity investment approaches.

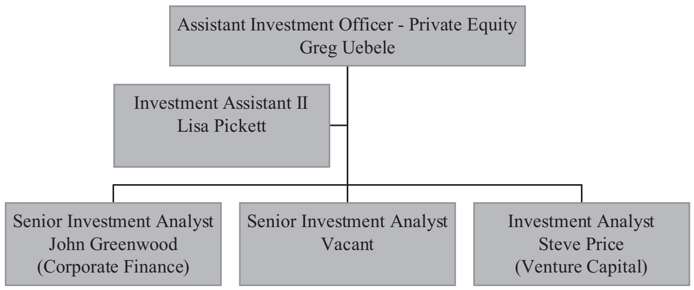
Media Relations and Reputation

OPERS has a unique opportunity to establish a reputation as a preferred partner in the Private Euity marketplace. We recognize the importance of this reputation and seek to enhance our standing through appropriate conduct. Relations will be managed professionally and discreetly.

Resources

The following items describe additional approaches for developing a competitive Private Equity program.

Organizational Structure



Staffing/Hiring

The Private Equity Department currently consists of an AIO, Senior Investment Analyst and Investment Analyst. At the end of 2003, the Private Equity Department evolved from a generalist structure to a specialized structure with John Greenwood leading corporate finance and Steve Price leading venture capital. This structure allows a more focused approach for deal flow and portfolio monitoring. Staff maintains lead and back-up roles for each portfolio partnership.

The growth of the Private Equity portfolio requires additional support and staff is actively recruiting to fill the Senior Investment Analyst position as outlined in the 2004 Annual Investment Plan.

Asset Management Fees

The fees for Private Equity consist of two parts, the annual management fee, typically ranging from 1.0% to 2.0% of commitments through the term of the partnership, and a carried interest, that is taken from realized profits. The management fees are generally paid through capital calls quarterly or semi-annually. Discretionary managers have an additional layer of fees, generally about 1%. Partnership management fees may be offset, deferred or waived periodically and carried interest varies with time and success. The following table estimates the Private Equity asset management fees for 2005. Note that Private Equity fees relative to market value are skewed in formative years due to the lag between commitments and investments. Significant portions of the fees are recoverable before general partners receive carry.

Estimate of Management Fees - 2005 ($millions and bps)	
Estimated Average Commitments	$2,000
Estimated Average Market Value	$500
Estimated Average Fee	1.25%
Estimated Management Fee ($millions)	$25.0
Estimated Management Fee (bps)	500

Operating Budget

The Private Equity Department 2005 operating budget is set at $1.925 million, a 7.10% increase versus the 2004 budget of $1.797 million. The increase in personnel expense includes the cost of living/merit eligibility of existing employees along with the addition of a senior investment analyst. Consulting services include assistance with policy & strategy, due diligence and portfolio monitoring and reporting. Training & travel expenses are associated with due diligence and portfolio monitoring.

	Schedule of Budgeted Operating Expenses						
	2004 Budget	2005 Budget	Dollar Change	Percent Change	Percent of Total	Asset Size ($ b)	Budget in bps
Personnel Expense	$518,795	$630,050	111,255	21.44%	32.74%		
Audit/Legal/Consulting Services	$1,200,000	$1,200,000	-	0.00%	62.35%		
Quotes & Data Feeds	$0	$0	-	0.00%	0.00%		
Research Services	$3,600	$4,500	900	25.00%	0.23%		
Analytics	$0	$0	-	0.00%	0.00%		
Communications	$1,500	$1,500	-	0.00%	0.08%		
Information Technology	$2,800	$0	(2,800)	-	0.00%		
Office Equipment & Supplies	$9,350	$0	(9,350)	-	0.00%		
Training & Travel Expenses	$60,850	$88,450	27,600	45.36%	4.60%		
Total	$1,796,895	$1,924,500	127,605	7.10%	100.00%	$0.627	30.7

Initiatives

Implement a Co-Investment Program

The Private Equity staff anticipates developing a co-investment plan by mid-year and presenting such a plan to the Investment Committee. This plan will set forth short and long-term objectives for successful implementation and the staff will begin executing these plans in 2005.

Asset Management

Fund Services Overview

The Fund Services Group provides investment services across all asset classes. The objective of the group is to provide quality middle office and operational support to the investment staff for both internal and external investment management. The ultimate goal of the group is to centralize common functions, build efficient processing capabilities, and ensure that investment operations supporting the investment activities meet industry-wide best practices within reasonable cost constraints.

The use of extensive internal management materially reduces investment costs but requires on-going effort and capital investment to avoid the curtailment of savings through inefficient operations and redundant processes. With the addition of external Domestic Equity and Fixed Income managers, there is a need to implement more sophisticated communication, monitoring, and risk management processes with external entities. The Fund Services Group is charged with implementing efficient operations through (1) implementing enhanced policies and procedures and (2) installing information technology aimed at better risk control, enhancing transparency across the various asset classes, and attaining improved efficiencies in the investment program. The Fund Services Group interacts with internal staff other than Investments to effectively streamline processes for investment management activities identified by the business users.

The Fund Services Group's primary responsibilities are:

Reporting
- Performance and Attribution reporting to the OPERS Board and external parties based on performance returns calculated by State Street Bank and verified by the Investment Accounting Group
- Preparation of financial and informational reports, including the Annual Investment Plan, the Annual Review, a Quarterly Investment Report, and the Investment section of the CAFR
- Responding to surveys and external information requests including ORSC and SB 133 reporting
- Brokerage commissions, securities lending, proxy voting, securities litigation, etc

Operations
- Portfolio compliance/risk management, responsible contractor compliance, and investment protection principles compliance
- Policy development and maintenance
- Infrastructure automation, including the Investment Repository

Information Technology
- Act as liaison between Investment professionals and IT to build and maintain necessary technologies
- Maintain and enhance the Investment Intranet

Divisional Budgeting

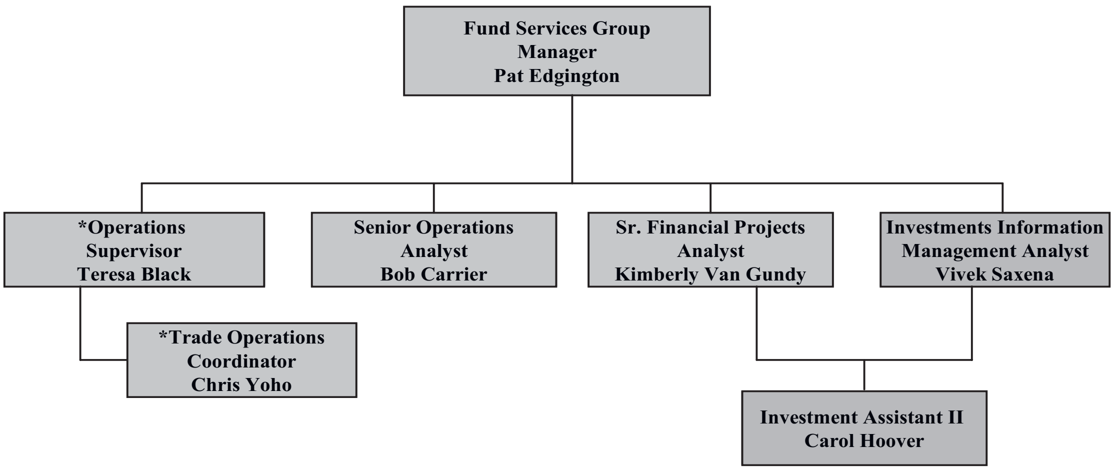
Fund Services

During 2005, the Fund Services Group will continue to focus on adding value to the organization through projects described below in the initiatives section.

Resources

Organizational Structure

The following is a projected organizational structure as of the start of 2005.



*Title subject to change as Back Office functions transition to Investment Accounting and Fund Services assumes different responsibilities.

Staffing / Hiring

The Fund Services Department currently has seven members on staff, consisting of five professionals and two support personnel.

Schedule of Target Staffing at Year End 2005	Fund Services Group
Current Staff (2004)	9
Vacant Positions	0
Est. Full Staff (2004)	9
Budgeted New Postions	0
+ / - Internal Transfers	-2
Est. 2005 Full Staffing	7
Professional	5
Support	2

Currently there are no vacant positions in the Fund Services Group.

Operating Budget

The Fund Services Department 2005 operating budget is set at $0.853 million, a 16% decrease versus the 2004 budget of $1.017 million.

Schedule of Budgeted Operating Expenses	2004 Budget	2005 Budget	Dollar Change	Percent Change	Percent of Total	Asset Size ($ b)	Budget in bps
Personnel Expense	$716,449	$641,550	(74,899)	-10.5%	75.2%		
Audit/Legal/Consulting Services	$20,000	$45,000	25,000	-	5.3%		
Quotes & Data Feeds	$20,800	$35,000	14,200	68.3%	4.1%		
Research Services	$0	$0	-	0.0%	0.0%		
Analytics	$11,200	$27,000	15,800	141.1%	3.2%		
Communications	$1,480	$1,480	-	-	0.2%		
Information Technology	$208,500	$72,580	(135,920)	-	8.5%		
Office Equipment & Supplies	$500	$500	-	0.0%	0.1%		
Training & Travel Expenses	$38,350	$29,750	(8,600)	-22.4%	3.5%		
Total	$1,017,279	$852,860	(164,419)	-16.2%	100.0%	N/A	N/A

Variances are as follows:

The decline in personnel expense reflects the removal of two existing positions in 2004 offset by cost of living/merit eligibility of existing employees.

The increase in the consulting services category reflects program enhancements in 2005 for special projects.

The increase in the quotes & data feeds category reflects a reclassification of Factset access from the analytics category.

The increase in the analytics category reflects the transfer of a Barra license from the International budget.

Information technology decreased due to a decrease in maintenance and the implementation of several reporting tools.

The decrease in training & travel expenses reflects reduced travel in 2005.

Fund Services

Initiatives

Improve Operations Management

The Fund Services Group (FSG) will continue to develop processes and implement organizational changes to improve Operations Management. In doing so, FSG will work to meet OPERS' and the industry's dynamic operations management requirements. Using existing staffing, a primary objective for improving operations management continues to be to the extent possible, given adequate resources. The goal is to move administrative functions from the individual asset classes to either internal or external operation groups and effectively execute and manage these functions. This, in turn, will allow the investment professionals to focus strictly on investing.

Enhance Reporting Capabilities

Using internal and external data sources, FSG will develop the processes and procedures to monitor all investment portfolios to ensure internal and external portfolio managers are adhering to guidelines set forth in their respective investment management agreements and to report compliance on an exception basis to management and to the OPERS Board. FSG will work with the necessary resources to develop plan specific reporting.

Implement Cost-Effective Technology to Improve Productivity and Reduce Operational Risk

Acting as the primary liasion between IT and the asset classes, FSG will continue to integrate technology improvements to increase productivity and reduce operational risk. Certain specific initiatives during the year will include (1) completing the automation of data transmission of external investment manager activity in order to improve management oversight; (2) implementing of a system upgrade to enhance the performance of the OMS for internal equity trading; and (3) working with the Investment Operations Group to implement Phase I of the Investment Repository in order to reduce operational risk and enhance transparency across investment asset classes.

Support Information Sharing Through Enhanced Investment Intranet Functionality

FSG will continue to foster information sharing between asset classes and operational groups through the Investment Intranet. Additionally, FSG will work with OPERS Communication Department to disseminate investment information via the OPERS iNet and the OPERS external website.

Strategy

The Defined Contribution Plans are expected to offer investment options to members of the OPERS Member-Directed Plan and the OPERS Combined Plan (DC Plans) that cover the risk/return spectrum, exceed the risk-adjusted net returns of their benchmarks, utilize institutional pricing, and offer members meaningful, independent control of their assets.

Investment Structure and Performance Benchmarks

The following table illustrates the assets, fees, and benchmarks of each OPERS Investment Option.

OPERS Investment Options	Assets ($million) 9/30/04	Distribution of Assets	Fees (bps)	Benchmark Index	Benchmark Peers
Stable Value	$3.7	6%	18	Custom Stable Value	Callan Stable Value DB
Bond	$3.1	5%	19	Lehman Brothers Universal	Callan Core Bond Mutual Funds
Stock Index	$6.5	10%	3	Russell 3000	Callan Core Equity Mutual Funds
Large Cap	$5.0	7%	33	Russell 1000	Callan Large Cap Broad Mutual Funds
Small Cap	$3.9	6%	41	Russell 2000	Callan Small Cap Broad Mutual Funds
Non-US	$2.3	3%	60	MSCI ACWI xUS	Callan Non-US Equity Mutual Funds
Conservative	$4.9	7%	21	Custom (1)	Callan Domestic Balanced Mutual Funds
Moderate	$21.8	32%	23	Custom (2)	Callan Domestic Balanced Mutual Funds
Aggressive	$16.9	24%	26	Custom (3)	Callan Domestic Balanced Mutual Funds
Total	$67.1	100%			

(1) Conservative Benchmark: 35% Custom Stable Value Index, 35% LB Universal, 12% Russell 3000, 10% Russell 1000, 3% Russell 2000, 5% MSCI ACWI xUS.

(2) Moderate Benchmark: 20% Custom Stable Value Index, 20% LB Universal, 25% Russell 3000, 20% Russell 1000, 5% Russell 2000, 10% MSCI ACWI xUS.

(3) Aggressive Benchmark: 10% Custom Stable Value Index, 10% LB Universal, 30% Russell 3000, 25% Russell 1000, 10% Russell 2000, 15% MSCI ACWI xUS.

The following table shows the asset allocation targets and ranges and the underlying investment manager fees for each Investment Option. The allocations are rebalanced monthly, if outside their range.

OPERS Investment Options	Target Mix	Range	Underlying Investment Manager (UIM)	UIM Fees (bps)
Stable Value	100%	None	Invesco Stable Value Trust	18
Bond	50%	+/- 5%	Fidelity Broad Market Duration CA	20
	50%	+/- 5%	Smith Breeden SA	17
Stock Index	100%	None	BGI Russell 3000 CA	3
Large Cap	37%	+/- 5%	GMO US Core MF	48
	57%	+/- 5%	Wellington LC Research SA	26
	6%	+/- 4%	BGI R1000 Index CA	10
Small Cap	47%	+/- 5%	Capital Guardian US Small Cap SA	35
	47%	+/- 5%	Invesco Structured Small Cap SA	50
	6%	+/- 4%	BGI R2000 Index CA	10
Non-US	57%	+/- 5%	Capital Guardian ACWI xUS SA	37
	37%	+/- 5%	Goldman Sachs CORE Int'l Equity MF	101
	6%	+/- 4%	BGI EAFE CA	20
Conservative	35%	+/- 4%	OPERS Stable Value Fund	18
	35%	+/- 4%	OPERS Bond Fund	19
	12%	+/- 2%	OPERS Stock Index Fund	3
	10%	+/- 3%	OPERS Large Cap Fund	33
	3%	+/- 1%	OPERS Small Cap Fund	41
	5%	+/- 1%	OPERS Non-US Stock Fund	60
Moderate Pre-Mix	20%	+/- 2%	OPERS Stable Value Fund	18
	20%	+/- 2%	OPERS Bond Fund	19
	25%	+/- 4%	OPERS Stock Index Fund	3
	20%	+/- 3%	OPERS Large Cap Fund	33
	5%	+/- 1%	OPERS Small Cap Fund	41
	10%	+/- 1%	OPERS Non-US Stock Fund	60
Aggressive Pre-Mix	10%	+/- 1%	OPERS Stable Value Fund	18
	10%	+/- 1%	OPERS Bond Fund	19
	30%	+/- 5%	OPERS Stock Index Fund	3
	25%	+/- 4%	OPERS Large Cap Fund	33
	10%	+/- 3%	OPERS Small Cap Fund	41
	15%	+/- 3%	OPERS Non-US Stock Fund	60

2005 Responsibilities

Investment Oversight

The OPERS Investments Division will fulfill all duties assigned to it by the DC Plans Statement of Objectives and Policies. The DC Plans will hire an independent consultant, Callan, to provide quarterly reporting to OPERS trustees. The DC Plans may access the resources of the OPERS Retained Investment Consultant, Ennis Knupp and Associates, for additional support and resources. Changes to the investment structure will be coordinated with the Defined Contribution Department and the investment consultants..

Portfolio Optimization

The OPERS Investment Division will be responsible for adding and removing the underlying investment managers of the OPERS funds, to optimize their expected risk-adjusted returns relative to their benchmarks.

Due Diligence Visits

In addition to monitoring the performance of investment managers and investment options as outlined above, the OPERS Investment Division will be responsible for conducting due diligence visits with the DC Plans' investment managers in the program.

Rebalancing Investment Options

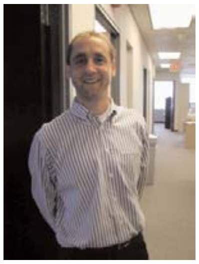
In conjunction with the Master Record Keeper, the Custodian, and the DC Record Keeper, the Investment Accounting Division will be responsible for all investment option policy rebalancing. The policies for rebalancing are outlined in the DC Plan's Statement of Objectives and Policies and will be monitored by the OPERS Investment Division.

Education and Administration

The OPERS Investment Division will support the education and administration efforts of the Defined Contribution Department, as described in the DC Plans Statement of Objectives and Policies.

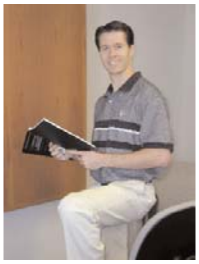
Investment Staffing

Investment Administration

	Name	*Title*	*Experience*
	Hire Date	*Education*	*Designations*
	Neil V. Toth	Director - Investments	14 yrs
	Dec-90	1983: B.B.A., Kent State University 1984: MSIA, Purdue University	1985 CPA 1994 CFA Charterholder
	Roger Fox	Investment Manager - Member Directed	13 yrs
	Jul-00	1989: B.S., Purdue University	2001 CFA Charterholder ASA
	Jerry May	Securities Lending Officer	13 yrs
	Feb-04	1991: B.B.A., Abilene Christian University 2002: M.B.A., Ashland University	 CFA Level I Complete

Appendix

Domestic Equity

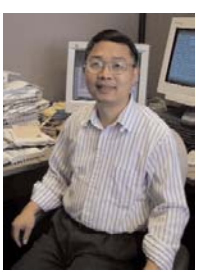
	Name / Hire Date	Title / Education	Experience / Designations
	James Wright Apr-02	AIO - Domestic Equity 1966: B.S., Wayne University 1970: M.B.A., Wayne University	36 yrs
	Daniel J. Sarver Jun-84	Admin/Portfolio Manager 1982: B.S.B.A., Marietta College 1984: M.B.A., Ohio State University	20 yrs 1988 CFA Charterholder
	Susan P. Sommerfeld Nov-84	Index Manager 1979: B.S., Ohio State University 1987: M.B.A., Capital University	24 yrs 1991 CFA Charterholder
	Timothy C. Steitz Jul-90	Sector Manager 1981: B.A., Kent State University 1984: M.B.A., University of Akron	17 yrs 1989 CFA Charterholder
	Erick D. Weis Jun-94	Portfolio Manager 1990: B.B.A., University of Toledo 1994: M.B.A., Ohio State University	12 yrs 2001 CFA Charterholder

Domestic Equity

	Name Hire Date	Title Education	Experience Designations
	Timothy J. Swingle Aug-98	Senior Equity Analyst 1980: B.S.B.A., Ohio State University	6 yrs 1983 CPA 1988 CMA 1995 CFA Charterholder
	Robert G. Ball Aug-99	Sector Manager 1979: B.S.B.A., Miami University	21 yrs 1989 CPA 1991 CFA Charterholder
	Steven F. Barker Jun-99	Equity Analyst 1993: B.S.B.A., Ohio State University 1999: M.B.A., Ohio State University	5 yrs CFA Level I Complete
	John D. Draves Jun-99	Senior Equity Analyst 1988: B.S., University of Minnesota 1990: M.S., Pennsylvania State University 1999: M.B.A., Ohio State University	5 yrs 2002 CFA Charterholder
	Christopher Gregson Jul-00	Equity Analyst 1992: B.A., Indiana University 1993: B.S., Indiana University	4 yrs 2000 CFA Charterholder

Appendix

Domestic Equity

	Name *Hire Date*	*Title* *Education*	*Experience* *Designations*
	Jana Harris Jun-98	Senior Equity Analyst 1998: B.A., College of Wooster 2003: M.B.A., Ohio State University	6 yrs
	Andrew Q. Lohof Jun-98	Equity Analyst 1990: B.S., Georgetown University 1998: M.B.A., Indiana University	6 yrs 2001 CFA Charterholder
	Lewis Tracy Aug-00	Equity Analyst 1980: B.A., U.C. Berkeley 1994: PhD., Ohio State University 2000: M.B.A., Ohio State University	4 yrs CFA Level I Complete
	JG Lee Jan-02	Director of Quantitative Research 1996: PhD., Ohio State University	8 yrs 2001 CFA Charterholder 2004 Financial Risk Mngr 2004 Professional Risk Mngr CAIA Level I Complete
	Xinyang Gu Oct-00	Quantitative Analyst 1982: B.S., Nanjing Inst.of Tech. China 1989: M.S., Ohio State University	4 yrs

Domestic Equity

	Name / Hire Date	Title / Education	Experience / Designations
	Roger Tong Mar-04	Quantitative Analyst 1991: M.S., New Jersey Inst of Tech 1994: M.B.A., The College of Insurance	10 yrs CFA Level I Complete
	Joan Stack Oct-03	Trading Manager 1974: B.S., Mount Holyoke College 1977: M.B.A., Fordham University	29 yrs
	Melissa H. Shoaf Jun-74	Senior Trader	27 yrs
	Christy Ruoff Jul-82	Equity Trader	22 yrs

Appendix

Global Bonds

	Name *Hire Date*	*Title* *Education*	*Experience* *Designations*
	Jennifer Hom Jun-02	AIO - Global Bonds 1975: B.S., College of the Holy Spirit 1980: M.S., Purdue University	26 yrs 1986 CFA Charterholder
	John C. Blue Oct-93	Portfolio Manager 1989: B.S.B.A., Ohio State University 1993: M.B.A., Ohio State University	11 yrs 1997 CFA Charterholder
	David Magan Sep-01	Senior Investment Analyst 1988: B.B.A., University of Kentucky 1991: M.B.A., Xavier University	8 yrs 1997 CFA Charterholder
	Eric France Jan-04	Portfolio Manager 1968: B.A., Yale University 1977: M.A., Ohio University 1985: M.A., Ohio State University	19 yrs 1989 CFA Charterholder
	Todd Soots May-02	Investment Analyst 1995: B.S., Ohio State University 2002: M.B.A., Ohio State University	3 yrs CFA Level II Complete

Global Bonds

	Name / *Hire Date*	*Title* / *Education*	*Experience* / *Designations*
	Mark Ehresman Jun-02	Investment Analyst 1997: B.S., Miami University 2002: M.B.A., Case Western Reserve	3 yrs CFA Level II Complete
	Tony Enderle Jan-02	Investment Analyst 1994: B.S.B.A., Bowling Green State	3 yrs 2002 CFA Charterholder

Appendix

International Equity

Name	*Title*	*Experience*
Hire Date	*Education*	*Designations*
DeAnne B. Rau	Portfolio Manager	10 yrs
Jun-01	1993: B.A., Mt. Holyoke College 1994: B.A., Ohio State University	

Real Estate

	Name / *Hire Date*	*Title* / *Education*	*Experience* / *Designations*
	Mary Beth Shanahan Apr-89	AIO- Real Estate 1979: B.S.S.W., Ohio State University 1985: M.B.A., Ohio State University	16 yrs
	Stephen Stuckwisch Oct-95	Portfolio Manager 1986: B.A., Hanover College 1991: M.B.A., Ohio State University	9 yrs 2000 CFA Charterholder
	Bradley E. Sturm Feb-88	Investment Manager 1979: B.A., University of Cincinnati 1982: M.A., University of Cincinnati 1982: MAIR, University of Cincinnati 1993: M.B.A., Ohio State University	11 yrs
	Heather Christopher Jun-93	Portfolio Manager 1993: B.S.B.A, Ohio State University 1999: M.B.A., Ohio State University	9 yrs CFA Level I Complete
	Kevin Martin Jun-98	Senior Investment Analyst 1994: B.A., Thomas More College 1998: M.B.A., University of Cincinnati	6 yrs 1999 CPA

Real Estate

	Name / Hire Date	Title / Education	Experience / Designations
	Nancy Turner Jul-93	Senior Investment Analyst 1993: B.S.B.A, Ohio State University	8 yrs 1997 CPA 2003 CFA Charterholder
	Kenneth McDowell Sep-99	Senior Investment Analyst 1984: B.A., Ohio State University 1990: B.S.B.A., Ohio State University	5 yrs 1996 CPA CFA Level I Complete
	Christopher J. Ellis May-96	Investment Analyst 1996: B.S.B.A., Ohio State University	6 yrs 1999 CPA CFA Level I Complete

Private Equity

	Name / Hire Date	Title / Education	Experience / Designations
	Greg Uebele Aug-01	AIO - Private Equity 1988: B.S., Florida Inst of Technology 1993: M.B.A., University of Houston	10 yrs 1999 CFA Charterholder
	John Greenwood Sep-02	Senior Investment Analyst 1980: A.D., Oxford Brookes University 1992: M.Sc., Brunel University	10 yrs
	Steve Price Apr-00	Investment Analyst 1996: B.S., Franklin University 1999: M.B.A., University of Dayton	9 yrs NASD Series 7 & 63

Fund Services

	Name Hire Date	Title Education	Experience Designations
	Pat Edgington Jul-00	Fund Services Manager 1985: B.S., Miami University	20 yrs
	Robert Carrier May-00	Investment Analyst 1996: B.S.B.A, Ohio State University 2000: M.B.A., Capital University	5 yrs
	Teresa Black Nov-00	Operations Supervisor 1995: B.S., Ohio State University	9 yrs CFA Level I Complete
	Kimberly Van Gundy Apr-99	Senior Financial Projects Analyst 1993: B.S., University of Dayton 2001: M.B.A., Franklin University	3 yrs
	Vivek Saxena Jul-02	Investments Information Mgmt Analyst 1987: B.S., IIT-India 2000: M.B.A., Oklahoma State University 2002: M.S. - MIS, University of Arizona	6 yrs

MACROECONOMIC ADVISERS'
U.S. ECONOMIC PROSPECTS
OCTOBER 2004

THE OUTLOOK IN BRIEF

- **The pace of economic growth quickened in the third quarter to over 4%, according to our estimates, from 3.3% in the second quarter.**[1] While a continuing surge in oil prices would threaten to weaken growth, we expect the recent run-up in oil prices to soon abate and then reverse. After another brief slowing in growth to near 3½% in the fourth quarter we expect the U.S. economy to grow near 4% next year before slowing to 3½% in 2006.

- **From just $32.51 per barrel on December 31 of last year, oil prices have recently rocketed to near $55, breaking records along the way.** The run-up in oil prices has been a significant factor restraining growth. The unanticipated rise in oil prices over the past year has trimmed nearly three-quarters of a percentage point from GDP growth this year. However, we believe that oil prices are near their peak, and we expect a gradual decline to reverse the earlier drag on the growth.

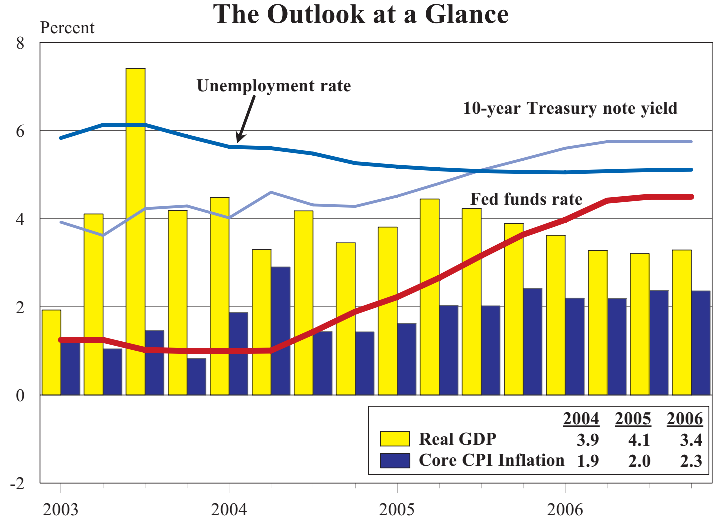
- **Following a jump earlier this year, core inflation has subsided, as had been expected.** We project core inflation to remain below 2% in the near-term before rising again next year. An expected reversal of the recent spike in energy prices will contribute to a decline in overall inflation later this year and next year.

- **The Federal Reserve is likely to raise the federal funds rate once more this year, to 2%, and continue to raise it at a "measured pace" through next year.** Motivating the rate hikes are solid economic growth at trend or above, the recent firming in core inflation, and the still quite low level of interest rates. With core CPI inflation near 2%, the current federal funds rate of 1.75% implies a negative real fed funds rate.

THE OUTLOOK IN FULL

After a brief late-Spring slowing in growth, during which GDP growth slumped to a still respectable 3.3%, the economy accelerated during the third quarter to grow in excess of 4%. Contributing importantly to the third-quarter acceleration was a sharp rise in the growth of consumer spending. Personal consumption expenditures (PCE) grew at only a 1.6% rate in the second quarter, but rebounded sharply in the third quarter, rising at a 4.4% rate. Key to the strengthening was a jump in light vehicle sales from 16.5 million to 17 million units. Importantly, this suggests that the support to the expansion from consumer spending remains intact, allaying fears that the slower second-quarter growth was a prelude to continued weakness. In addition to solid, if more moderate, growth of PCE going forward, business investment is expected to significantly outperform other components of spending. For example, business spending on computers and software grew nearly 19% in the four quarters ending in the second quarter, and is projected to rise at over a 16% rate in the second half of this year, slowing only slightly next year. Residential construction, thanks to the boost to housing demand from still low mortgage rates, has been an important contributor to growth, but it is expected to weaken as an eventual rise in mortgage rates lets some wind

The Outlook at a Glance



Source: Bureau of Economic Analysis, Macroeconomic Advisers, LLC; Forecast prepared on Oct. 1, 2004

[1] Unless otherwise noted, all quarterly growth rates are expressed as compound annual rates, all components of GDP refer to chained 2000 dollar magnitudes, and all yearly growth rates are stated as fourth-quarter over fourth-quarter.

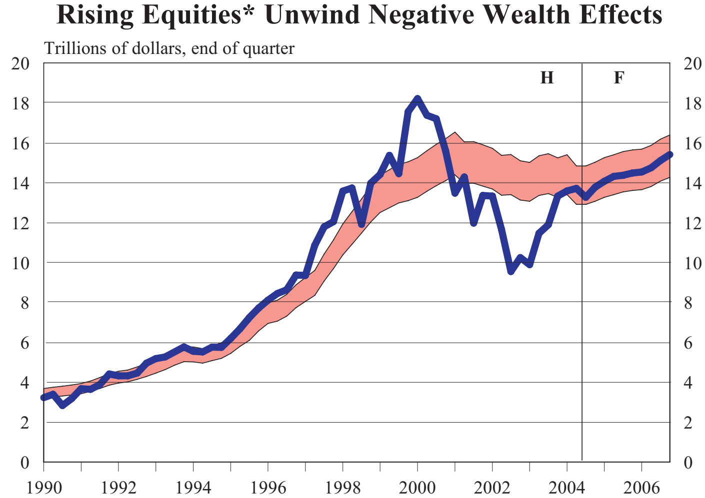
	History											
	2004.1	2004.2	2004.3	2004.4	2005.1	2005.2	2005.3	2005.4	2006.1	2004	2005	2006
Real GDP & Components			% change annual rate							q4/q4		
GDP	4.5	3.3	4.2	3.5	3.8	4.4	4.2	3.9	3.6	3.9	4.1	3.4
Personal Consumption Expenditures	4.1	1.6	4.4	2.6	3.2	3.6	3.4	3.5	3.3	3.2	3.5	3.3
Business Fixed Investment	4.2	12.5	13.4	5.7	11.4	12.4	10.3	9.0	7.9	8.8	10.8	6.5
Real Activity			quarterly averages, unless noted							annual avg.		
Private Housing Starts (thous units)	1943	1920	1986	1903	1877	1830	1785	1726	1657	1938	1805	1598
Light Vehicle Sales (mil units)	16.5	16.5	17.0	16.8	16.8	16.8	16.8	16.8	16.7	16.7	16.8	16.6
Industrial Production (% ch, a.r.)	6.6	4.8	3.7	5.1	5.9	6.7	7.4	6.6	5.9	5.1	6.7	5.1
Manuf. Capacity Util. (%)	75.1	76.1	76.8	77.6	78.2	79.1	80.1	80.9	81.4	76.4	79.6	81.6
Unemployment Rate (%)	5.6	5.6	5.5	5.3	5.2	5.1	5.1	5.1	5.1	5.5	5.1	5.1
Prices, Productivity, & Costs			% change annual rate, unless noted							q4/q4		
CPI (all urban)	3.6	4.7	1.8	2.0	1.6	1.3	1.4	1.6	1.6	3.0	1.5	1.7
PPI (finished goods)	3.9	6.3	0.7	2.8	0.7	-0.4	-0.8	-0.6	-0.6	3.4	-0.3	-0.3
Compensation Per Hour	2.0	3.3	2.5	4.1	4.2	4.1	4.0	4.0	4.2	3.0	4.1	4.1
Output Per Hour	3.7	3.2	1.2	1.3	2.6	3.2	3.1	2.9	2.8	2.3	3.0	2.6
Price of Imported Oil ($/barrel)	31.1	33.9	38.0	43.0	42.0	40.0	38.0	36.0	34.0	36.5	39.0	32.8
Selected Interest Rates			quarterly average (%)							annual avg		
Federal Funds Rate	1.00	1.01	1.43	1.89	2.22	2.66	3.16	3.64	3.97	1.33	2.92	4.34
10-Year Treasury Bond Yield	4.02	4.60	4.31	4.28	4.51	4.80	5.10	5.35	5.60	4.30	4.94	5.71
Aaa Corporate Bond Yield	5.46	5.93	5.65	5.55	5.71	5.89	6.19	6.44	6.69	5.65	6.06	6.80
Incomes & Related Measures			% change annual rate, unless noted							q4/q4		
Corporate Profits	13.6	2.5	2.7	14.7	1.4	6.6	5.0	5.1	5.6	8.2	4.5	4.7
HH Net Worth, Equities (qrtrly rate)	1.9	0.9	-3.2	3.8	2.1	1.8	0.4	0.8	0.4	3.3	5.2	6.4
Federal Surplus (FY, Uni, bils $)	-683	-103	-388	-417	-418	-66	-357	-408	-437	-423	-314	-337

Source: Macroeconomic Advisers, LLC

from housing's currently full sails. Recent significant declines in the dollar exchange rate should help to stem the decline in net exports by helping to divert domestic demand away from imports and improving the competitive position of U.S. exports. All in all, we expect the U.S. economy to grow at near a 3¾% rate in the second half of this year and near 4% next year, before slowing to roughly 3½% in 2006.

Growth this solid will be enough to generate employment gains in the neighborhood of 200 thousand per month for the next year or so and push the unemployment rate down to 5.1% by the middle of next year, where it is expected to remain through the end of 2006. A modest cyclical rise in the labor force participation rate is expected to encourage labor force growth of roughly 1.4% next year, helping to stabilize the unemployment rate despite solid growth of employment. With the unemployment rate a couple tenths of a percentage point below the level we estimate to be consistent with stable inflation, there is some slight upward pressure on core inflation in 2005 and 2006 in this forecast. After rising 1.5% in 2003, the core CPI is projected to rise 1.7% this year and 1.8% and 2.2% in 2005 and 2006, respectively.

Rising Equities* Unwind Negative Wealth Effects

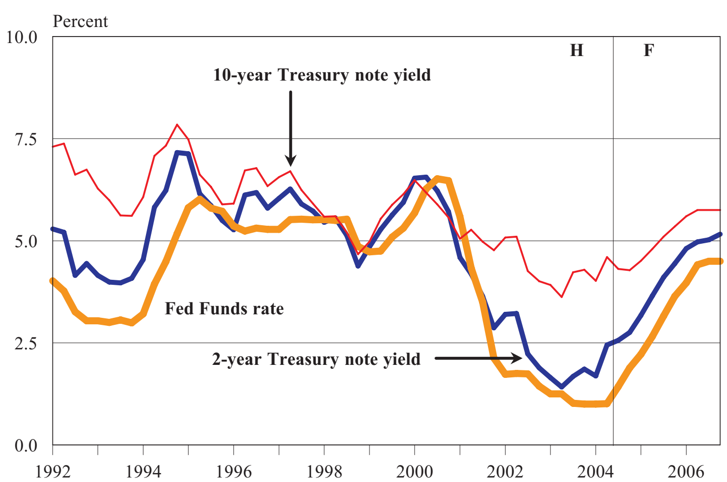


*** Household net worth in the form of equities**
Source: Flow of Funds Accounts; Macroeconomic Advisers, LLC; Forecast prepared on Oct. 1, 2004

Solid growth and modestly firming inflation will provide a good foundation for moderate growth of corporate profits. Corporate profits, as reported in the National Income and Product Accounts, are adjusted for inventory revaluations to exclude the effects of price changes and for differences in historic and replacement cost of capital when calculating depreciation expenses. On this basis, we expect corporate profits to rise 4% – 5% over each of the next two years. This is considerably slower than the 23.5% growth in 2003 and roughly 8% growth we expect in 2004. Corporate dividends are expected to roughly match the growth of profits over the next couple of years. With only modest gains in dividends and rising interest rates in prospect, the next couple of years will be challenging ones for equities, but we expect increases in broad equity prices of 5% – 7% over each of the next two years.

With solid, above-trend growth expected through the end of next year, modest firming in core inflation in prospect, and a low initial level of both short and long-term interest rates, we see good reason to take the Fed at its word with respect to the near-term prospects for Fed policy. Monetary policy remains quite accommodative — the real federal funds rate calculated as the difference of the nominal rate (1.75%) and recent readings on core CPI inflation (2%) is still slightly negative. A neutral level for the federal funds rate, i.e. one that would be expected to be consistent with trend growth and stable inflation, is in the range of 3¾% to 4½%; the difference between the neutral level and current level of the federal funds rate is another measure of how accommodative the current rate is. The Fed has indicated through official statements and speeches from Fed officials that it intends to remove this accommodation at a "measured pace." Already this year we have seen three quarter-point increases in the Fed funds target rate, and we expect another quarter-point hike at the Fed's November policy meeting. We expect further increases next year to take the federal funds rate to 3¾% by the end of the year, with the best bet being a series (seven to be precise) of quarter-point increases spread over the year. Futures prices on euro-dollar deposits are currently suggesting that investors are expecting a lower year-end 2005 level of the funds rate, near 3%.

Short- and Long-Term Interest Rates



Source: Federal Reserve Board, Macroeconomic Advisers, LLC; Forecast prepared on Oct. 1, 2004

In light of a fairly sanguine outlook for real economic growth ahead and reasonably explicit statements from the Fed to the effect that it is likely to continue to raise rates from the current quite accommodative level to something approaching a neutral level, the current low level of long-term yields is somewhat puzzling. Yields on 2-year Treasury notes are currently near 2.70%, not far from what we might expect given the futures-market expectations for the fed funds rate, at least through the end of next year. However, yields on the 10-year Treasury note, after rising to 4.80% this spring, plunged to below 4%, before rebounding slightly in recent weeks. These yields are well below what we would expect given the configuration of solid growth, inflation near 2%, and the expectation that the Fed will be pushing the federal funds rate to 4%, or higher, over the next couple of years.

Clearly, the low level of yields reflects some skepticism of forecasts of growth as robust as presented here, and consequently, some uncertainty about just how far and how fast the Fed will raise the federal funds rate. Other factors may also be helping to hold down longer-term yields. Given the large prospective deficits expected under current policies, there is a reasonable chance that some spending restraint and/or tax increases may be forthcoming. While the winner of the upcoming presidential election will have something to say about the composition of any attempts to trim the deficit, both candidates have expressed a strong desire to "cut the deficit in half" over the next several years. A switch toward some budgetary belt tightening would be one reason to expect that interest rates would be lower than would occur under a continuation of the rather "loose" fiscal policy of the past few years. Large purchases of Treasury securities by foreign central banks, notably the Japanese and Chinese, as part of efforts to manage their currency values *vis-à-vis* the dollar may also be playing a role in suppressing Treasury yields.

A perception of greater downside risks may also be weighing on yields. As we discuss below, there are significant risks to the continued vigor of the expansion. If investors believe that the downside risks to growth and interest rates outweigh any upside risks, even if our forecast is a good representation of the *most likely* scenario, yields could be lower than would accompany our forecast with balanced risks. The existence of unbalanced risks, in this case with the preponderance of risks to the downside, could help explain why long-term yields remain depressed and at the same time help to explain the stock market's recent lackluster performance.

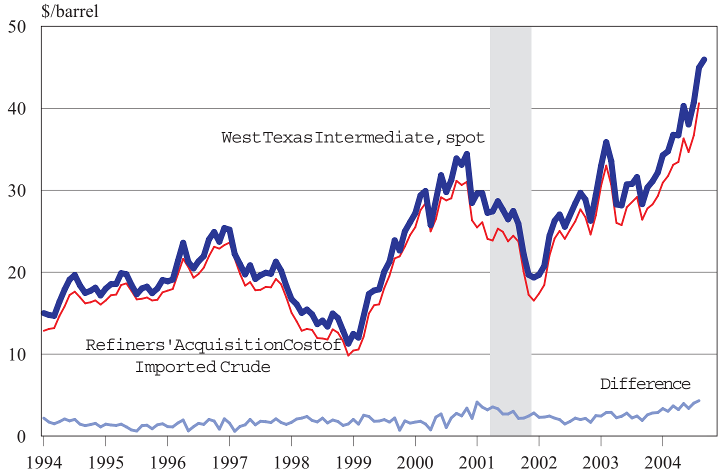
CHALLENGES TO ABOVE-TREND GROWTH

As we have noted frequently over the last couple of years, the economy continues to face significant downside risks. The probability of any one "event" varies from miniscule to marginally significant, but the consequences of the events, especially if in combination, are potentially significant. Among downside risks are another major terrorist attack in the U.S., a continued upward surge in oil prices, a greater-than-expected weakening of interest-sensitive components of GDP as interest rates head higher, a desire by consumers to raise their saving after an extended period over which the personal saving rate declined to historically low levels, a decline in equities as interest rates rise, a hard landing in China as authorities there attempt to moderate growth, and a sharper than-expected upturn in core inflation that might elicit a more aggressive response from the Fed. It is difficult to construct such a list of upside risks, although continued strong growth of labor productivity would be one potentially very significant upside risk. In this section we focus on the impact of the recent upside surprises in oil prices, a "risk" going back a couple of years that has now become "fact."

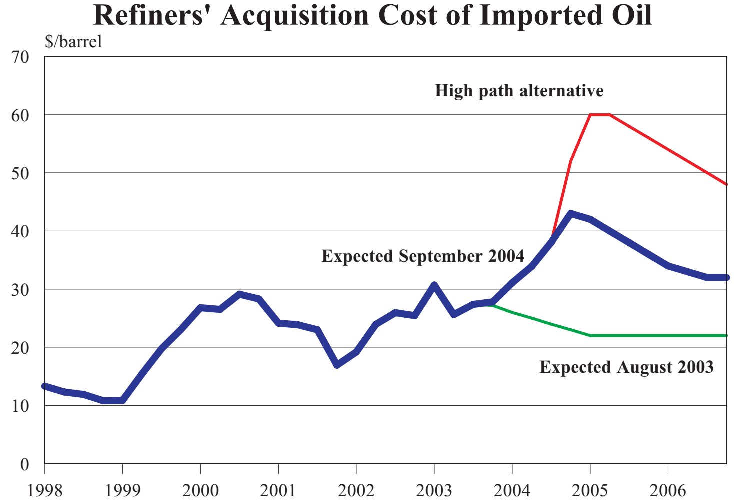
Oil prices have risen sharply over the last year or so. The spot price of West Texas Intermediate (WTI) crude oil increased from an average of $30 per barrel in the fourth quarter of last year to an average of $46 per barrel in September 2004. As of this writing, WTI was trading $54 per barrel, an 80% increase over the last year. In nominal terms, $54 per barrel is a record, but in real terms (i.e., adjusted for the overall price level), it is not. Nevertheless, the increase in oil prices over the last year has been striking.

Surges in oil prices subtract from real GDP growth and add to price inflation. A surge oil prices reallocates income away from consumers of oil toward producers of oil. The U.S. imports roughly two-thirds of the oil it consumes, so surging oil prices result, to a large extent, in a reallocation of income away from the U.S. to oil-producing counties. In this sense, a surge in oil prices acts as a "tax" on U.S. residents and slows the growth of

Crude Oil Price Rise, an Unpleasant Surprise



Alternative Oil Price Paths
Refiners' Acquisition Cost of Imported Oil



domestic "after-tax" income. To the extent that nominal spending on oil and final energy goods (e.g., gasoline and fuel oil) is "financed" by consumers reducing their saving, it need not slow the growth of consumer spending and GDP. However, since the ability to substitute away from more expensive energy goods (or services) is limited in the short-run, a sharp rise in energy prices typically results in reduced spending on other goods and services. Moreover, increases in oil prices are at least in part passed through to consumers as higher prices for all goods and services, reducing real personal income and real wealth. This slows the growth of real consumer spending and real GDP.

This begs a few important questions. How much has the run-up in oil prices over the last year subtracted from real GDP growth and added to inflation? If oil prices continue to surge, how would this affect the outlook for GDP growth and price inflation over the next couple of years? In particular, if oil prices breach $60 per barrel, as some analysts have warned, would this be sufficient to derail the current economic recovery?

To answer these questions, we used our macroeconomic model of the U.S. economy to gauge the effects of two alternative paths for oil prices (See the chart titled "Alternative Oil Price Paths"). The refiners' acquisition cost of imported crude oil moves closely with the price of WTI and recently has been between $4 and $5 below the price of WTI. In the first alternative simulation, we begin the simulation in the third quarter of last year and enter the projection for oil prices that we had anticipated back then … which did not include the surge in oil prices. In this alternative simulation, real GDP growth in 2004 is 4.6%, 0.7 percentage point higher than we currently expect. This suggests that the recent run-up in oil prices, by itself, is likely to shave 0.7 percentage point from GDP growth in 2004. (See the chart titled "Impact of Alternative Oil Paths".) Furthermore, the alternative simulation with lower oil prices shows 0.7 percentage point less of an increase in the PCE price index than we currently expect, suggesting that the run-up in oil price is likely to boost PCE price inflation by this amount in 2004.

The second alternative simulation shows the refiners' acquisition cost of imported crude oil reaching $60 per barrel, implying roughly $65 per barrel for WTI, before drifting lower through the balance of the short-term forecast. In this alternative simulation, real GDP growth in 2005 is 3.4%, 0.7 percentage point below our current forecast, and PCE price inflation is 2.1%, 0.8 percentage point above our current forecast. The effects in 2006 are similar. This exercise suggests that, while a continued increase in oil prices could have a noticeable impact on real GDP growth and inflation, it would not, by itself, be sufficient to send the economy back into recession. It would take a coincidence of negative shocks, not just a surge in oil prices, to put the recovery at risk.

Impact of Alternative Oil Paths