

# INVESTMENT ADVISORY COMMITTEE MEETING

March 7, 2013

STATE OF MICHIGAN RETIREMENT SYSTEMS  
QUARTERLY INVESTMENT REVIEW



**Andy Dillon, State Treasurer**

Prepared by Bureau of Investments  
Michigan Department of Treasury

# INVESTMENT ADVISORY COMMITTEE MEETING

March 7, 2013

## Agenda



- 9:30 a.m. Call to Order and Opening Remarks
- 9:40 a.m. Approval of Minutes of 12/6/12, IAC Meeting
- 9:45 a.m. Executive Summary & Performance for Periods Ending 12/31/12
- 10:00 a.m. Current Asset Allocation Review
- Capital Markets Overview – *File*
- Economic and Market Review and Outlook – *File*
- 10:10 a.m. Round Table Discussion
- 10:20 a.m. Blackstone Presentation – *Steve Schwarzman, Chairman, CEO and Co-Founder of Blackstone*
- 10:50 a.m. Review of Investment Reports
- Equity Review:
    - Alternative Investments
  - Absolute and Real Return/Opportunistic – *File*
  - Fixed Income – *File*
  - Real Estate & Infrastructure – *File*
  - Domestic Equity – *File*
  - International Equity – *File*
- Basket Clause – *File*
- 11:30 a.m. Adjournment

### 2013 Meeting Schedule

Thursday, June 6, 2013  
Thursday, September 5, 2013  
Tuesday, December 3, 2013

All meetings start at 9:30 a.m.

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**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**MINUTES**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**MARCH 7, 2013**



**Jon M. Braeutigam  
Chief Investment Officer  
Bureau of Investments**



## **INVESTMENT ADVISORY COMMITTEE**

The Investment Advisory Committee (IAC) held its quarterly meeting on Thursday, December 6, 2012, at the Bureau of Investments, Great Lakes Conference Room, 2501 Coolidge Road, Suite 400, East Lansing, Michigan.

Members Present:

Nick A. Khouri, Chairman  
L. Erik Lundburg  
Allan R. Pohl, LARA  
Phillip J. Stoddard, DTMB

In attendance from the Department of Treasury: State Treasurer Andy Dillon, Jon M. Braeutigam, Gregory J. Parker, Robert L. Brackenburg, Karen Stout, Brian Liikala, Richard Holcomb, Peter Woodford, Jack Behar, Jim Elkins, Rick DiBartolomeo, Ed Mikolay, Marge McPhee, and Emma Khavari.

Others in attendance: Jim Voytko, Molly Jason, Cara Dobie, and June Morse.

### **Call to Order**

Chairman Khouri called the December 6, 2012, Investment Advisory Committee meeting to order at 9:35 a.m. He thanked everyone for taking time from their busy schedules to attend the December Investment Advisory Committee meeting.

### **Approval of Minutes of September 6, 2012**

Chairman Khouri asked for a motion to approve the minutes of the September 6, 2012, Investment Advisory Committee meeting. Mr. Stoddard so moved, Mr. Allan Pohl seconded; there were no objections.

### **Opening Remarks**

Chairman Khouri explained that at the last two meetings the discussion was at a higher, broader level, concentrating more on asset allocation overall and then the second meeting focused on the match between assets and liabilities, and funding ratios under different scenarios. During this meeting, after the performance review, the objective will be to dig down another layer and discuss the asset class of equities concentrating on what is trying to be achieved, what has been achieved, and what is going to happen going forward. During the next few meetings more asset classes will be discussed with these ideas in mind. Chairman Khouri turned the meeting over to Treasurer Dillon.

Treasurer Dillon complimented the Bureau of Investments Team on the great work done during the fiscal year which ended September 30, 2012. Chairman Khouri also

complimented the staff on the revisions done in the Investment Advisory Committee book. He then turned the meeting over to Mr. Jon Braeutigam.

### **Executive Summary Introduction**

Mr. Jon Braeutigam noted that today Mr. Greg Parker is going to discuss the Executive Summary, Mr. Jack Behar will then discuss U.S. equities and how they are viewed today. Mr. Braeutigam gave a brief historical perspective (since the mid-1920s), noting that equities have returned 9.8% during the time which covers the Depression, WWII, the Cuban Missile Crisis, and high inflation. He stated that looking at the stock market on a daily basis, about 50% of the days are up and 50% of the days are down, which is the reason it is almost impossible to time the markets. Looking at the stock market on a rolling monthly basis, since the 1920s, about 60% of the months were up and about 40% of the months were down. Then looking at the years, about 70% of the years were up and 30% of the years were down which makes it very difficult to project yearly returns. Mr. Braeutigam also looked at the rolling five years where 13% to 14% of those years were negative; and looking at the ten-year period, about 6% of those time periods were negative. The longer the time periods, the less percentage are negative. Average returns on the stock market on a yearly basis are not the normal 8%; about 37% of the years are 20% or greater; another 35% are between zero and 20% returns; then about 30% are negative returns on a yearly basis. There are times when the SMRS fund will experience negative returns, with the much greater likelihood the returns will be positive. If time allows, Mr. Richard Holcomb will discuss International equities. At the next meeting Mr. Peter Woodford will discuss Alternative investments (private equity). Mr. Braeutigam asked Mr. Parker to begin with the Executive Summary.

### **Executive Summary**

Mr. Greg Parker began his presentation reviewing the performance of the MPSERS fund which had a good one-year annualized return of 13.5%; the five-year was 1.6% which included a lot of the financial crises. Over the longer period, the ten-year return was nearly 8%; however, trailing the policy and against the peers as well. He noted the competitive returns over long periods; however, the Plans struggled against peers over the one year. The greatest reasons for the struggle against peers and policy over the past 12 months has been the returns and the allocation to private equity. Private equity derives valuations from the public markets. He noted that the performance for this period actually reflects more June-like valuations. The last quarter the stock market was up approximately 6%, which is a pretty strong return for the quarter. So, it is natural that in the private equity markets, the valuations just were not reflected when this was reported. It is expected, in short periods with strong equity markets the Plans will lag; and in periods of very weak equity markets the Plans will outperform. He noted that the private equity allocation over very long periods of time has been beneficial to the overall plan.

Chairman Khouri asked for a discussion on how to tell if the returns indicated the fund had a good year or not a good year. Mr. Braeutigam indicated that it is measured

versus peers. He indicated that the SMRS plan is about average compared to other plans and many plans are funded like the SMRS plan. He indicated that a one-year time period is not a good indication of how a plan is doing, but using a three and five-year return compared to peers is a much better indication of how a plan is doing. Another consideration is the risk that is being taken. Being in the top quartile is not the best if the risk is too high. Mr. Braeutigam indicated his plan is for continuity of strategies and very little shifting, and to hold the ship steady over the next ten to twenty years. He discussed the consequences of shifting strategies which will put the fund in a position to underperform and that will cost the retirees money and the fund money over time.

Mr. Parker discussed and explained the asset allocation chart. He noted that some asset classes are producing cash while some asset classes are using cash. He explained that over the past twelve months the Plans sold \$3.3 billion of U.S. equity, which funded the \$3.1 billion used for net benefit payments. Mr. Parker explained where cash was added to asset classes. Many comments were made and questions asked regarding cash and the different asset classes that make up the fund. He discussed the outstanding commitments of approximately \$6.1 billion in illiquid asset classes, primarily Private Equity, but this also includes Real Estate Infrastructure, and some in the Short-Term Fixed Income, Absolute and Real Return Division. He noted it is important to manage liquidity and added that five years ago there was \$1.7 billion more in outstanding commitments as compared to the present time.

Mr. Parker discussed the earnings on ten-year Treasuries, which is 1.6%, cash is earning approximately 20 basis points. Being invested in long-term fixed income is not going to get the 8% return. This is used as a diversifier, it is there because it produces income. The plan is invested in equities, whether it is public, domestic, international, or private equities to earn the 8% needed. There was much discussion on Japan, their low interest rates and the possible changes coming to their economy.

Mr. Parker turned the focus to the capital markets where domestic stocks have outperformed foreign stocks by 15%, 9.7%, and 5% annually over the past one, three, and five years. Relating the earnings to the current price and looking at developed international stock, they do trade at a discount to U.S. stocks by about 10%. After factoring in the quality of those earnings, the growth of those earnings, and the variability in the stock price, 10% is not a very big discount. He noted that emerging equities traded at a 20% discount to U.S. stocks. So the internal discussion is whether to focus more on emerging equities rather than developed international. There were several ideas discussed regarding this topic.

Mr. Parker concluded his presentation noting that last year there was concern about Europe, when looking at their sovereign interest rates they were escalating, so they had adopted a series of solutions to address their liquidity problems. Now things are looking better. Italy has a ten-year rate today of 4.6%, the lowest it has been in the past two years. He noted that the U.S. GDP is growing at 2%, the current measures of economic improvement; for example, the PMI is around 50. He explained that it is not obvious

whether the economy is contracting or expanding. The labor market is improving; however, there are still 4.7 million fewer people employed today than at the peak in January 2008. At the current rate of adding jobs, it will be mid-2015 before that level is reached, which is 7.5 years from the peak. This is a very long recovery.

Chairman Khouri asked Mr. Jack Behar to discuss domestic equities.

### **Domestic Equity**

Mr. Jack Behar began his presentation discussing his philosophy used for investing in domestic equity. He noted that the emphasis is on long-term investing because he believes making long-term projections is significantly less speculative than trying to predict short-term market moves. He noted an example: if a bond is purchased paying 5% and it is going to mature in five years, and there is a lot of confidence that it is going to pay, then over the next five years 5% will likely be earned. That is less of a speculation, it is a risk-adjusted decision. The key decision is, is this bond going to pay. The same philosophy applies to equities. He noted that it is believed that equities are poised to give a 9.5% return.

Mr. Behar discussed philosophy in terms of active management noting that the reason, it is believed, active management can work is because of behavioral dynamics. People in the markets tend to buy what is working and what is believed is going to work over the next six months. This creates opportunities for investors with a longer-time horizon. He explained the external manager portfolio considerations for hiring and firing involve looking at organizational structure and incentives, how the managers are thinking, and what they hold or own. Then fees are reviewed. There was a lengthy discussion regarding internal funds management versus external management and the difficult environment for active management.

Mr. Behar reviewed the performance of the portfolio. He talked about how to best review and monitor external manager portfolios and to understand exactly what they hold. He discussed internal versus external performance, the impact of external manager fees, and the focus of the portfolio. He noted that the portfolio was restructured from 24 funds within the portfolio down to 16 funds with one of the goals to put more money with favored managers and extract better fees, noting that the average fee on the external manager portfolio dropped from 59 basis points to 55 basis points.

Mr. Behar discussed the macro space noting that the trailing twelve-month PE for the S&P 600 small cap was 21X, the trailing twelve month PE for the S&P 500 was 14X, and the trailing twelve month dividend yield on the S&P 500 was 4% including buybacks – versus 2% in small cap. He noted that if there is another adverse event here in the U.S., large-cap stocks will have less volatility than small-cap stocks. He discussed the efficient frontier volatility chart noting how he is thinking about the different asset classes and different sectors within the market. Mr. Behar looked at the 30-year Treasury, which currently even though it is uncorrelated to equities, has the same volatility as the S&P 500 with a sub 3% return. He estimated that the S&P 500 is giving

9% to 10%, the 30-year Treasury is giving sub 3%. He discussed other attractive areas of the market, which are consumer staples and financials. He noted that staples, utilities, and health care will be less attractive when interest rates go up where financials will do really well when interest rates go up. He also noted that there is roughly the same volatility in the S&P small cap as is in the financials, but a significantly lower return. Mr. Behar has confidence in the internally managed portfolio which is trading for roughly 12.5X of normalized earnings versus the S&P 500 or the S&P 1500 at roughly 14.5X of normalized earnings. The SMRS portfolio has similar or less volatility than the benchmark and the portfolio also has better growth expectations and better earnings per share expectations.

Chairman Khouri noted that at the next Investment Advisory Committee Meeting discussion will be private equity since it is a big part of the portfolio. Take a look at the philosophy, how does it fit in the overall portfolio, how has it managed now, and what challenges and opportunities are noted over the next 12 to 24 months.

**Performance, Asset Allocation, Capital Markets Overview, Economic and Market Review and Outlook, Asset Class Investment Reports, and Basket Clause**

In the spirit of time, these reports were received and filed.

**Next Meeting Date and Adjournment**

The next Investment Advisory Committee Meeting is scheduled for Thursday, March 7, 2013. Chairman Khouri adjourned the meeting at 11:34 a.m.

Approved:

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Nick Khouri, Chairman



**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**EXECUTIVE SUMMARY**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**MARCH 7, 2013**



**Gregory J. Parker, CFA  
Director of Investments – Public Markets  
Director of Asset Allocation  
Bureau of Investments**



## EXECUTIVE SUMMARY

December 31, 2012

### Performance

*Some key performance highlights.*

| <u>MPSERS Plan</u> | <u>1-Year</u> | <u>3-Years</u> | <u>5-Years</u> | <u>7-Years</u> | <u>10-Years</u> |
|--------------------|---------------|----------------|----------------|----------------|-----------------|
| Annualized Returns | 12.6%         | 9.5%           | 2.2%           | 5.2%           | 7.5%            |
| Policy Return      | 15.1%         | 9.8%           | 3.0%           | 5.2%           | 7.7%            |
| Rank vs. Peers     | 84            | 37             | 64             | 56             | 66              |

- For the one and three-year time periods, ending December 2012, the plan beat the 8% actuarial rate of return. The five-year time period includes the effects of the Great Recession.
- Over the past year the plan trailed peers by 90 basis points and underperformed the total plan policy benchmark by 2.5%. This underperformance is explained by the 18.5% underperformance of Private Equity to its custom benchmark over the past year. Real Estate was a minor detractor, while all other asset classes were neutral to a slight positive over the past year. It should be noted that private equity valuations typically lag public markets (which its benchmark is based upon).

### Asset Allocation

*A few minor changes over the past year while managing benefit payouts.*

- The systems paid out \$2.9 billion net of contributions over the past twelve months. This figure represents 6.0% of the December 31, 2011, market value. The plans used \$3.4 billion in proceeds from the sales of Domestic Equity to fund the net payments.
- The plans have outstanding commitments to fund approximately \$5.8 billion in illiquid asset classes, primarily private equity. This figure is about 11.5% of the December 2012 market value and is an additional liquidity consideration. By contrast, the current outstanding commitments are roughly \$1.8 billion lower than five years ago.
- Over the past year the actual allocation to domestic equity decreased by 4.0% and private equity decreased by 1.2%. The U.S. stock market bottomed almost four years ago, and since that time, prices have more than doubled. The \$1.3 billion in distributions from private equity have been redeployed into diversifying strategies such as Absolute Return and Real Return / Opportunistic.
- The allocation to International Equity has increased by 1.7% over the past year, due entirely to asset appreciation. However, over the past year, a number of changes have been made within the asset class. The split between active and passive strategies changed from a roughly 25/75 split to now close to 50/50. Also, the allocation split between developed and emerging has changed from an 80/20 split to 70/30.
- According to State Street peer universe data, the peer median allocation for the Long-Term Fixed Income asset class is 24.2% versus the plan allocation of 13%. With the 10-year U.S. Treasury yielding less than 2% and cash yielding approximately 20 basis points, the lower allocation is justified as it will be difficult to earn the target rate of 8% with a higher allocation to fixed income. Identifying and allocating to higher yielding, fixed-income like strategies is a top priority of 2013, this strategy is market dependent.

## Capital Markets

*Very low interest rates and an eye on equity valuations.*

- Interest rates contracted widely in 2012. The U.S. 10-year Treasury rate fell 0.12%, U.S. investment grade corporate interest rate spreads were down roughly 0.3%, high yield spreads contracted by nearly 2%, and Italian 10-year sovereign rates dropped by 2.6% since the end of last year.
- U.S. Long-Term Fixed Income is priced to return a very low rate of return. At the end of December, the **Barclay's Government/Credit Index had a yield to maturity of only 1.6%**. The plan currently has 13.3% of the assets allocated to this asset class.
- Foreign stocks were strong in 2012 returning 17.4% for the year; 5.9% in the fourth quarter alone. Domestic stocks have out-performed their foreign counterparts by 6.9% and 4.5% annually over the past three and five-year periods respectively; however, they underperformed in 2012 by 1.2%.
- There is virtually no valuation disparity between U.S. and Developed International equities. Excluding non-earners, the trailing Price/Earnings ratio for the U.S. is 13.9 times while the ratio for Developed International equities is 13.6. **Emerging Market equities continue to sell at a discount (15%) to both Developed International and U.S.**
- At the end of September, large cap domestic stocks were broadly priced at a price to trailing operating earnings multiple of 14.1X. Small caps, in contrast, were priced at a multiple of 16.1X, or for a premium of 14%. At that time, the price paid for small cap stocks relative to large caps was close to the highest paid on record, going back to 1983. Despite this fact, small-caps continued to outpace large-caps by 2.3% in the fourth quarter.
- Over the past twenty years, Hedge Funds have returned an annualized rate of return of 5.6% as measured by the HFRI Fund-of-Funds Conservative Index, or approximately 50 basis points less than the Barclay's Government Bond Index. Since 1999, the best year for the asset class was in 2009 when the Index returned 9.7%

## Economic Backdrop

*A hurricane and the fiscal cliff takes a toll.*

- At the end of January, the latest reading of U.S. GDP growth was -0.1%. However, some economists believe that the true health of the economy is much better. At the end of October, hurricane Sandy hit the Eastern seaboard causing an estimated damage of \$63 billion, making **Sandy the second costliest hurricane on record**. In late December and early January 2013, the U.S. Legislature finally addressed the "Fiscal Cliff". The buildup to the December 31 deadline is believed to have slowed the economy due to the uncertainty of the resolution.
- According to the Bureau of Labor Statistics (BLS) payrolls increased by 135,000 on a seasonally adjusted basis. In the meantime, consumers are not necessarily doing better. Wages as a percent of corporate profits is at an all-time low. The unemployment rate is in fact lower than a year ago by 0.4%; however this improvement is largely due to a drop in the workforce participation. According to the BLS, there are **roughly 3.2 million fewer workers today than at the peak five years ago**.
- Annualized after-tax profits and margins hit an all-time high in the fourth quarter of 2011 at over \$1.6 trillion and 10.3% respectively. The most recent quarter's profits are \$68 billion lower.
- The worst of the housing market appears to be in the past and that it will no longer be a drag on GDP growth. New housing starts ended the year at a four-year high, increasing 37% over the year. House values (as measured by the S&P / Case-Shiller Index) increased by 5.5% over the last year.

## **Highlighted Asset Class – Private Equity (PE)**

*A summary*

| <b><u>Alternative (PE) Assets</u></b> | <b><u>1-Year</u></b> | <b><u>3-Years</u></b> | <b><u>5-Years</u></b> | <b><u>7-Years</u></b> | <b><u>10-Years</u></b> |
|---------------------------------------|----------------------|-----------------------|-----------------------|-----------------------|------------------------|
| Annualized Returns                    | 14.3%                | 16.3%                 | 5.7%                  | 11.6%                 | 13.5%                  |
| Custom Benchmark Return               | 32.8%                | 17.9%                 | 7.2%                  | 9.0%                  | 11.5%                  |
| Rank vs. Peers                        | 25                   | 12                    | 22                    | 18                    | 22                     |

- Across all time periods over the past ten years the plan's Alternative Assets have ranked in the top quartile of Public Plans greater than \$1 billion as calculated by State Street.
- It is difficult to compare Private Equity to publicly traded benchmark indexes, especially over short periods of time. The custom benchmark is a blend of U.S. stocks and bonds lagged by three months, as the valuation reports for Private Equity are lagged as well. The asset class often trails strong directional moves in the U.S. stock market, both up and down, over short horizons. However, as it is shown in the table above, over longer horizons, the asset class has delivered returns over the custom benchmark.
- The long-term strategic allocation target for the Private Equity asset class is 16.0%. At the end of December, the plan had \$10.5 billion, 20.6% of the total plan, allocated to Private Equity, with another \$4.2 billion unfunded committed. Over the past year, Private Equity has returned \$1.3 billion in cash back to the plan.
- Within Alternatives, there are a handful of sub-strategies; the largest within the plan are Buyout Funds, Special Situation Funds, and Venture Capital Funds totaling 86% of the current market value of the asset class.
- In order to gain the desired Private Equity exposures, the plan partners with a general partner. As of December 2012, the plan has partnered with 84 such firms. Blackstone is one of the largest of such partners. Including Private Equity, Real Estate, Infrastructure, and Hedge Funds, SMRS has over \$900 million invested with Blackstone with another \$370 million committed to various partnership strategies.



**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**PERFORMANCE**

**FOR PERIODS ENDING  
DECEMBER 31, 2012**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**MARCH 7, 2013**



**Jon M. Braeutigam  
Chief Investment Officer  
Bureau of Investments**



# *Bureau of Investments*

## *Mission Statement*

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*The Bureau of Investments provides quality investment management services, professional expertise, and advice to the State Treasurer as fiduciary of the State of Michigan Retirement Systems and Michigan boards and agencies. The Bureau strives to provide consistent and cost-effective management of funds to achieve competitive investment returns that meet objectives within an acceptable level of risk for the benefit of employees, retirees, and citizens of the State of Michigan.*

## *Goals*

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*Maintain sufficient liquidity to pay benefits.*

*Meet or exceed actuarial assumption  
over the long term.*

*Perform in the top half of the public plan  
universe over the long term.*

*Exceed individual asset class benchmarks  
over the long term.*

*Diversify assets to reduce risk.*

**MPSERS PENSION**  
**Time-Weighted Rates of Return**  
**Periods Ending December 31, 2012**

| Assets<br>% of<br>Portfolio<br>12/31/12             | Ten<br>Years <sup>1</sup> |             | Seven<br>Years <sup>1</sup> |            | Five<br>Years <sup>1</sup> |             | Three<br>Years <sup>1</sup> |             | One<br>Year <sup>1</sup> |             | Current<br>Quarter |             |           |
|---|---------------------------|-------------|-----------------------------|------------|----------------------------|-------------|-----------------------------|-------------|--------------------------|-------------|--------------------|-------------|-----------|
|   | Rate                      | Rank        | Rate                        | Rank       | Rate                       | Rank        | Rate                        | Rank        | Rate                     | Rank        | Rate               | Rank        |           |
| <b>TOTAL PLAN</b>                                   | <b>100.0</b>              | <b>7.5</b>  | <b>66</b>                   | <b>5.2</b> | <b>56</b>                  | <b>2.2</b>  | <b>64</b>                   | <b>9.5</b>  | <b>37</b>                | <b>12.6</b> | <b>84</b>          | <b>2.2</b>  | <b>57</b> |
| Median - Greater than \$10 Billion <sup>2</sup>     |                           | 7.7         |                             | 5.2        |                            | 2.4         |                             | 9.2         |                          | 13.5        |                    | 2.3         |           |
| MPSERS Total Plan Policy                            |                           | 7.7         |                             | 5.2        |                            | 3.0         |                             | 9.8         |                          | 15.1        |                    | 2.4         |           |
| <b>DOMESTIC EQUITIES</b>                            | <b>26.3</b>               | <b>7.2</b>  | <b>79</b>                   | <b>4.3</b> | <b>39</b>                  | <b>2.0</b>  | <b>33</b>                   | <b>10.2</b> | <b>62</b>                | <b>16.8</b> | <b>37</b>          | <b>0.7</b>  | <b>72</b> |
| Median <sup>2</sup>                                 |                           | 7.9         |                             | 4.2        |                            | 1.6         |                             | 10.6        |                          | 16.1        |                    | 1.1         |           |
| S&P 1500 Index                                      |                           | 7.5         |                             | 4.4        |                            | 2.1         |                             | 11.2        |                          | 16.2        |                    | 0.0         |           |
| <b>Stock-Active</b>                                 | <b>13.8</b>               | <b>7.0</b>  |                             | <b>4.1</b> |                            | <b>1.9</b>  |                             | <b>9.7</b>  |                          | <b>16.6</b> |                    | <b>1.2</b>  |           |
| S&P 500 Index/ S&P 1500 Blended Index <sup>3</sup>  |                           | 7.3         |                             | 4.4        |                            | 2.1         |                             | 11.2        |                          | 16.2        |                    | 0.0         |           |
| <b>Stock- Large Cap Active</b>                      | <b>8.2</b>                | <b>6.7</b>  |                             | <b>3.7</b> |                            | <b>1.3</b>  |                             | <b>9.0</b>  |                          | <b>15.8</b> |                    | <b>0.6</b>  |           |
| S&P 500 Index                                       |                           | 7.1         |                             | 4.1        |                            | 1.7         |                             | 10.9        |                          | 16.0        |                    | -0.4        |           |
| <b>Stock - Mid Cap Active</b>                       | <b>1.9</b>                |             |                             | <b>5.6</b> |                            | <b>3.3</b>  |                             | <b>12.1</b> |                          | <b>13.6</b> |                    | <b>1.7</b>  |           |
| S&P 400 Mid Cap Index                               |                           |             |                             | 6.3        |                            | 5.2         |                             | 13.6        |                          | 17.9        |                    | 3.6         |           |
| <b>Stock- Small Cap Active</b>                      | <b>1.5</b>                | <b>10.2</b> |                             | <b>6.5</b> |                            | <b>5.2</b>  |                             | <b>10.6</b> |                          | <b>13.6</b> |                    | <b>2.4</b>  |           |
| S&P 600 Small Cap Index                             |                           | 10.5        |                             | 5.7        |                            | 5.1         |                             | 14.1        |                          | 16.3        |                    | 2.2         |           |
| <b>Stock - Multicap Active</b>                      | <b>1.3</b>                |             |                             |            |                            | <b>2.8</b>  |                             | <b>11.5</b> |                          | <b>17.8</b> |                    | <b>0.8</b>  |           |
| S&P 1500 Index                                      |                           |             |                             | 2.1        |                            | 2.1         |                             | 11.2        |                          | 16.2        |                    | 0.0         |           |
| <b>Stock-Passive US Equities</b>                    | <b>12.5</b>               | <b>7.8</b>  |                             | <b>4.7</b> |                            | <b>2.5</b>  |                             | <b>11.7</b> |                          | <b>16.9</b> |                    | <b>0.1</b>  |           |
| S&P 900 Blend <sup>4</sup>                          |                           | 7.5         |                             | 4.3        |                            | 2.0         |                             | 11.1        |                          | 16.2        |                    | -0.1        |           |
| <b>Passive S&amp;P 500</b>                          | <b>11.4</b>               | <b>7.3</b>  |                             | <b>4.4</b> |                            | <b>2.1</b>  |                             | <b>11.4</b> |                          | <b>16.7</b> |                    | <b>-0.2</b> |           |
| S&P 500 Index                                       |                           | 7.1         |                             | 4.1        |                            | 1.7         |                             | 10.9        |                          | 16.0        |                    | -0.4        |           |
| <b>Passive S&amp;P Mid-Cap</b>                      | <b>1.1</b>                | <b>11.2</b> |                             | <b>7.2</b> |                            | <b>6.4</b>  |                             | <b>14.8</b> |                          | <b>19.0</b> |                    | <b>3.9</b>  |           |
| S&P 400 Mid Cap Index                               |                           | 10.5        |                             | 6.3        |                            | 5.2         |                             | 13.6        |                          | 17.9        |                    | 3.6         |           |
| <b>INTERNATIONAL EQUITIES</b>                       | <b>14.5</b>               | <b>8.2</b>  |                             | <b>2.2</b> |                            | <b>-2.5</b> |                             | <b>5.2</b>  |                          | <b>19.4</b> |                    | <b>6.4</b>  |           |
| Median <sup>2</sup>                                 |                           | 7.8         |                             | 3.5        |                            | -2.4        |                             | 4.9         |                          | 18.2        |                    | 6.1         |           |
| International Blended Benchmark <sup>5</sup>        |                           | 8.2         |                             | 1.4        |                            | -3.3        |                             | 3.7         |                          | 17.4        |                    | 5.9         |           |
| <b>Passive International Equities</b>               | <b>5.3</b>                | <b>8.2</b>  |                             | <b>2.2</b> |                            | <b>-2.1</b> |                             | <b>5.1</b>  |                          | <b>17.7</b> |                    | <b>5.9</b>  |           |
| S&P Developed BMI-EPAC net 75/25 blend <sup>6</sup> |                           | 7.9         |                             | 1.6        |                            | -3.0        |                             | 4.2         |                          | 17.9        |                    | 6.6         |           |
| <b>Active International Equities</b>                | <b>4.9</b>                |             |                             | <b>2.7</b> |                            | <b>-3.4</b> |                             | <b>5.8</b>  |                          | <b>21.4</b> |                    | <b>6.7</b>  |           |
| S&P Developed BMI Ex U.S. net                       |                           |             |                             | 2.8        |                            | -2.9        |                             | 4.4         |                          | 16.8        |                    | 5.7         |           |
| <b>Emerging Markets Equities</b>                    | <b>4.3</b>                |             |                             |            |                            |             |                             | <b>6.0</b>  |                          | <b>21.5</b> |                    | <b>6.6</b>  |           |
| MSCI Emerging Markets Net                           |                           |             |                             |            |                            |             |                             | 4.7         |                          | 18.2        |                    | 5.6         |           |

# MPSERS PENSION

## Time-Weighted Rates of Return Periods Ending December 31, 2012

|  | Assets<br>% of<br>Portfolio<br>12/31/12 | Ten<br>Years <sup>1</sup> |      | Seven<br>Years <sup>1</sup> |      | Five<br>Years <sup>1</sup> |      | Three<br>Years <sup>1</sup> |      | One<br>Year <sup>1</sup> |      | Current<br>Quarter |      |
|--|---|---------------------------|------|-----------------------------|------|----------------------------|------|-----------------------------|------|--------------------------|------|--------------------|------|
|  |   | Rate                      | Rank | Rate                        | Rank | Rate                       | Rank | Rate                        | Rank | Rate                     | Rank | Rate               | Rank |
|  |   |                           |      |                             |      |                            |      |                             |      |                          |      |                    |      |
| <b>ALTERNATIVE INVESTMENTS</b>               | 20.7                                    | 13.5                      | 22   | 11.6                        | 18   | 5.7                        | 22   | 16.3                        | 12   | 14.3                     | 25   | 4.2                | 14   |
| Median <sup>2</sup>                          |   | 10.9                      |      | 9.1                         |      | 3.7                        |      | 12.3                        |      | 11.2                     |      | 2.9                |      |
| Alternative Blended Benchmark <sup>7</sup>   |   | 11.5                      |      | 9.0                         |      | 7.2                        |      | 17.9                        |      | 32.8                     |      | 6.9                |      |
| <b>REAL ESTATE</b>                           | 9.8                                     | 5.0                       | 58   | 2.9                         | 43   | -3.3                       | 67   | 8.4                         | 73   | 8.7                      | 72   | 1.0                | 84   |
| Median <sup>2</sup>                          |   | 6.1                       |      | 2.1                         |      | -2.6                       |      | 11.1                        |      | 12.9                     |      | 2.6                |      |
| NCREIF - Property Blended Index <sup>8</sup> |   | 7.2                       |      | 4.6                         |      | 0.8                        |      | 11.2                        |      | 9.1                      |      | 2.2                |      |
| NCREIF Open Fund Index Net                   |   | 5.7                       |      | 2.6                         |      | -2.0                       |      | 13.3                        |      | 9.8                      |      | 2.1                |      |
| <b>INFRASTRUCTURE INVESTMENTS</b>            | 0.4                                     |                           |      |                             |      |                            |      |                             |      | 13.4                     |      | 7.8                |      |
| <b>BONDS</b>                                 | 13.3                                    | 5.7                       | 51   | 6.7                         | 51   | 7.0                        | 51   | 7.0                         | 82   | 5.7                      | 82   | 0.7                | 51   |
| Median <sup>2</sup>                          |   | 5.3                       |      | 6.7                         |      | 7.0                        |      | 8.5                         |      | 7.4                      |      | 0.7                |      |
| Barclays Govt/Credit                         |   | 5.9                       |      | 5.9                         |      | 6.1                        |      | 6.7                         |      | 4.8                      |      | 0.4                |      |
| <b>Government</b>                            | 2.7                                     | 4.8                       |      | 5.6                         |      | 5.4                        |      | 5.2                         |      | 2.0                      |      | -0.1               |      |
| Barclays Government                          |   | 4.7                       |      | 5.5                         |      | 5.2                        |      | 5.5                         |      | 2.0                      |      | -0.1               |      |
| <b>Corporate</b>                             | 7.4                                     | 6.1                       |      | 6.9                         |      | 7.2                        |      | 6.8                         |      | 5.1                      |      | 0.4                |      |
| Barclays Credit                              |   | 6.2                       |      | 6.8                         |      | 7.7                        |      | 8.7                         |      | 9.4                      |      | 1.0                |      |
| <b>Fixed Income External</b>                 | 3.2                                     |                           |      |                             |      | 7.1                        |      | 8.3                         |      | 8.8                      |      | 1.1                |      |
| Barclays Aggregate                           |   |                           |      |                             |      | 6.0                        |      | 6.2                         |      | 4.2                      |      | 0.2                |      |
| <b>ABSOLUTE RETURN</b>                       | 3.9                                     |                           |      |                             |      | 4.1                        |      | 4.1                         |      | 8.1                      |      | 1.9                |      |
| HFRI FOF Cons 1 mth lagged                   |   |                           |      |                             |      | 1.7                        |      | 1.7                         |      | 2.9                      |      | 1.2                |      |
| <b>COMMODITY INVESTMENTS</b>                 | 0.8                                     |                           |      |                             |      | 1.5                        |      | 1.5                         |      | 0.1                      |      | -5.7               |      |
| DJ-UBS Commodity Index TR                    |   |                           |      |                             |      | 0.1                        |      | 0.1                         |      | -1.1                     |      | -6.3               |      |
| <b>REAL RETURN AND OPPORTUNISTIC</b>         | 4.6                                     |                           |      |                             |      |                            |      |                             |      | 4.1                      |      | 0.2                |      |
| 50% (CPI +500bp) + 50% (8% actuarial rate)   |   |                           |      |                             |      |                            |      |                             |      | 7.4                      |      | 1.2                |      |
| <b>CASH EQUIVALENTS</b>                      | 5.7                                     | 1.7                       |      | 1.6                         |      | 0.1                        |      | 0.4                         |      | 0.3                      |      | 0.1                |      |
| 1 Month T-Bill                               |   | 1.6                       |      | 1.6                         |      | 0.3                        |      | 0.1                         |      | 0.1                      |      | 0.0                |      |

<sup>1</sup> Annualized Returns  
<sup>2</sup> Comparison universe is the State Street Universe comprised of Public Funds greater than \$10 Billion on the total plan level and greater than \$1 Billion for asset classes.  
<sup>3</sup> Active Equity - Index is S&P 500 prior to March 2006, S&P 1500 current.

<sup>4</sup> History prior to 5/1/07 is the S&P 1500  
<sup>5</sup> International blended benchmark is S&P Developed BMI-EPAC 50/50 prior to 1/1/2010. S&P Developed BMI-EPAC 75 USD / 25 Local, 1/1/2010 to 9/30/10.

MSCI ACWI Ex Us Gross 10/1/2010 to present.  
<sup>6</sup> Passive International benchmark is S&P Developed BMI-EPAC 50/50 prior to 1/1/2010. S&P Developed BMI-EPAC 75 USD / 25 Local, 1/1/2010 to present.

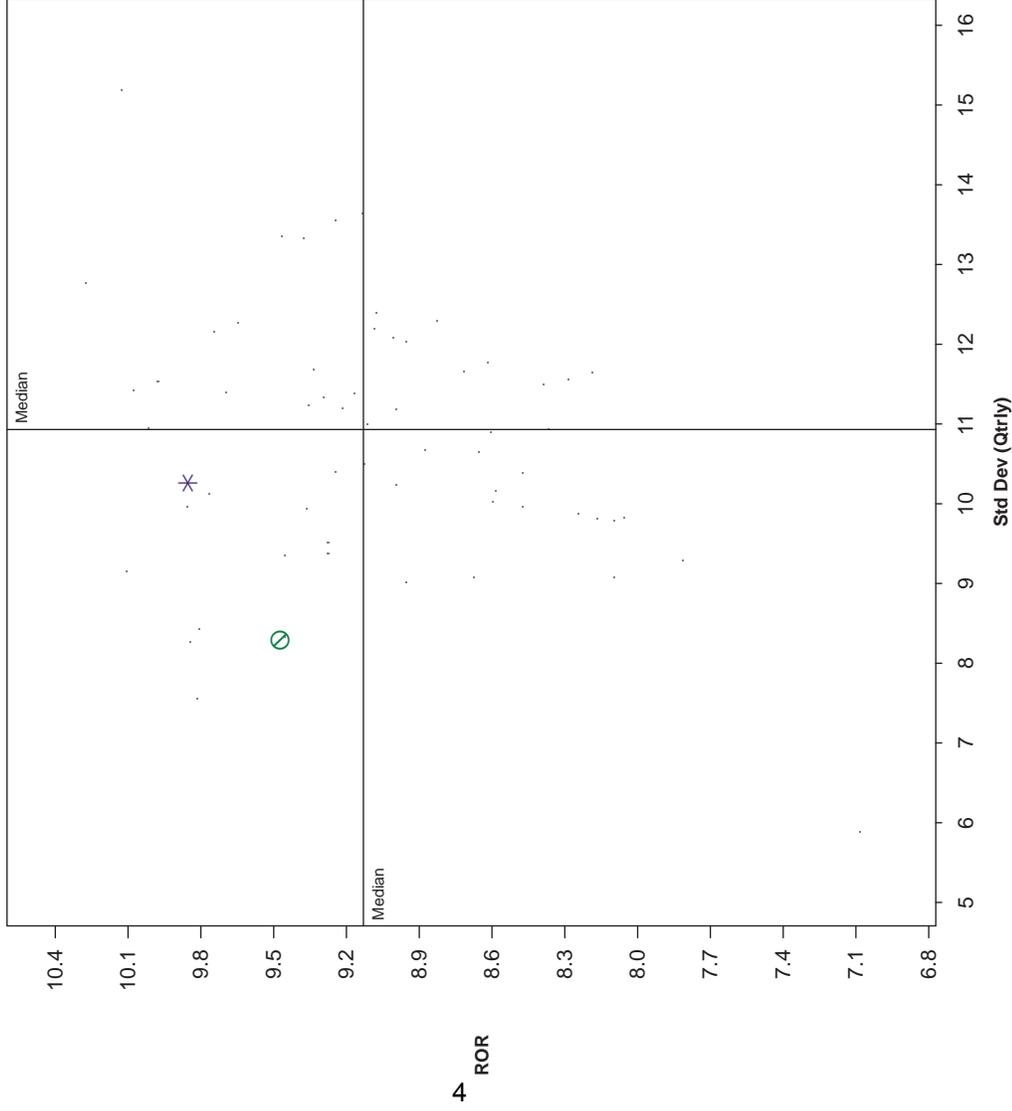
<sup>7</sup> SP 500 + 300 BP through 12/31/06. Ending market value weighted blend of 10 yr yield + 300 BP and SP 500 + 300 12/31/06 to 9/30/09.  
 Ending market value weighted blend of 10 yr yield + 300 BP and SP 500 + 300 3 month lagged 9/30/09 to present.

<sup>8</sup> NCREIF - Property Blended Index is NPI minus 75 basis points prior to October 2005, NPI minus 130 basis points current.  
 Source: State Street Analytics; the NCREIF - NPI (Property Index) source is NCREIF; the S&P BMI-EPAC Index source is S&P.



# MPSERS TOTAL PLAN UNIVERSE REPORT

Public Funds (DB) > \$1 Billion (SSE) - Risk vs. Return 3 Years  
12/31/12



| NAME                     | Std Dev (Qtrly) 3 Yrs | ROR 3 Yrs |
|--------------------------|-----------------------|-----------|
| 5th Percentile           | 8.25                  | 10.11     |
| 25th Percentile          | 9.80                  | 9.65      |
| 50th Percentile          | 10.93                 | 9.13      |
| 75th Percentile          | 11.67                 | 8.61      |
| 95th Percentile          | 13.50                 | 8.08      |
| No. of Obs               | 61                    | 61        |
| TOTAL PUBLIC SCHOOL      | 8.32                  | 6         |
| MPSERS TOTAL PLAN POLICY | 10.29                 | 39        |

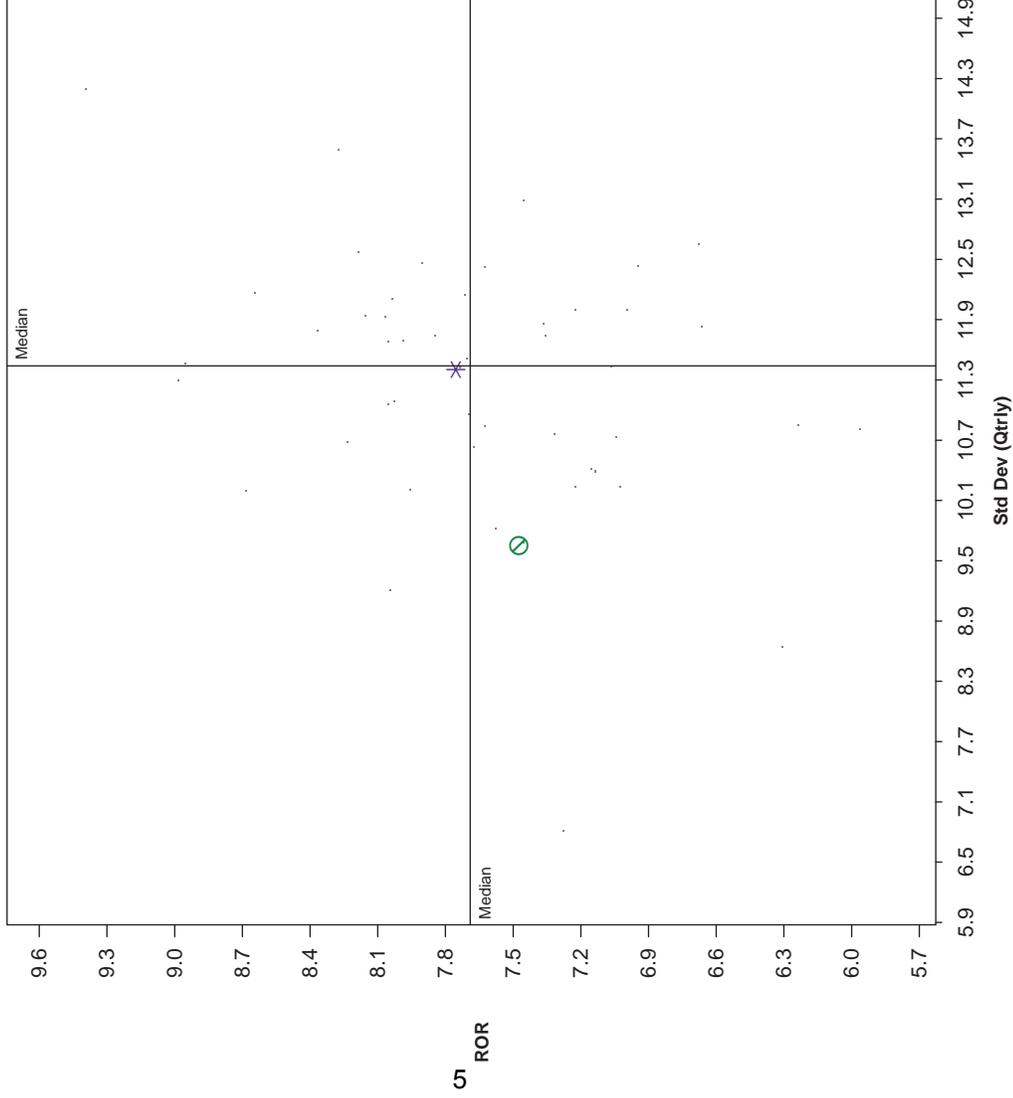
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# MPERS TOTAL PLAN UNIVERSE REPORT

**Public Funds (DB) > \$1 Billion (SSE) - Risk vs. Return 10 Years  
12/31/12**



| NAME                    | Std Dev (Qtrly)<br>10 Yrs | 10 Yrs |
|-------------------------|---------------------------|--------|
| 5th Percentile          | 8.63                      | 8.99   |
| 25th Percentile         | 10.62                     | 8.06   |
| 50th Percentile         | 11.44                     | 7.69   |
| 75th Percentile         | 11.97                     | 7.19   |
| 95th Percentile         | 13.33                     | 6.27   |
| No. of Obs              | 48                        | 48     |
| TOTAL PUBLIC SCHOOL     | 9.67                      | 8      |
| MPERS TOTAL PLAN POLICY | 11.42                     | 48     |

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**MPSERS Pension  
Cumulative and Consecutive  
Total Fund Returns**

**Cumulative For Years Ending 12/31/12**

|  | 1 Year | 2 Year | 3 Year | 4 Year | 5 Year | 6 Year | 7 Year | 8 Year | 9 Year | 10 Year |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| <b>MPSERS</b>                                    | 12.6   | 7.9    | 9.5    | 10.1   | 2.2    | 3.6    | 5.2    | 5.8    | 6.2    | 7.5     |
| <b>Public Plan - Median (&gt; \$10 billion)*</b> | 13.5   | 7.1    | 9.2    | 11.4   | 2.4    | 3.6    | 5.2    | 5.6    | 6.3    | 7.7     |
| <b>Rank</b>                                      | 84     | 13     | 37     | 77     | 64     | 53     | 56     | 31     | 54     | 66      |
| <b>bp Difference - Median</b>                    | -86    | 81     | 30     | -124   | -24    | -2     | -2     | 13     | -9     | -27     |

**Consecutive For Years Ending**

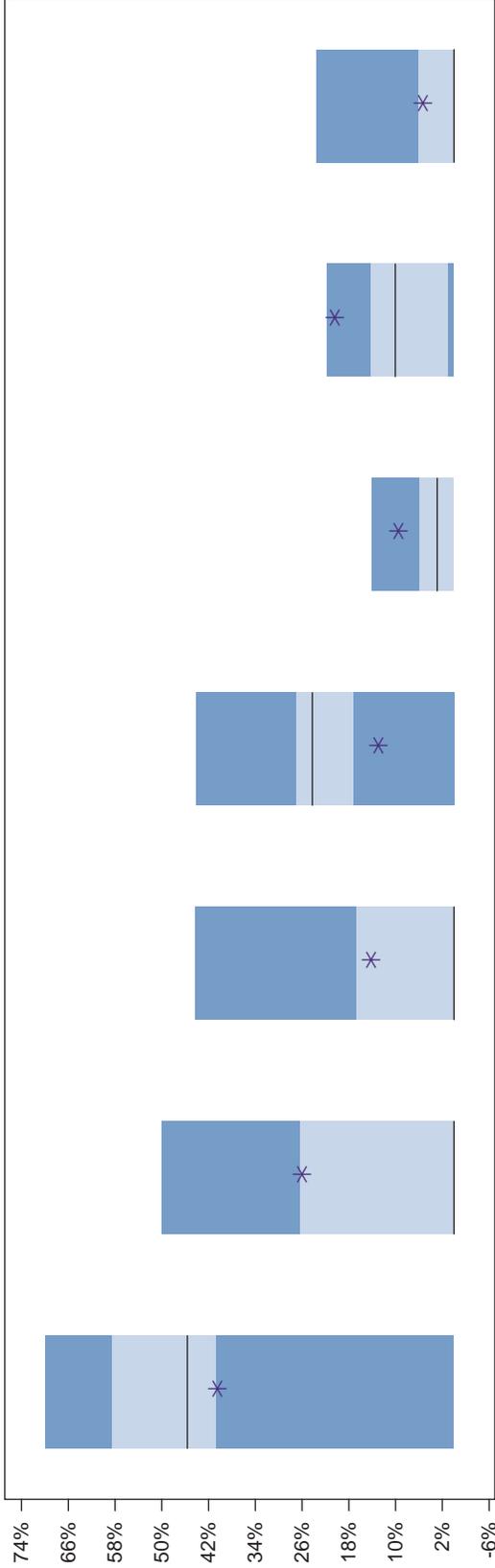
|  | 12/12 | 12/11 | 12/10 | 12/09 | 12/08 | 12/07 | 12/06 | 12/05 | 12/04 | 12/03 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>MPSERS</b>                                    | 12.6  | 3.3   | 12.7  | 12.1  | -24.2 | 11.1  | 15.0  | 9.9   | 10.2  | 19.2  |
| <b>Public Plan - Median (&gt; \$10 billion)*</b> | 13.5  | 1.2   | 13.0  | 18.6  | -26.6 | 9.3   | 14.8  | 8.7   | 12.2  | 23.3  |
| <b>Rank</b>                                      | 84    | 9     | 67    | 84    | 23    | 14    | 38    | 39    | 88    | 91    |
| <b>bp Difference - Median</b>                    | -86   | 218   | -33   | -649  | 239   | 179   | 26    | 118   | -196  | -415  |

\*State Street Public Funds Universe > \$10 Billion.



# MPSERS TOTAL PLAN UNIVERSE REPORT

## Public Funds (DB) > \$10 Billion (SSE) - Allocation 12/31/12



## MSERS Pension Cumulative and Consecutive Total Fund Returns

### Cumulative For Years Ending 12/31/12

|   | 1 Year | 2 Year | 3 Year | 4 Year | 5 Year | 6 Year | 7 Year | 8 Year | 9 Year | 10 Year |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| <b>MSERS</b>                                    | 12.6   | 7.8    | 9.3    | 10.0   | 2.0    | 3.5    | 5.1    | 5.6    | 6.1    | 7.4     |
| <b>Public Plan - Median (&gt; \$1 billion)*</b> | 13.4   | 6.9    | 9.1    | 11.4   | 2.7    | 3.7    | 5.2    | 5.5    | 6.2    | 7.7     |
| <b>Rank</b>                                     | 79     | 15     | 36     | 83     | 77     | 67     | 65     | 38     | 56     | 66      |
| <b>bp Difference - Median</b>                   | -78    | 92     | 21     | -145   | -65    | -25    | -12    | 15     | -9     | -33     |

### Consecutive For Years Ending

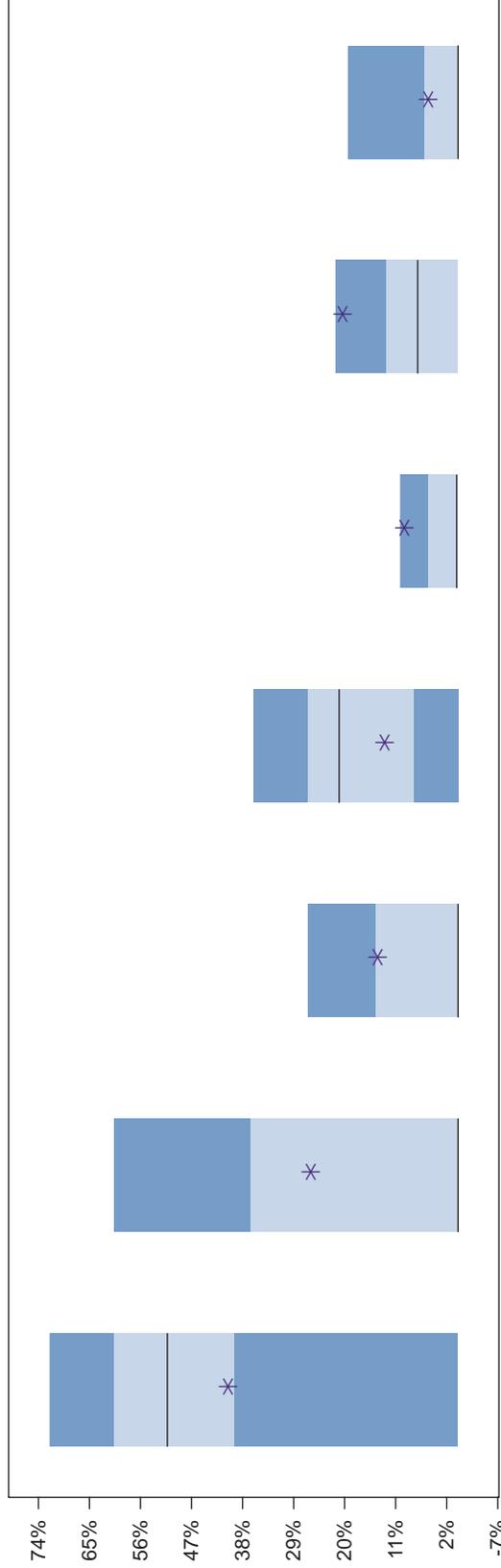
|   | 12/12 | 12/11 | 12/10 | 12/09 | 12/08 | 12/07 | 12/06 | 12/05 | 12/04 | 12/03 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>MSERS</b>                                    | 12.6  | 3.2   | 12.5  | 11.9  | -24.4 | 11.0  | 15.0  | 9.9   | 10.2  | 19.0  |
| <b>Public Plan - Median (&gt; \$1 billion)*</b> | 13.4  | 0.9   | 13.5  | 18.7  | -26.3 | 9.1   | 14.7  | 8.0   | 11.9  | 23.0  |
| <b>Rank</b>                                     | 79    | 10    | 73    | 84    | 29    | 8     | 33    | 24    | 89    | 95    |
| <b>bp Difference - Median</b>                   | -78   | 231   | -100  | -678  | 185   | 196   | 29    | 193   | -172  | -398  |

\*State Street Public Funds Universe > \$1 Billion.



# MERS TOTAL PLAN UNIVERSE REPORT

## Public Funds (DB) > \$1 Billion (SSE) - Allocation 12/31/12



**MSPRS Pension  
Cumulative and Consecutive  
Total Fund Returns**

**Cumulative For Years Ending 12/31/12**

|   | 1 Year | 2 Year | 3 Year | 4 Year | 5 Year | 6 Year | 7 Year | 8 Year | 9 Year | 10 Year |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| <b>MSPRS</b>                                    | 12.5   | 7.8    | 9.4    | 9.9    | 2.0    | 3.5    | 5.1    | 5.7    | 6.2    | 7.4     |
| <b>Public Plan - Median (&gt; \$1 billion)*</b> | 13.4   | 6.9    | 9.1    | 11.4   | 2.7    | 3.7    | 5.2    | 5.5    | 6.2    | 7.7     |
| <b>Rank</b>                                     | 81     | 14     | 31     | 84     | 76     | 61     | 60     | 37     | 53     | 64      |
| <b>bp Difference - Median</b>                   | -85    | 97     | 26     | -151   | -63    | -20    | -7     | 21     | -4     | -29     |

**Consecutive For Years Ending**

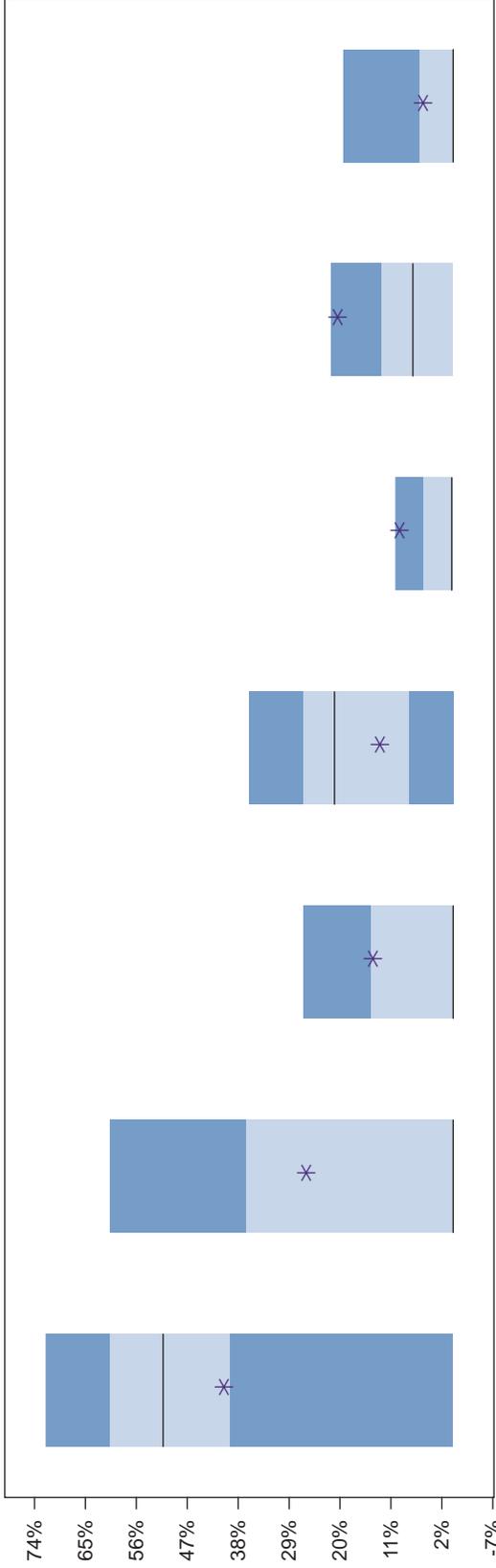
|   | 12/12 | 12/11 | 12/10 | 12/09 | 12/08 | 12/07 | 12/06 | 12/05 | 12/04 | 12/03 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>MSPRS</b>                                    | 12.5  | 3.3   | 12.6  | 11.5  | -24.2 | 11.2  | 15.1  | 10.0  | 10.2  | 19.0  |
| <b>Public Plan - Median (&gt; \$1 billion)*</b> | 13.4  | 0.9   | 13.5  | 18.7  | -26.3 | 9.1   | 14.7  | 8.0   | 11.9  | 23.0  |
| <b>Rank</b>                                     | 81    | 9     | 73    | 87    | 26    | 7     | 29    | 21    | 89    | 95    |
| <b>bp Difference - Median</b>                   | -85   | 246   | -93   | -716  | 207   | 217   | 37    | 200   | -171  | -406  |

\*State Street Public Funds Universe > \$1 Billion.



# MSPRS TOTAL PLAN UNIVERSE REPORT

## Public Funds (DB) > \$1 Billion (SSE) - Allocation 12/31/12



|                 | Equities % | Equities US % | Equities Non US % | Fixed Income % | Real Estate % | Private Equity % | Cash Equiv % |
|-----------------|------------|---------------|-------------------|----------------|---------------|------------------|--------------|
| 5th Percentile  | 72.04      | 60.73         | 26.51             | 35.99          | 10.24         | 21.55            | 19.39        |
| 25th Percentile | 60.79      | 36.70         | 14.66             | 26.45          | 5.36          | 12.73            | 5.95         |
| 50th Percentile | 51.27      | 0.00          | 0.00              | 20.98          | 0.26          | 7.13             | 0.00         |
| 75th Percentile | 39.41      | 0.00          | 0.00              | 7.83           | 0.00          | 0.00             | 0.00         |
| 95th Percentile | 0.00       | 0.00          | 0.00              | 0.00           | 0.00          | 0.00             | 0.00         |
| No. of Obs      | 70         | 70            | 70                | 70             | 70            | 70               | 70           |
| TOTAL POLICE    | 40.87      | 26.34         | 14.53             | 13.29          | 9.82          | 20.75            | 5.64         |
|                 | 71         | 34            | 26                | 72             | 9             | 6                | 28           |

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**MJRS Pension  
Cumulative and Consecutive  
Total Fund Returns**

**Cumulative For Years Ending 12/31/12**

|                                       | 1 Year | 2 Year | 3 Year | 4 Year | 5 Year | 6 Year | 7 Year | 8 Year | 9 Year | 10 Year |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| MJRS                                  | 12.5   | 7.7    | 9.2    | 9.4    | 1.9    | 3.3    | 4.9    | 5.5    | 5.9    | 7.1     |
| Public Plan - Median (> \$1 billion)* | 13.4   | 6.9    | 9.1    | 11.4   | 2.7    | 3.7    | 5.2    | 5.5    | 6.2    | 7.7     |
| Rank                                  | 81     | 20     | 48     | 89     | 78     | 70     | 67     | 52     | 65     | 80      |
| bp Difference - Median                | -89    | 81     | 4      | -207   | -80    | -38    | -26    | -4     | -33    | -60     |

**Consecutive For Years Ending**

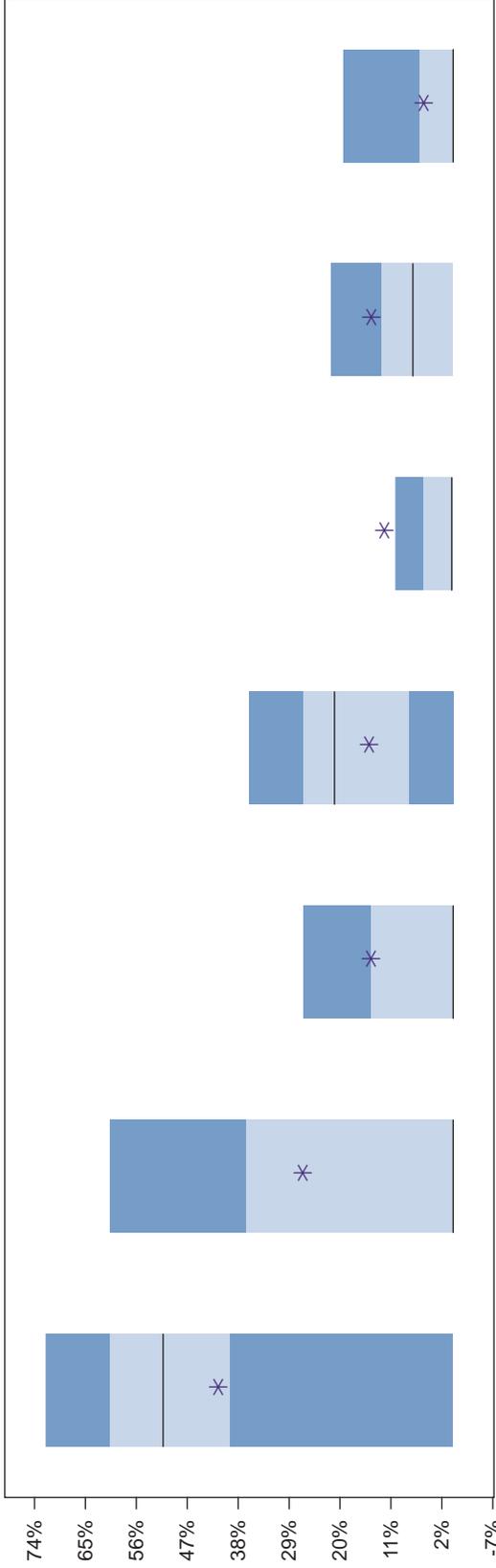
|                                       | 12/12 | 12/11 | 12/10 | 12/09 | 12/08 | 12/07 | 12/06 | 12/05 | 12/04 | 12/03 |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| MJRS                                  | 12.5  | 3.1   | 12.2  | 9.9   | -23.3 | 11.0  | 14.8  | 9.3   | 9.6   | 18.4  |
| Public Plan - Median (> \$1 billion)* | 13.4  | 0.9   | 13.5  | 18.7  | -26.3 | 9.1   | 14.7  | 8.0   | 11.9  | 23.0  |
| Rank                                  | 81    | 10    | 80    | 90    | 16    | 8     | 45    | 29    | 92    | 96    |
| bp Difference - Median                | -89   | 220   | -130  | -877  | 302   | 197   | 7     | 133   | -232  | -463  |

\*State Street Public Funds Universe > \$1 Billion.



# MJRS TOTAL PLAN UNIVERSE REPORT

## Public Funds (DB) > \$1 Billion (SSE) - Allocation 12/31/12



|                 | Equities % | Equities US % | Equities Non US % | Fixed Income % | Real Estate % | Private Equity % | Cash Equiv % |
|-----------------|------------|---------------|-------------------|----------------|---------------|------------------|--------------|
| 5th Percentile  | 72.04      | 60.73         | 26.51             | 35.99          | 10.24         | 21.55            | 19.39        |
| 25th Percentile | 60.79      | 36.70         | 14.66             | 26.45          | 5.36          | 12.73            | 5.95         |
| 50th Percentile | 51.27      | 0.00          | 0.00              | 20.98          | 0.26          | 7.13             | 0.00         |
| 75th Percentile | 39.41      | 0.00          | 0.00              | 7.83           | 0.00          | 0.00             | 0.00         |
| 95th Percentile | 0.00       | 0.00          | 0.00              | 0.00           | 0.00          | 0.00             | 0.00         |
| No. of Obs      | 70         | 70            | 70                | 70             | 70            | 70               | 70           |
| TOTAL JUDGES    | 41.85      | 26.95         | 14.90             | 15.20          | 12.48         | 14.83            | 5.58         |

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**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**ASSET ALLOCATION REVIEW**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**MARCH 7, 2013**



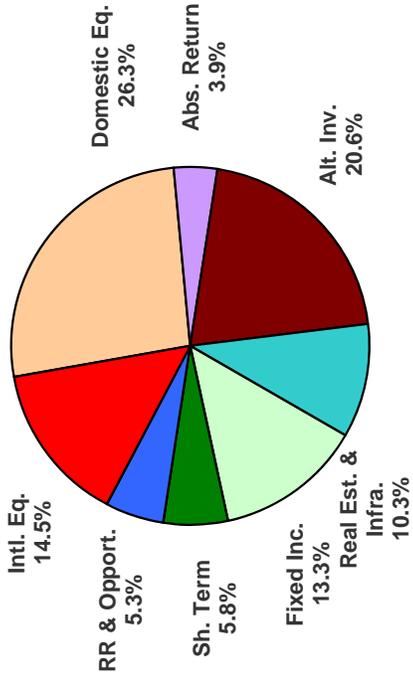
**Jon M. Braeutigam  
Chief Investment Officer  
Bureau of Investments**





# STATE OF MICHIGAN RETIREMENT SYSTEMS PROFILE - DECEMBER 2012

## Asset Allocation 12/31/12



## Asset Allocation By Market Value

(In Millions)

| Investment Strategies   | 12/31/12        | 9/30/12         |
|-------------------------|-----------------|-----------------|
| Domestic Equity         | \$13,408        | \$13,959        |
| Alternative Investments | 10,533          | 10,575          |
| International Equity    | 7,392           | 7,147           |
| Fixed Income            | 6,771           | 6,729           |
| Real Estate & Infra.    | 5,238           | 5,292           |
| Short Term***           | 2,945           | 2,575           |
| Real Return & Opport.   | 2,704           | 2,381           |
| Absolute Return         | 1,981           | 1,905           |
| <b>TOTAL</b>            | <b>\$50,972</b> | <b>\$50,563</b> |

## Short Term Equivalents

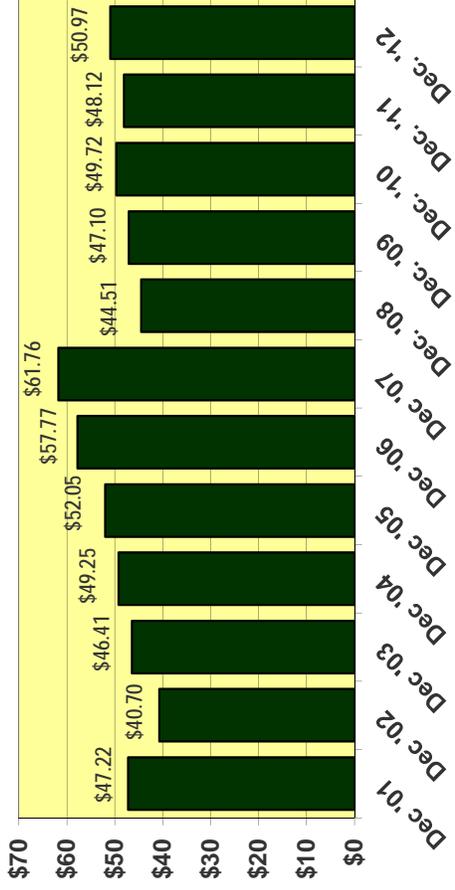
|                                     |              |
|-------------------------------------|--------------|
| Short Term Strategy****             | \$2.9        |
| Short Term in Other Inv. Strategies | 0.9          |
| <b>TOTAL SHORT TERM</b>             | <b>\$3.8</b> |

7.5% of Total Funds

## Market Value\*

12/01 - 12/12

(Billions of Dollars)



## Market Value By Plan ~ 12/31/12

(in millions)

|              | Plan Mkt. Value | OPEB** Mkt. Value | Combined Mkt. Value | %             |
|--------------|-----------------|-------------------|---------------------|---------------|
| MPERS        | \$38,421        | \$1,387           | \$39,808            | 78.1%         |
| MSERS        | 9,378           | 432               | 9,810               | 19.2%         |
| MSPRS        | 1,076           | 33                | 1,109               | 2.2%          |
| MJRS         | 244             | 1                 | 245                 | 0.5%          |
| <b>TOTAL</b> | <b>\$49,119</b> | <b>\$1,853</b>    | <b>\$50,972</b>     | <b>100.0%</b> |



18th Largest DB Public Pension Fund in the U.S.  
21st Largest DB Pension Fund in the U.S.



Pensions & Investments Survey - February 4, 2013 Issue

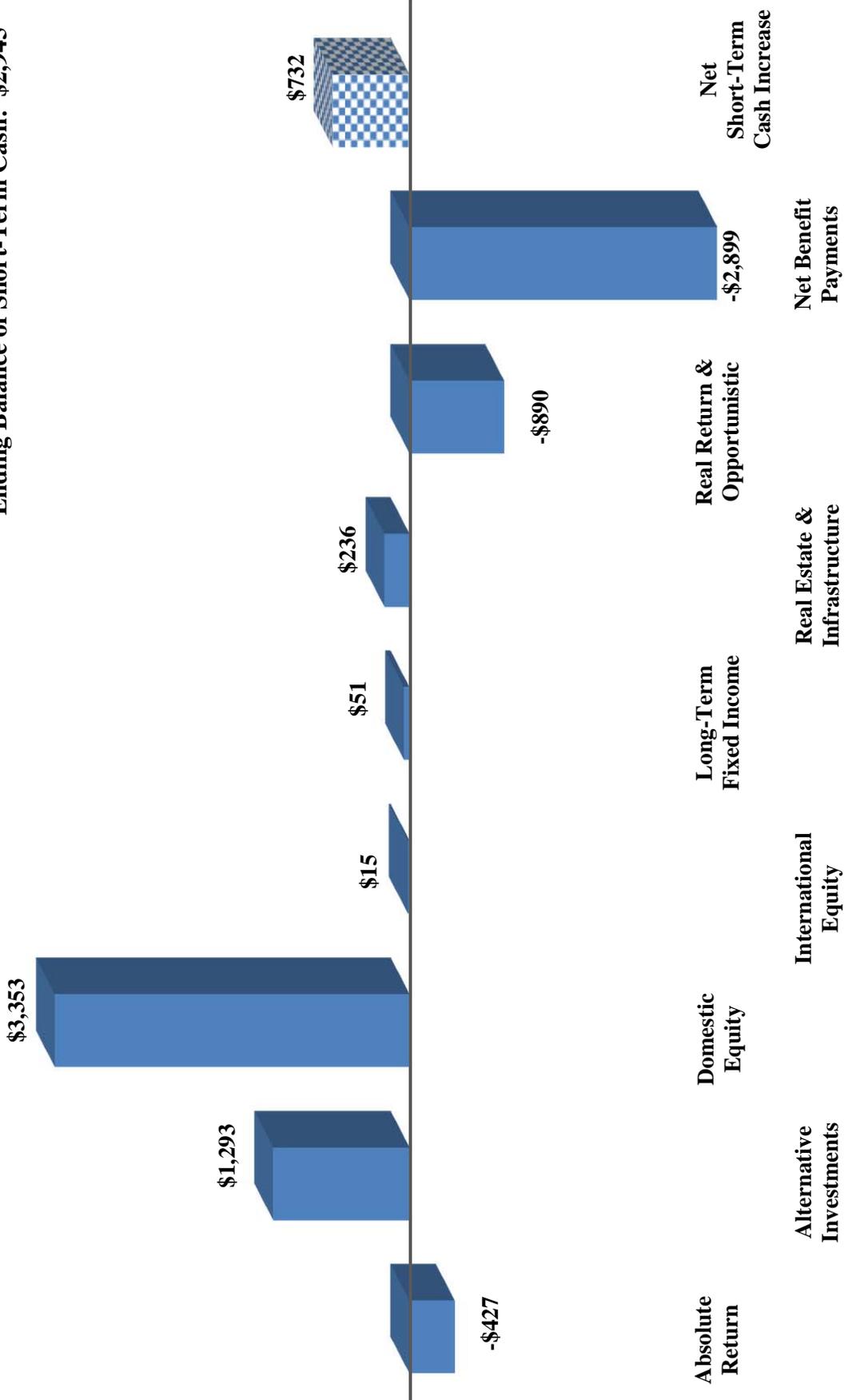
\*The combined payout for the plans is approximately \$3.16 billion to beneficiaries in excess of contributions (FY2012).

\*\*OPEB - Other Post Employment Benefits

# Sources and Uses of Cash December 2011 ~ December 2012

Beginning Balance of Short-Term Cash: \$2,213

Ending Balance of Short-Term Cash: \$2,945



A negative number in an asset category indicates a use of cash, a positive number indicates a source of cash.  
Dollars in millions

## Asset Allocation Targets

| Asset Class                 | MPSERS             |                   |                    | MSERS              |                   |                    | MSPRS              |                   |                    | MJRS               |                   |                    | SMRS      |
|-----------------------------|--------------------|-------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|--------------------|--------------------|-------------------|--------------------|-----------|
|                             | Actual<br>12/31/12 | Target<br>9/30/13 | Target*<br>9/30/14 | Ranges    |
| Broad U.S. Equity           | 26.2%              | 28.5%             | 31.0%              | 26.4%              | 28.5%             | 31.0%              | 26.3%              | 28.5%             | 31.0%              | 26.9%              | 29.0%             | 29.0%              | 20% - 50% |
| Alternative Invest.         | 20.7%              | 18.5%             | 16.0%              | 20.7%              | 18.5%             | 16.0%              | 20.8%              | 18.5%             | 16.0%              | 14.8%              | 14.5%             | 14.0%              | 10% - 25% |
| Broad Int'l Equity          | 14.5%              | 15.5%             | 16.0%              | 14.5%              | 15.5%             | 16.0%              | 14.5%              | 15.5%             | 16.0%              | 14.9%              | 15.0%             | 15.0%              | 10% - 20% |
| U.S. Fixed Income Core      | 13.3%              | 14.0%             | 15.0%              | 13.3%              | 14.0%             | 15.0%              | 13.3%              | 14.0%             | 15.0%              | 15.2%              | 17.0%             | 19.0%              | 10% - 25% |
| Real Estate Core            | 9.8%               | 8.0%              | 6.0%               | 9.8%               | 8.0%              | 6.0%               | 9.8%               | 8.0%              | 6.0%               | 12.5%              | 10.0%             | 7.0%               | 5% - 15%  |
| Real Return / Opportunistic | 5.4%               | 5.0%              | 5.0%               | 5.3%               | 5.0%              | 5.0%               | 5.3%               | 5.0%              | 5.0%               | 5.4%               | 5.0%              | 5.0%               | 0% - 10%  |
| Absolute Return             | 3.9%               | 4.0%              | 4.0%               | 3.9%               | 4.0%              | 4.0%               | 3.9%               | 4.0%              | 4.0%               | 4.1%               | 3.5%              | 4.0%               | 0% - 12%  |
| Cash                        | 5.7%               | 5.0%              | 4.0%               | 5.6%               | 5.0%              | 4.0%               | 5.6%               | 5.0%              | 4.0%               | 5.6%               | 4.0%              | 4.0%               | 1% - 9%   |
| Infrastructure              | 0.5%               | 1.5%              | 3.0%               | 0.5%               | 1.5%              | 3.0%               | 0.5%               | 1.5%              | 3.0%               | 0.6%               | 2.0%              | 3.0%               | 0% - 5%   |
| <b>TOTAL</b>                | 100.0%             | 100.0%            | 100.0%             | 100.0%             | 100.0%            | 100.0%             | 100.0%             | 100.0%            | 100.0%             | 100.0%             | 100.0%            | 100.0%             |           |
| Expected Return             |                    |                   | 7.7%               |                    |                   | 7.7%               |                    |                   | 7.7%               |                    |                   | 7.9%               |           |
| Expected Risk (1 yr.)       |                    |                   | 13.9%              |                    |                   | 13.9%              |                    |                   | 13.9%              |                    |                   | 11.8%              |           |

\*Complies with basket clause and international restrictions.



**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**CAPITAL MARKETS OVERVIEW**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**MARCH 7, 2013**



**Gregory J. Parker, CFA  
Director of Investments – Public Markets  
Director of Asset Allocation  
Bureau of Investments**



# CAPITAL MARKETS

## Return and Risk Assumptions, Benchmark and Outlook

*A starting point.*

| <b>MPSERS Plan</b>      | <b>Assumed Return*<br/>(Arithmetic)</b> | <b>Standard<br/>Deviation*</b> | <b>Trailing 10-Year<br/>(Benchmark**)</b> | <b>Tactical (Short Term)<br/>Expectations***</b> |
|-------------------------|---|--------------------------------|---|--|
| Private Equity          | 11.8%                                   | 30.3%                          | 11.5%                                     | Trim   |
| International Equity    | 8.7%                                    | 20.8%                          | 10.2%                                     | Hold   |
| Domestic Equity         | 7.9%                                    | 18.0%                          | 7.5%                                      | Trim   |
| Infrastructure          | 7.4%                                    | 13.8%                          | 6.5%                                      | Add  |
| Real Estate (Core)      | 7.0%                                    | 12.5%                          | 7.2%                                      | Trim   |
| Real Ret/Oppportunistic | 6.0%                                    | 11.5%                          | 7.4%                                      | Add  |
| Absolute Return         | 6.8%                                    | 9.8%                           | 5.8%                                      | Hold   |
| Long-Term Fixed         | 3.5%                                    | 5.8%                           | 5.3%                                      | Trim   |
| Short-Term              | 2.3%                                    | 3.0%                           | 1.6%                                      | Hold   |

\*RV Kuhns 2013 Long Term Return/Risk assumptions

\*\*2012 Investment policy statement; annualized returns

\*\*\*Actual investments may differ due to changing conditions and the availability of new information

## Overview

*Price volatility risks with equities, low yields, and selectivity strategies challenged.*

- Within publicly traded equities, international outperformed U.S. in 2012. The outperformance began in July 2012 after the President of the European Central Bank, Mario Draghi, pledged to do “whatever it takes” to save the euro. Many investors have come to believe this statement effectively takes the disaster scenario off the table, and therefore European equities in particular are deemed less risky than before.
- International equity markets found additional strength in Japan starting in November after it became clear that the newly elected party would adopt very accommodative policies to weakening the yen in order to boost the export oriented economy. In the fourth quarter alone, the TOPIX, was up over 17%.
- The 10-year U.S. Treasury rate closed the year at 1.76% falling 0.12% from the end of 2011. Investment grade corporate interest rate spreads contracted by roughly 0.3% and finished the year near the historic average of around 1.2% over Treasuries. High yield spreads contracted by nearly 2% over the year and are also near the average spread of 5% over. At the end of December, the Barclay’s Government/Credit Index had a yield to maturity of only 1.6%.
- Over the past few years, the plan has shifted allocation towards non-publicly traded, credit oriented strategies. Including unfunded commitments, these strategies make up roughly 5% of the total assets. The advantages of these strategies are good cash flows, better than 8% expected returns, and diversification away from volatile equities.
- Hedge funds continue to struggle, on average underperforming a simple 60% stock and 40% bond portfolio. The HFRI Fund-of-Funds Conservative index has underperformed this simple strategy by -8.7%, -8.4%, -5.2%, and -4.3% over the past one, three, five, and ten years respectively. The plan’s allocation to absolute return strategies is modest, less than 4%, and has exceeded its benchmark by 5.2% and 2.4% annualized over the past one and three years.
- Despite the easy monetary policies globally, inflation has not materialized and is not expected to do so in the near future; the latest CPI reading is 1.7%. Because of these facts, inflation oriented strategies (such as real return, commodities, infrastructure, etc.) will be targeted selectively.

## S&P 500 INDEX ONE YEAR ENDING 12/31/12



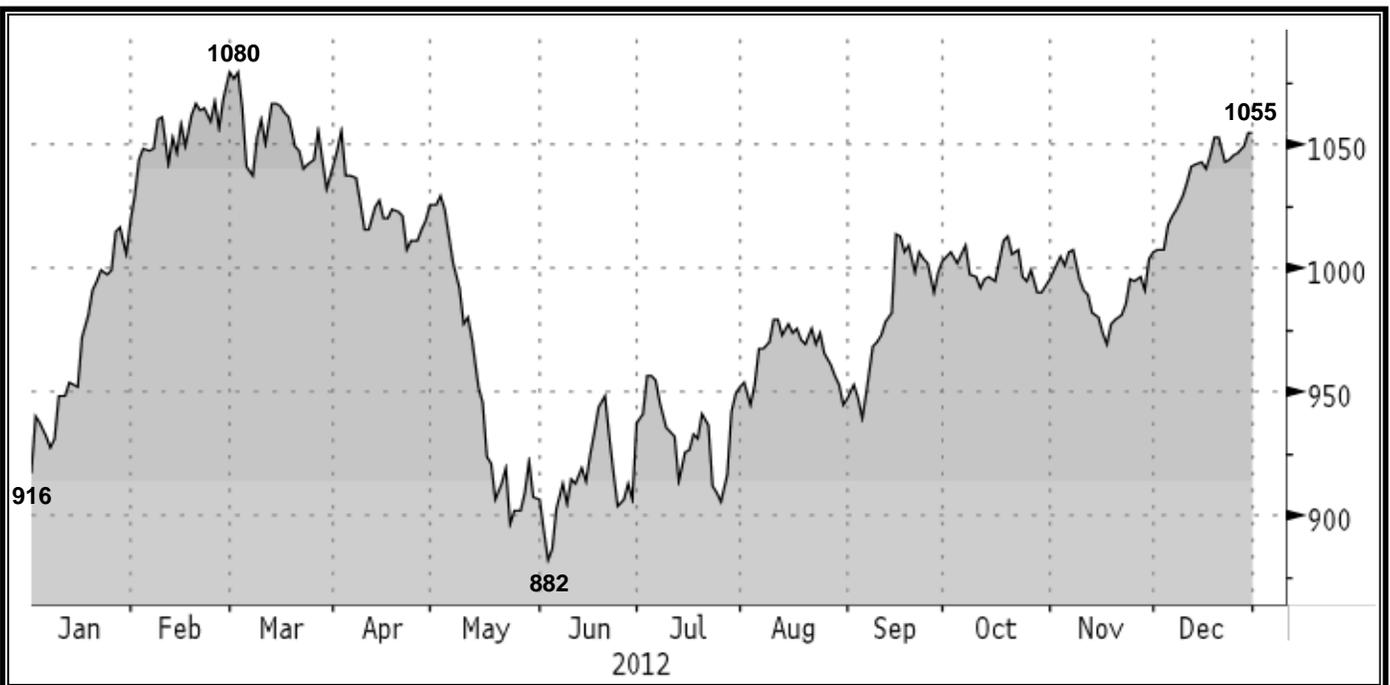
## TEN-YEAR U.S. TREASURY NOTE YIELDS ONE YEAR ENDING 12/31/12



## MSCI EAFE INDEX ONE YEAR ENDING 12/31/12



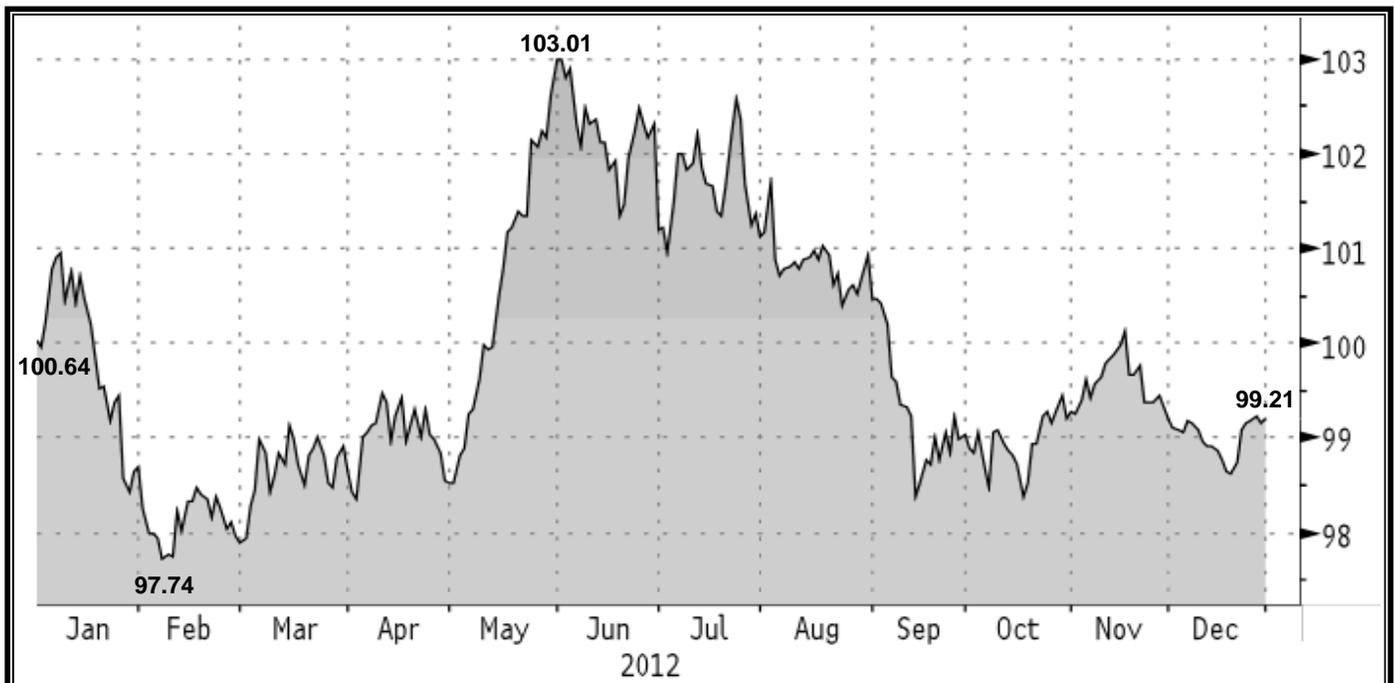
## MSCI EMERGING ONE YEAR ENDING 12/31/12



## DOW JONES UBS COMMODITY INDEX ONE YEAR ENDING 12/31/12



## U.S. DOLLAR TRADE-WEIGHTED INDEX ONE YEAR ENDING 12/31/12



## **Domestic Equity**

*Prefer larger over smaller, Value to Growth, and the Financial Sector.*

- The returns in Domestic Equities recently have been good. The broad domestic market index, S&P 1500, returned 16.2% for the year and 11.2% over the past three years. Longer term, over the past ten years the domestic equity index produced an annualized rate of return of 7.5%.
- Domestic equity is attractively priced relative to bonds; however, valuation metrics are mixed meaning there is uncertainty whether the returns in absolute over the next cycle will be as strong as the historical average. The price trend is moderately positive though, suggesting the market might trend higher.
- Small caps have done better than large caps. Over the past one, three, five, and ten years small caps have annually outperformed large caps by 0.2%, 1.2%, 1.8%, and 2.4% respectively. However, the run in small cap outperformance may be coming to an end. Relative to large caps, small caps broadly sell at a price premium that is near the highest paid on record, going back to 1983. The plan is underweighted U.S. small cap stocks.
- The S&P 500 growth index trailed the value index by -2.7% over the past year. This is a reversal in the three and five year trend where growth has outperformed value by 0.8% and 3.4% on an annualized basis. Longer term, over the past ten years, the difference is negligible with growth beating value by 0.06% annualized. Within Domestic Equities, the plan currently is not using style as a primary value-added tool, finding opportunities in both growth and value indexes.
- A big driver of the Value Index outperformance was due to the returns in the Financial Sector, currently 23% of the index. As measured by the total return of the exchange traded fund XLF, the Financials sector was up 28.4% for 2012, beating the S&P 1500 benchmark index by 12.2%. However, over the past 3 years, Financials have badly lagged the index underperforming by -5.3% on an annualized basis. Within Domestic Equity, the plan is currently overweight in Financials 17.0% vs. 15.4% for the benchmark weight.

## **International Equity**

*International equities had a good 2012. Putting money to work in emerging markets.*

- The returns in International Equities recently have been good. The broad international market index, MSCI ACWI Ex-USA, returned 17.4% for the year though just 4.3% over the past three years. Longer term, over the past ten years the international equity index produced an annualized rate of return of 10.2%.
- The plan is underweight international equities relative to the strategic policy (14.5 vs. 16.0) as well as to a global benchmark. Over the past year, the split between active and passive strategies changed from a roughly 25/75 split to now close to 50/50. Also, in the fourth quarter of 2012 emerging market exposure was increased from a 75/25 developed/emerging markets split to 70/30 by rebalancing existing strategies.
- The 10-year return is in part due to the incredible strength of the emerging markets. Over the past ten years, the MSCI Emerging Markets Index is up 16.5% annualized. Over the past one, three, five, and ten years, emerging markets have out-performed developed markets annually by 0.9%, 1.1%, 2.8%, and 8.3% respectively.
- Compared to the U.S. and Developed International, Emerging Markets trade at a 15% discount, with similar or superior growth prospects.
- Although the long-term returns for international equities are good and valuations not an issue, the price trend has been downward sloping to flattish at best since 2007. Developed markets have approached the top of their sideways price channel and emerging markets, on the other hand, were stuck in a downward sloping price channel. At the end of January 2013, it appears that the price trend may be broken to the upside, suggesting that Emerging Market prices can go higher in the months ahead.

## **Interest Rates**

*Rates go lower still.*

- Across the board, interest rates were lower at the end of December than they were one year prior. This is especially true at the middle of the rate curve. The U.S. 10-year Treasury rate fell 0.12%, U.S. investment grade corporate interest rate spreads were down roughly 0.3%, high yield spreads contracted by nearly 2%, and Italian 10-year sovereign rates dropped by 2.6% since the end of last year. High Yield and Investment Grade U.S. corporate rates are now both priced at their historic median spread.
- Fed funds short-term rates are less than 0.25% and the U.S. 10-year Treasury rate ended the year yielding 1.76%. With rates at or below the latest year-over-year inflation rate of 1.7%, investors of U.S. 10-year (or shorter dated) bonds stand a high probability of losing purchasing power if held to maturity.
- Despite the drop in rates, the yield curve remains fairly steep as measured by the difference between the 10 and 2-year U.S. Treasury rates. These rates rank in the top quartile in terms of steepness since 1977 increasing the opportunities to “ride down the yield curve”.
- On September 13, 2012, the Federal Reserve announce a new \$40 billion a month quantitative easing (QE3) strategy. At its December meeting, the Federal Reserve announced additional policy guidelines that is sometimes called the “Evan’s Rule” named after Chicago Fed president Charlie Evans. The policy states that low rates will be appropriate at least as long as the unemployment rate remains above 6.5% and inflation over the next one to two years is expected to be less than 2.5%. Although it is not yet clear what impact this announcement has on the markets, it has spurred debate amongst market commentators.

## **Real Estate**

*Yields and growth, what’s not to like?*

- The returns in publicly traded REITs have been strong mostly due to their high dividend payouts. The FTSE Nareit Index has returned 18.1%, 17.8% 5.5%, and 11.6% over the past one, three, five, and ten years respectively. Privately held real estate normally lags the REIT index by one year. Because of this fact, the plan’s real estate returns should continue to see positive returns though valuations are a question.
- The REIT index is attractively priced relative to bonds; however, other valuation metrics indicate that the index is expensively priced. In other words, this index is cheap relative to bonds; however, it is expensive in the sense that it is not expected to deliver high absolute returns over the longer term.
- The price trend is positive though indicating that this index has some room to trend higher. Private market transactions take time to execute; therefore, it is unlikely that the plan would add to real estate given the existing backdrop, and would be more inclined to selectively pare holdings at a good price.

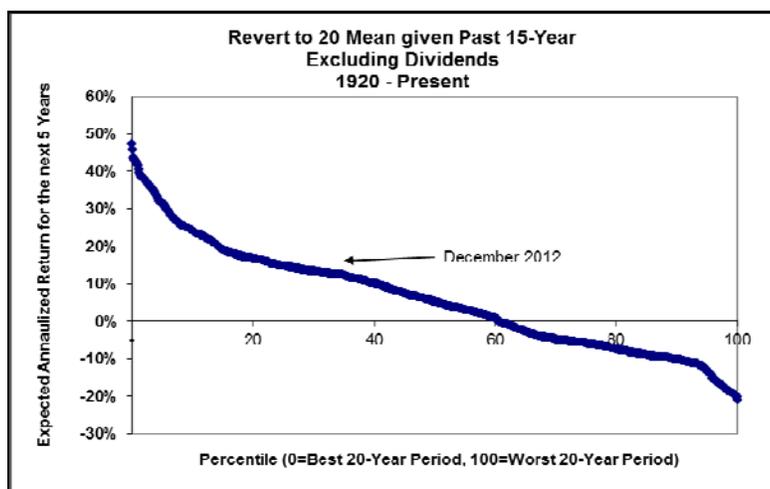
# Domestic Equities

## S&P 500 – 12/31/08 – 1/31/13



- At the beginning of 2012, the S&P 500 price broke out above the 200-day moving average.
- The market hit its 52-week highs during the quarter.
- The technical backdrop is upward sloping.

## Returns Based Outlook



- Since 1920, the median 20-year price return for the S&P 500 is 180.6% or 5.3% annualized.
- The S&P 500 has increased by 55.5% over the past 15 years.
- Using the 20-year median price return as a projection, the S&P 500 price return would be 12.5% over the next 5 years based on the previous 15-year return.

## Earnings Based Outlook

| <u>Scenario</u> | <u>Price Return Estimate</u> | <u>Total Return Estimate</u> |
|-----------------|------------------------------|------------------------------|
| Super Bull      | 22.9%                        | 26.6%                        |
| Bull            | 11.7%                        | 16.1%                        |
| Base            | 4.2%                         | 8.1%                         |
| Bear            | -6.5%                        | -3.6%                        |
| Super Bear      | -14.4%                       | -12.9%                       |

## Assumptions

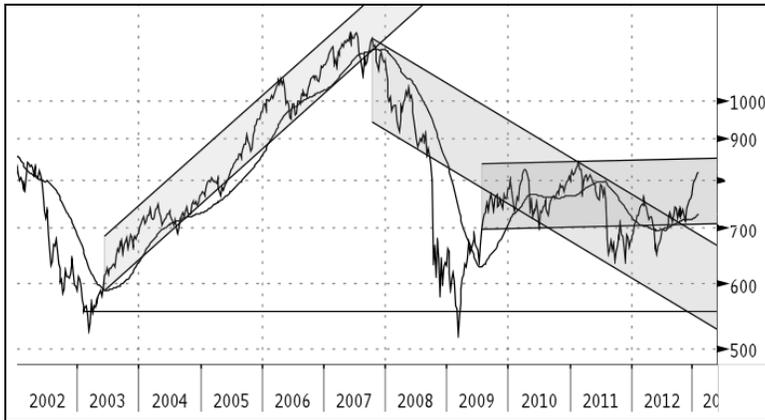
| <u>2017 Earnings</u> | <u>2017 P/E Ratio</u> | <u>Dividend Payout</u> |     |
|----------------------|-----------------------|------------------------|-----|
| High                 | \$168                 | 25.0                   | 62% |
| Mid                  | \$119                 | 15.5                   | 54% |
| Low                  | \$69                  | 10.0                   | 42% |

Based on Robert Shiller data

# International Equities

## Developed Markets

### MSCI EAFE – 12/31/01 – 1/31/13



- The developed international equity market, represented by the MSCI EAFE Index, is now above its 200-day moving average, and approaching the high end of the 2009-2011 price channel.
- The technical backdrop for developed international markets has improved though it remains in a side-ways price-trend.

## Emerging Markets

### MSCI Emerging Markets – 12/31/01 – 1/31/13



- The “V-shaped” recovery in emerging markets began in 2008. However, the rate of appreciation has slowed since late 2009.
- The upward sloping price trend established in 2002 is still intact.
- The trend since 2007 has been price weakness; however, it appears that prices have broken through to the upside potentially establishing a new positive trend.

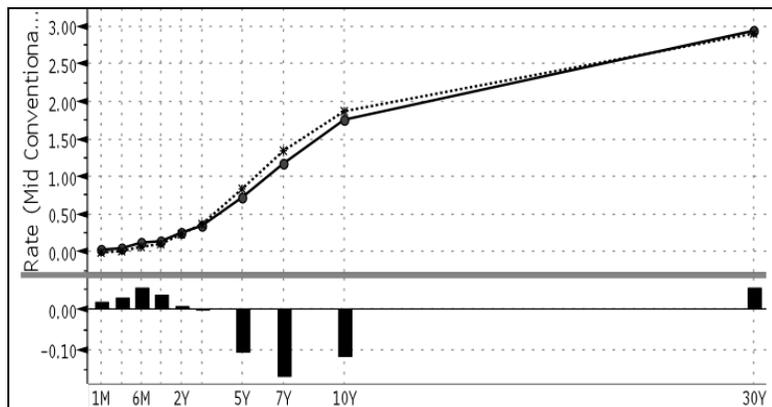
### Count of Markets Priced Below a 200-Day Moving Average

|                   | <u>Developed</u> | <u>Emerging</u> |
|-------------------|------------------|-----------------|
| January 31, 2013  | 0                | 1               |
| December 31, 2012 | 0                | 0               |
| December 31, 2011 | 5                | 2               |

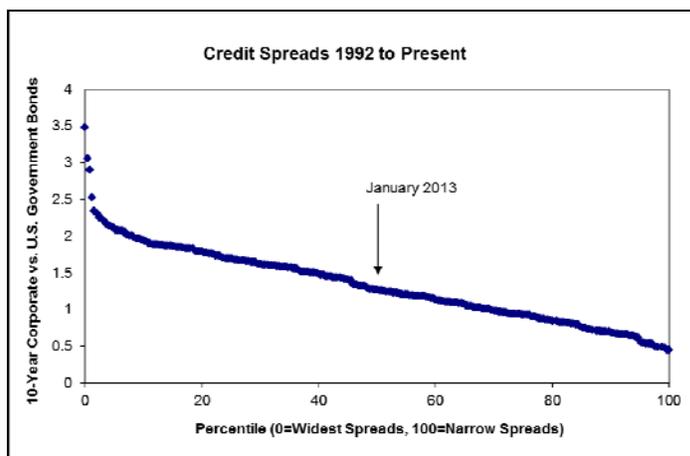
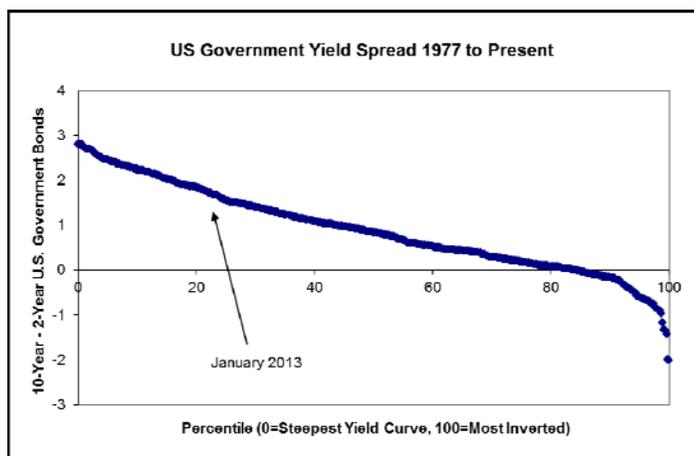
Prices above/below a 200-day moving average is a proxy for the near term direction of the stock market.

# U.S. Cash and Fixed Income

12/31/11 – 12/31/12

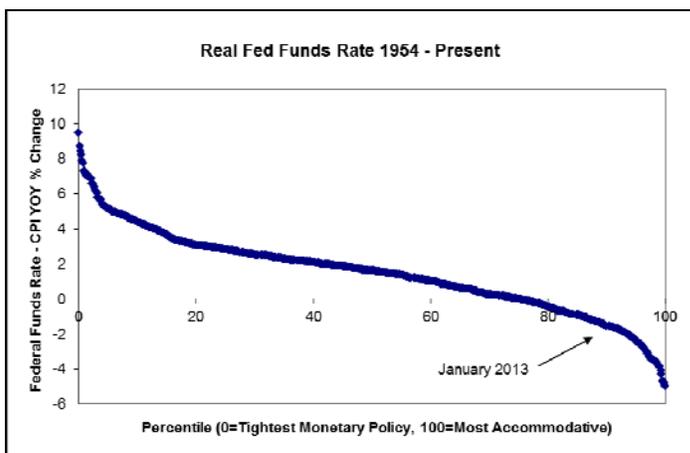
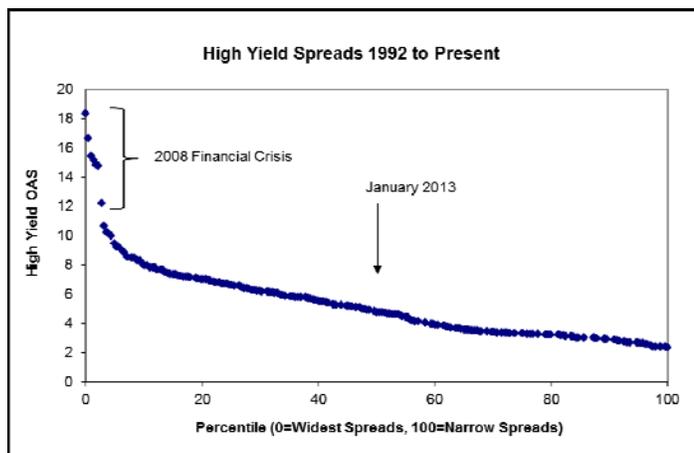


- Rates are basically unchanged year-over-year.
- Over the past year, mid-range rates have decreased, but increased at the shorter and longer ends.
- Rates at the short end are still very low.



- The yield curve is moderately elevated.
- 83 basis points of flattening to get to average.

- Credit spreads have compressed.
- Credit spreads are now at their historic average.



- Today, high yield spreads are at their historic average of +4.75%.

- The Fed maintains an extremely accommodative stance.
- The Fed has announced its intention to keep rates low through mid-2015.

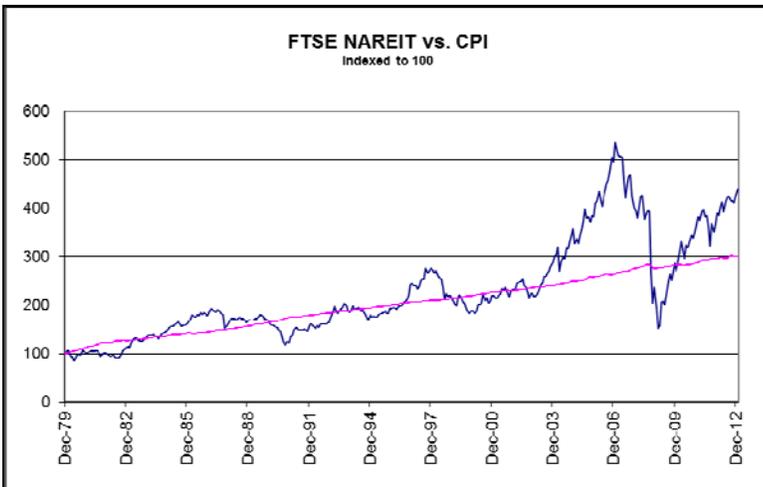
# U. S. Real Estate

## FTSE NAREIT Index – 12/31/05 – 1/31/13

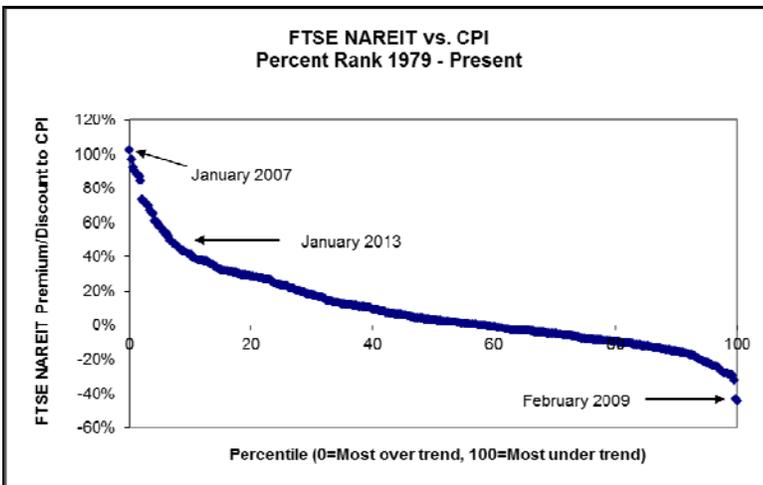


- Commercial real estate represented by the FTSE NAREIT Index has rebounded strongly since the first quarter of 2009 and has been trending up.
- The index price is above its 200-day moving average.
- The trend rate of acceleration appears to have slowed.

## Return Outlook

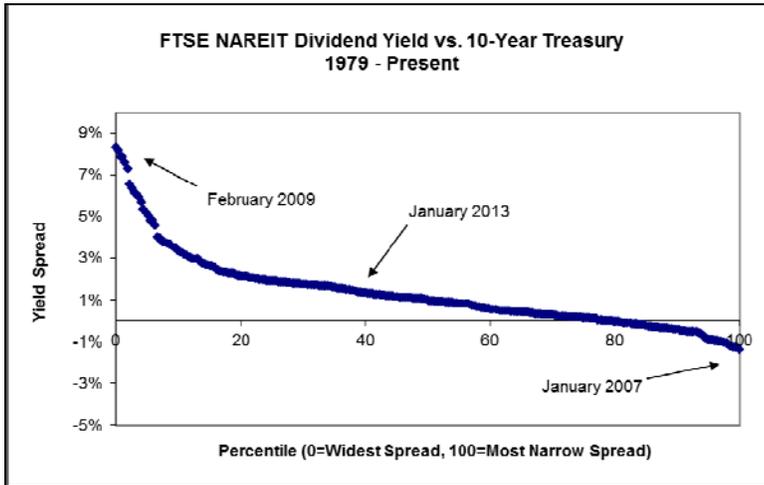


- REITs prices have trended around CPI.

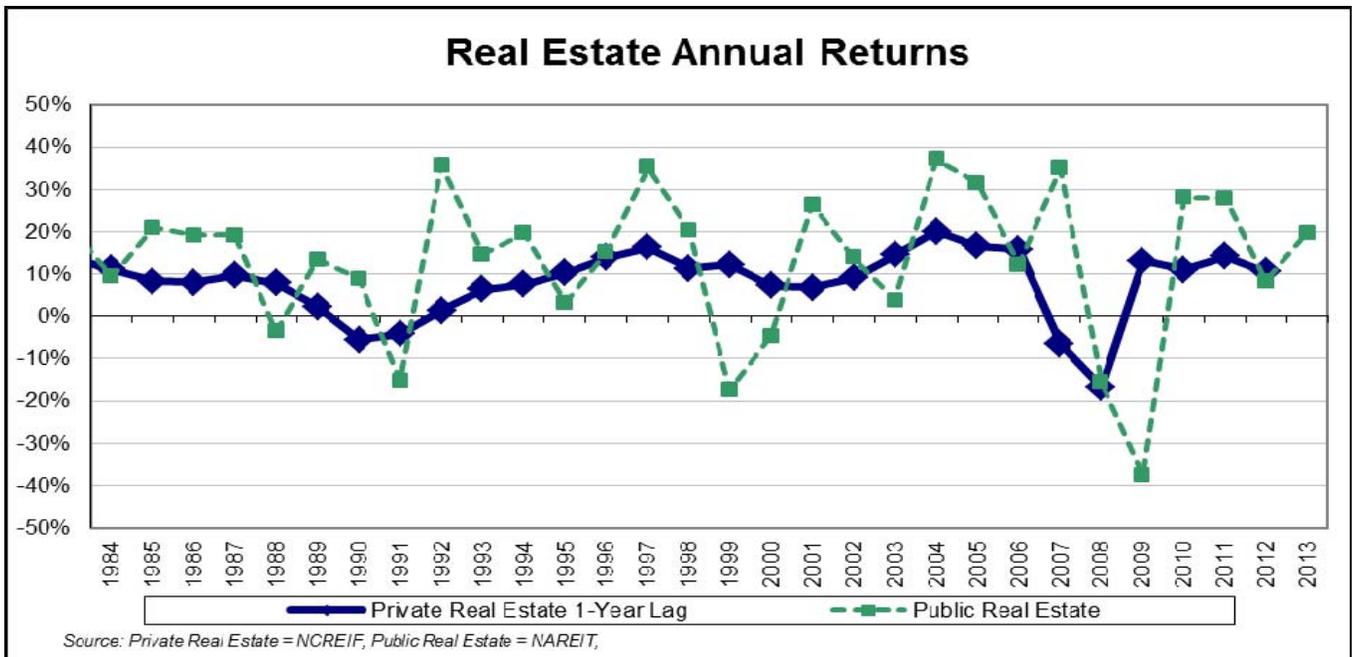


- REITs have priced lower ~ 90% of the time.
- REITs are very expensive when compared to the CPI.

## U.S. Real Estate - Continued



- The Index normally yields 0.98% more than 10-Year Treasuries.
- Current dividend yield is at 3.4%.
- When compared against the 10-Year Treasury, REITs are moderately priced.



- Private real estate returns historically have followed public real estate (REIT) returns.
- Using the public REIT market as a guide. The outlook for private real estate remains fairly positive.

# Commodities

## CRB Index – 12/31/01 – 12/31/12



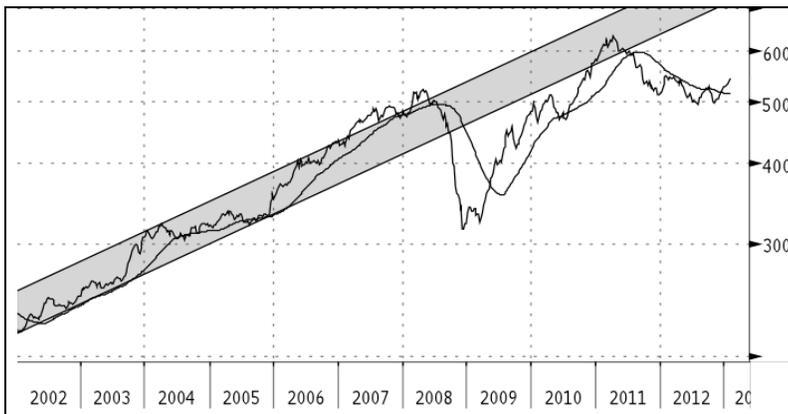
- Commodity prices, as measured by the ThompsonReuters / Jeffries CRB Index, continue the downward sloping price trend.
- Inflation does not appear to be a 2013 concern.

## CRB Food Index – 12/31/01 – 1/31/13



- CRB Food index has steadily increased since 2002.
- Index price breakdown in 2012.
- Food price increases do not appear to be a 2013 problem.

## CRB Raw Industrials Index – 12/31/01 – 1/31/13



- CRB Raw Industrials index trend has rolled over.
- Price trend is now increasing and will be an indicator to wealth in 2013.





**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**ECONOMIC AND MARKET REVIEW  
AND OUTLOOK**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**MARCH 7, 2013**



**Gregory J. Parker, CFA  
Director of Investments – Public Markets  
Director of Asset Allocation  
Bureau of Investments**



# ECONOMIC OUTLOOK

## Select Historic Economic Growth with Forecasts

*After some pause in 2012 growth resumes.*

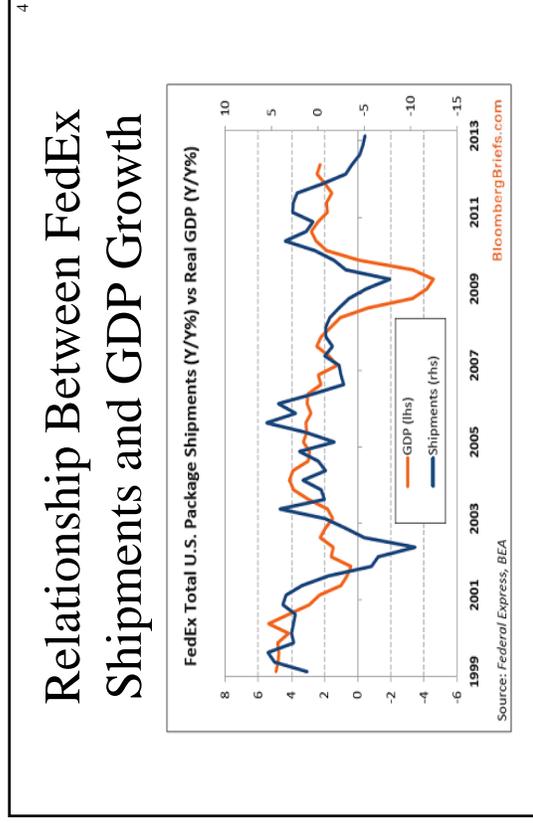
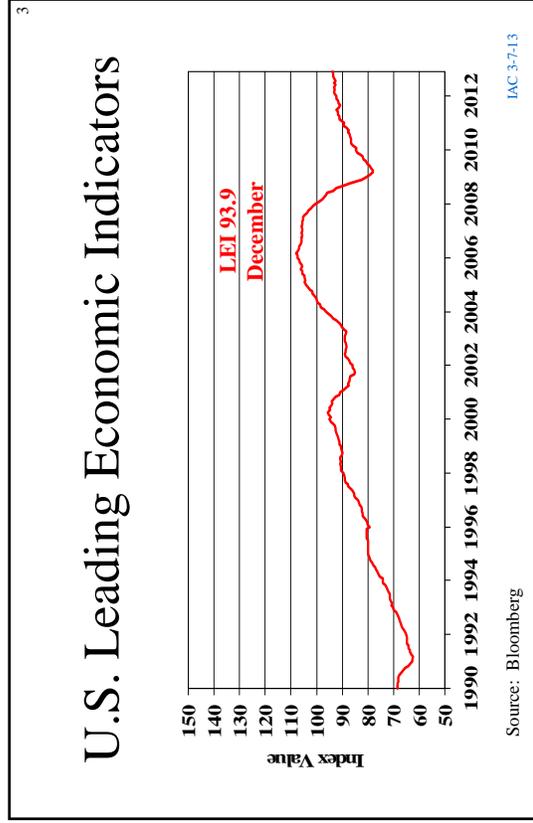
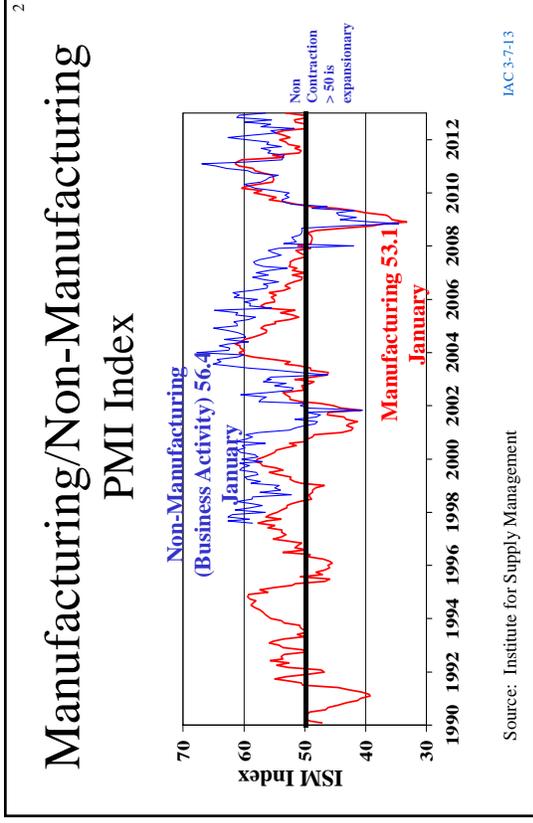
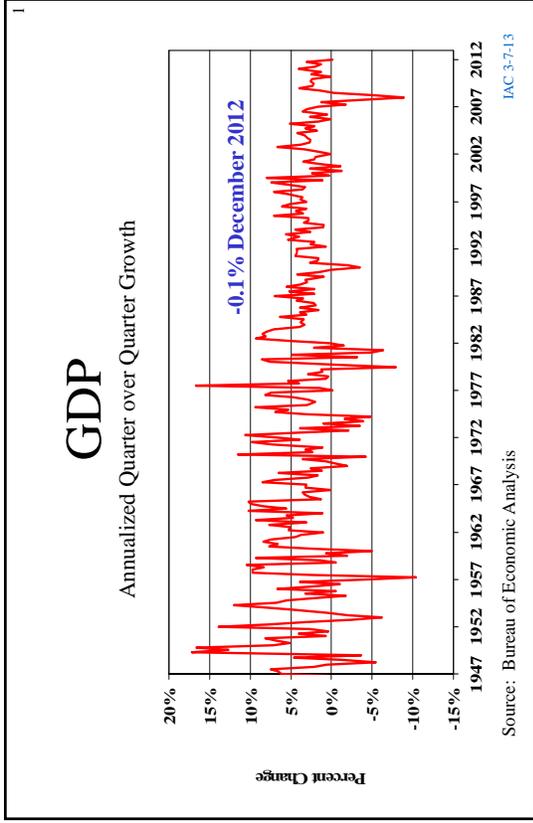
| <b>Real GDP Growth Actual/Forecasts</b> | <b><u>2010</u></b> | <b><u>2011</u></b> | <b><u>2012</u></b> | <b><u>2013</u></b> | <b><u>2014</u></b> |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|
| World                                   | 4.0%               | 2.9%               | 2.2%               | 2.4%               | 3.2%               |
| U.S.                                    | 2.4%               | 1.8%               | 2.2%               | 2.0%               | 2.8%               |
| Developed (G10)                         | 2.6%               | 1.4%               | 1.3%               | 1.2%               | 2.0%               |
| Asia                                    | 9.3%               | 7.6%               | 6.6%               | 6.7%               | 6.9%               |
| EMEA                                    | 4.8%               | 4.8%               | 2.7%               | 2.9%               | 3.7%               |
| Europe                                  | 2.2%               | 1.5%               | -0.2%              | 0.2%               | 1.3%               |
| Latin America                           | 6.4%               | 4.2%               | 2.7%               | 3.6%               | 4.0%               |
| China                                   | 10.4%              | 9.3%               | 7.8%               | 8.1%               | 8.0%               |

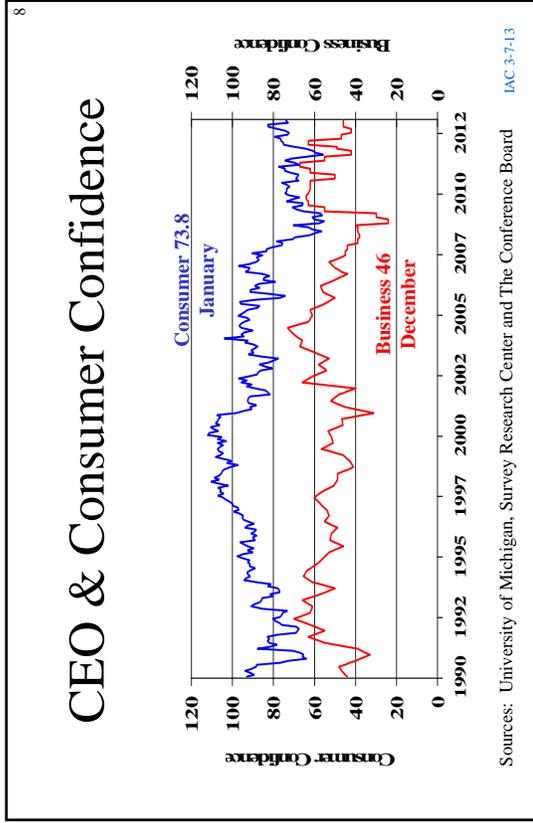
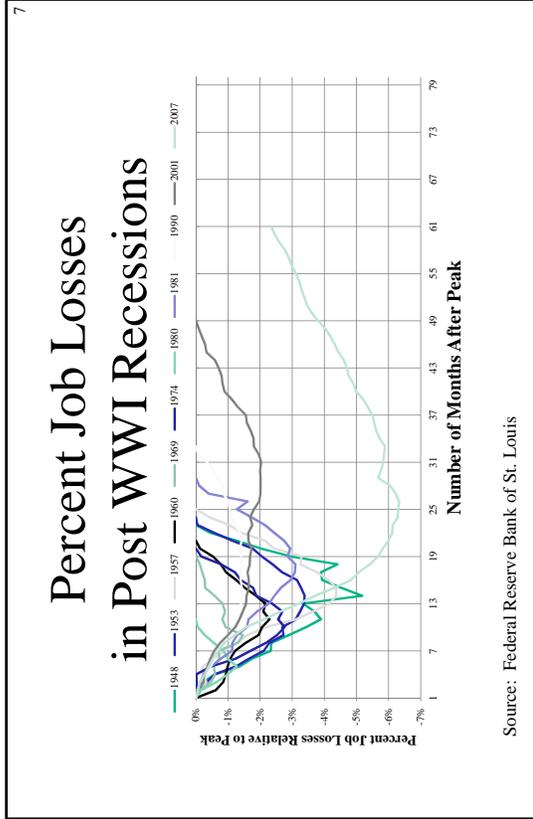
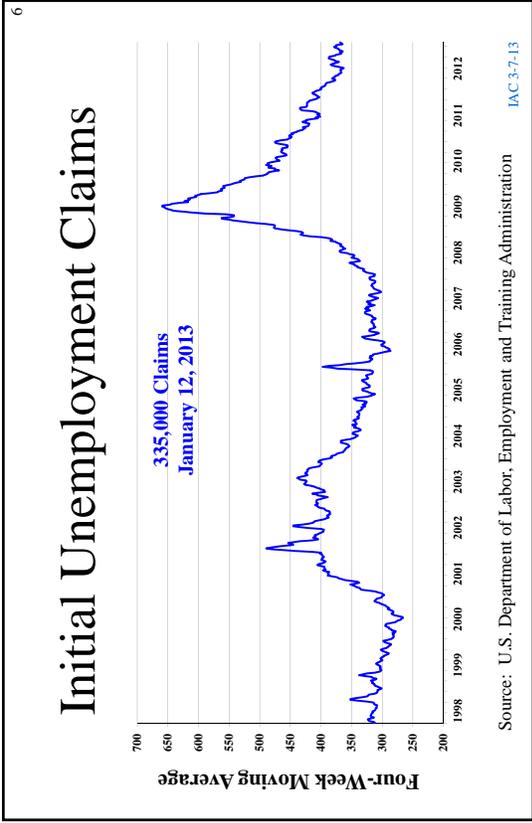
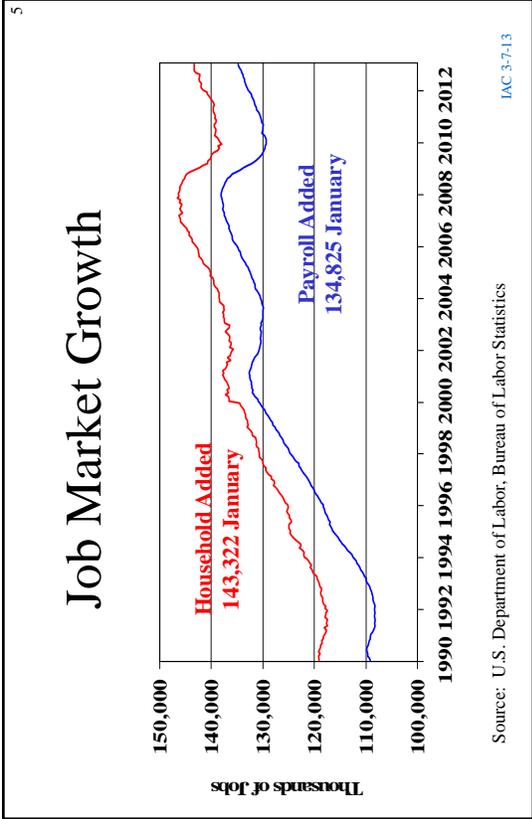
\*Source: Bloomberg

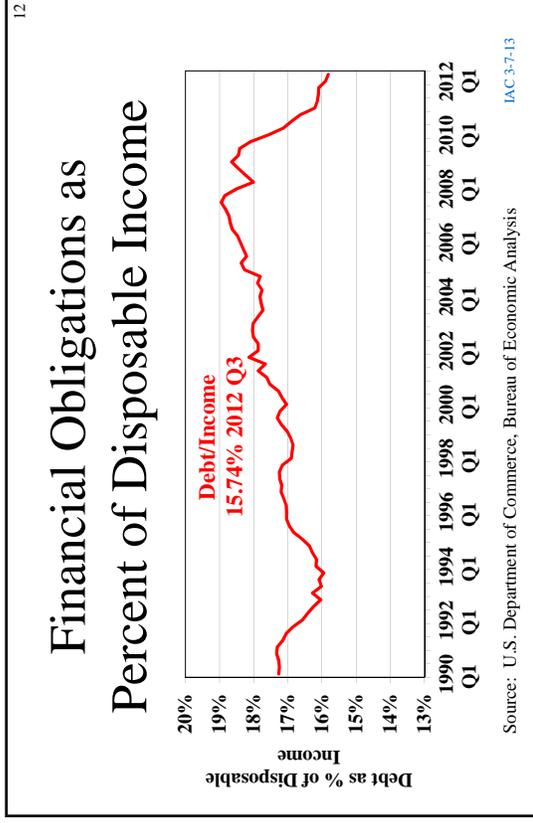
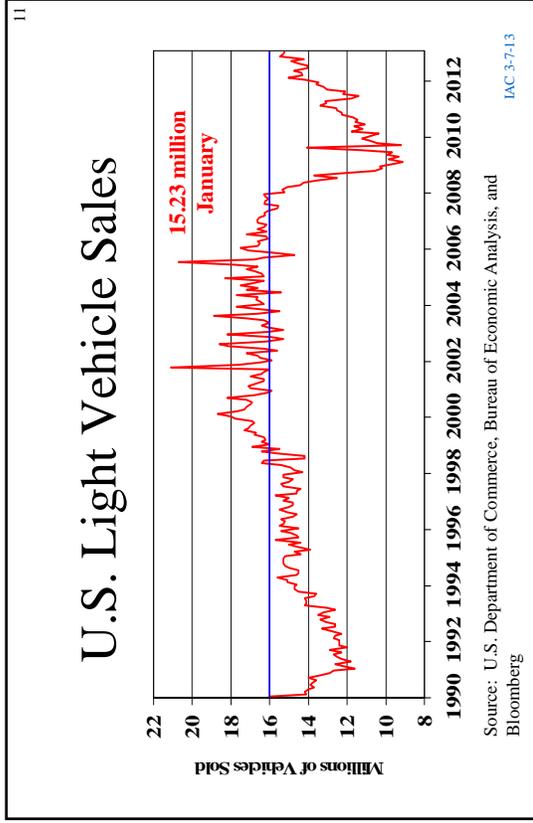
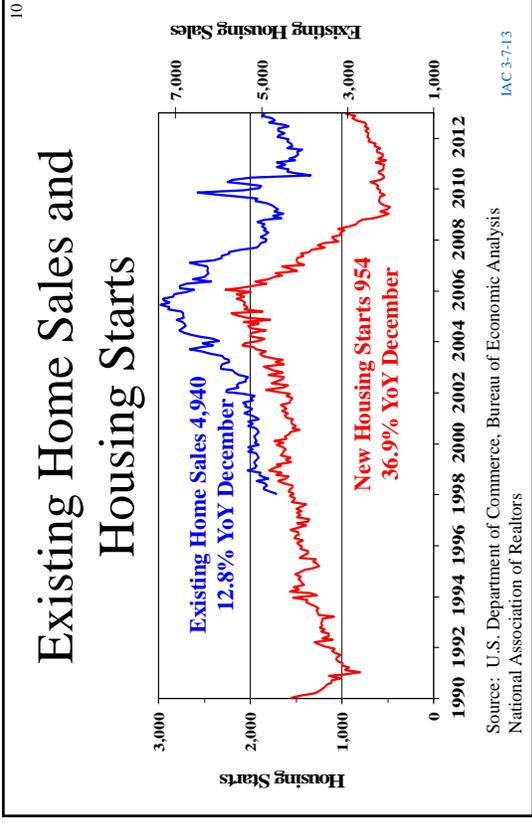
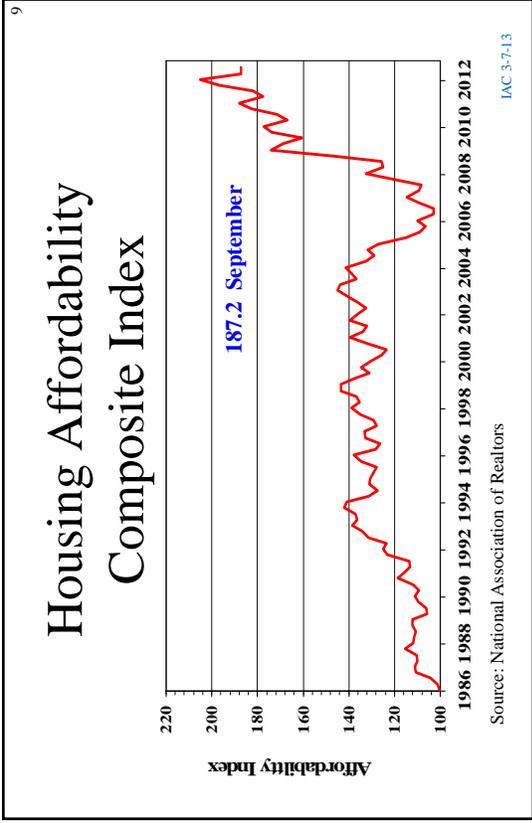
## Economic Overview

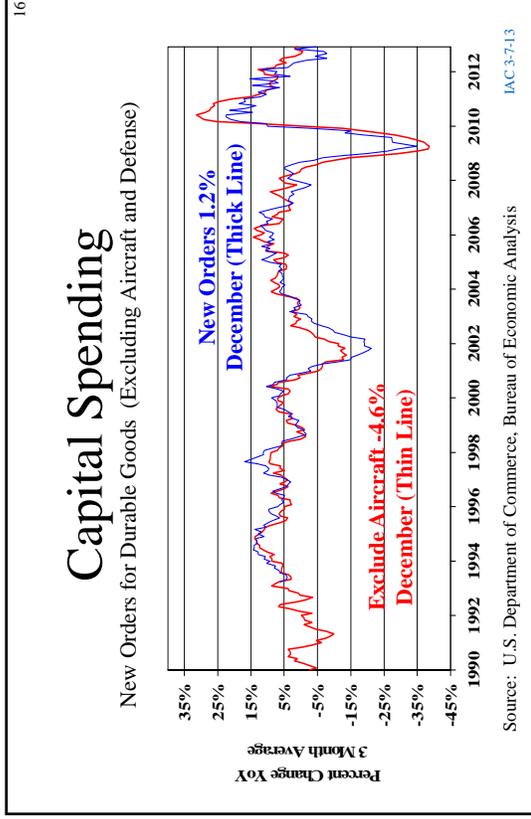
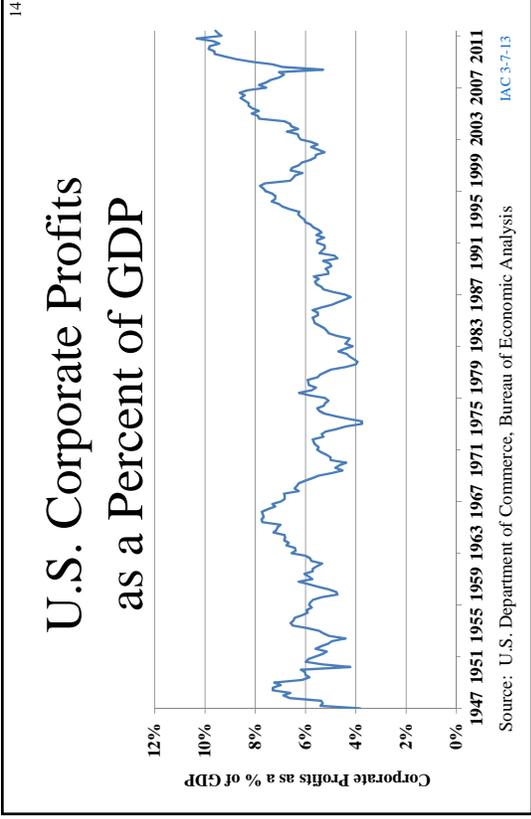
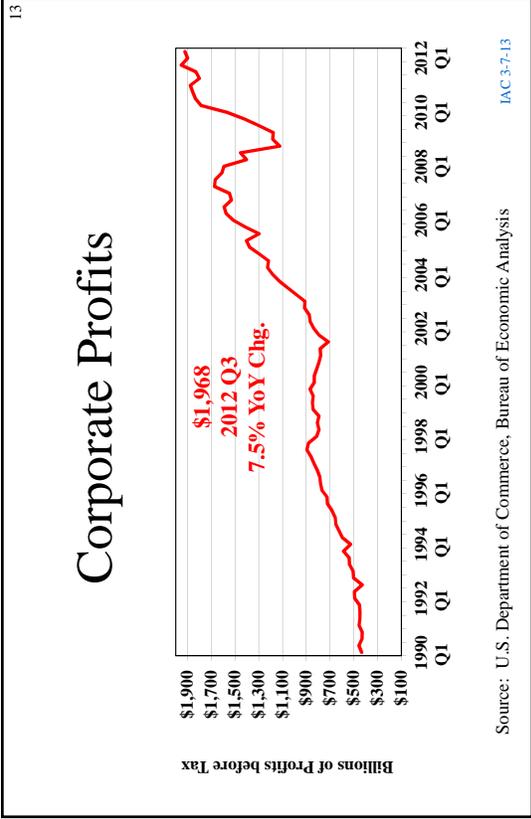
*Not much growth now, some later.*

- At the end of January, the latest reading of U.S. GDP growth was -0.1%. However, some economists believe that the true health of the economy is much better. At the end of October, hurricane Sandy hit the eastern seaboard causing an estimated damage of \$63 billion, the second costliest hurricane on record. In late December and early January 2013, the U.S. Legislature finally addressed the “Fiscal Cliff”. The buildup to the December 31 deadline is believed to have slowed the economy due to the uncertainty of the resolution.
- Coincidental economic indicators such as the Institute for Supply Management’s Manufacturing and Non-Manufacturing PMI Indexes are both above 50, indicating that there is some, if modest current expansion in the U.S. economy.
- The relationship between the year-over-year growth in FedEx Express Total U.S. Package shipments and the next year’s Real GDP year-over-year growth is provocative. Taken at face value, the relationship would predict further real GDP contraction in 2013.
- Jobs and Employment. The unemployment rate at the end of December was 7.8%, down from 8.5% one year prior. According to the January reports, the economy is adding about 140,000 jobs per month. Given that there are approximately 3.2 million fewer jobs today than at the peak in 2008, at this rate jobs will not be fully recovered until early 2015.
- The worst of the housing market appears to be in the past and that it will no longer be a drag on GDP growth. New housing starts ended the year at a 4-year high, increasing 37% over the year while existing home sales are up 11%. House values (as measured by the S&P / Case-Shiller Index) increased by 5.5% over the last year.
- As a function of lower house prices and very low interest rates, housing has never been as affordable as it is now according to a measure used by the National Association of Realtors.
- Annualized after-tax profits and margins hit an all-time high in the fourth quarter of 2011 at over \$1.6 trillion and 10.3% respectively. The most recent quarter’s profits are \$68 billion lower.
- An important driver to the increase in margins is globalization of trade. Not unrelated to globalization, wages growth has not kept pace with profit growth. Today the disparity between corporate profits and wages is the largest on record going back to the 1940s.











**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**ALTERNATIVE INVESTMENTS  
REVIEW**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**MARCH 7, 2013**



**Peter A. Woodford, Administrator  
Alternative Investments Division**



## EXECUTIVE SUMMARY

### General Overview

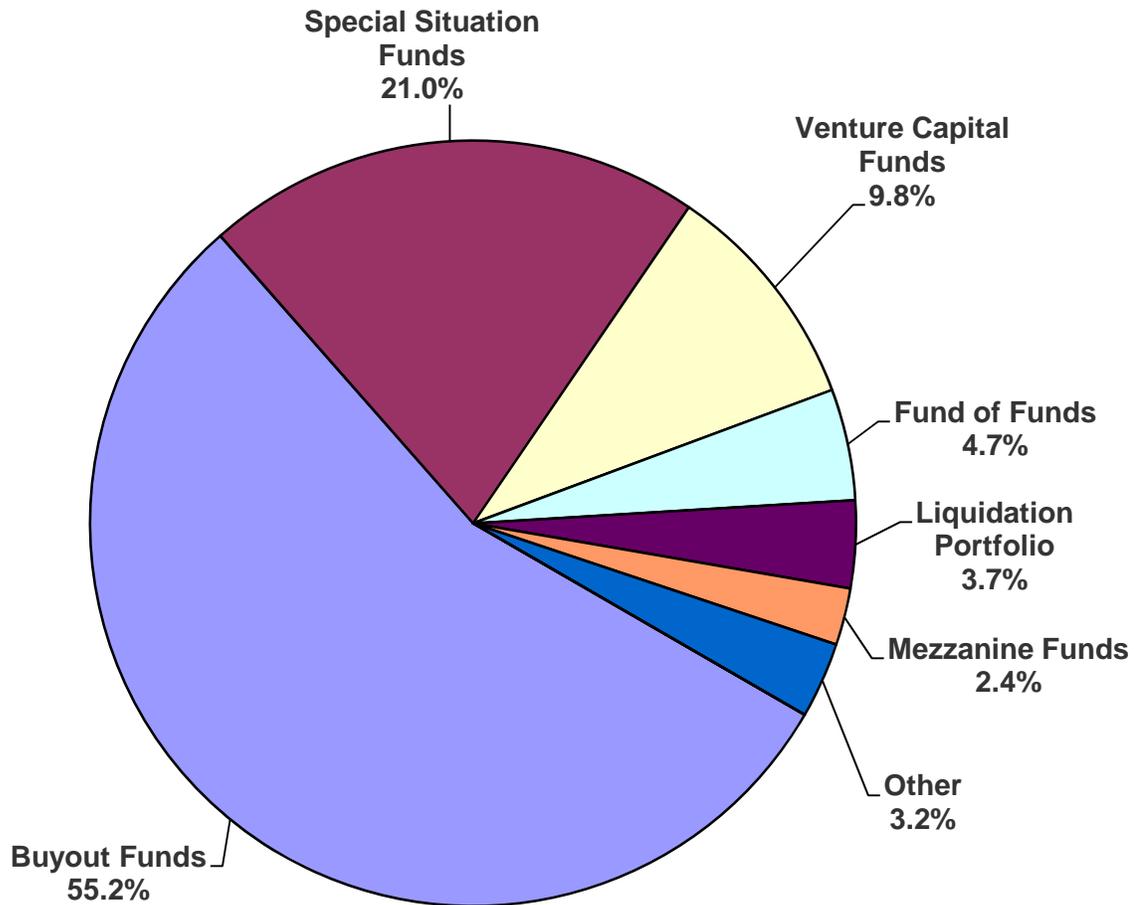
- In a world awash with central bank liquidity, the search for yield continues to be the dominant theme for 2013. This, coupled with anemic U.S. GDP growth, economic contraction in Europe, increased regulation, violence in the Middle-East, and a change in China's leadership, create significant uncertainty for investment decisions.
- The European debt crisis and continued pressure on the U.S. economy weighed on the M&A market in 2012, despite action by the Federal Reserve, European Central Bank, and the Central Bank of China to stimulate growth. Although M&A activity improved significantly in the first quarter of 2013, global private equity backed M&A activity was flat in 2012. Deal volume for the energy and power sector fell year-over-year, but deal volume for both the industrial and financial sectors improved.
- The use of initial public offerings by U.S. sponsors slowed as well. The first half of the year got off to a reasonable start with 24 portfolio companies going public, but the IPO market chilled noticeably in the second half of the year, following Facebook's debut on June 20.
- In the secondary market, pricing remained stable. The average high first round bid for buyout funds was 84% of NAV in the second half of 2012, while the average high bid for venture funds declined slightly to 70% of NAV. Secondary market volume for 2012 was \$25 billion, matching the record volume in 2011.
- In 2012, about 1,250 GP's hit the fundraising trail, with a combined target of almost \$700 billion. A large portion of this resurgence is driven by a small handful of mega-funds back in the market. Estimates suggest that both numbers could be higher in 2013. With yields low and investors risk-averse, credit funds are in fashion again, echoing the trend in 2009. Several factors will undermine GP's ability to raise funds in the coming year. Many of the larger LP's are restructuring their portfolios, refocusing on core relationships and reducing the number of relationships in their portfolios. While fundraising momentum is stronger than it has been in years, the competition for money remains fierce, keeping leverage over terms and conditions squarely with the LP's.
- InvestMichigan Update: The SMRS originally committed \$330 million to the program. In 2012, the SMRS committed an additional \$180 million to MGCP II. The program has invested approximately \$226 million across 40 deals. Although the program is still actively investing, there have been five realizations and one dividend recap.

InvestMichigan Mezzanine Fund: Formed in partnership with the SBA to target investment opportunities in lower middle market Michigan companies, the \$130 million mezzanine fund was capitalized with \$80 million from the SBA, \$20 million from InvestMichigan and \$30 million from other investors.

- New commitments: Silver Lake Partners IV, \$50 million. Silver Lake invests across the broad value chain and sub-verticals of the technology industry, from semiconductors, cloud computing, and IT infrastructure to tech-enabled financial markets, transaction processing, mobile communications, and e-commerce.



# SMRS Alternative Investments 12/31/12



| <b>Market Value in Millions</b> |                 |               |                 |               |
|---------------------------------|-----------------|---------------|-----------------|---------------|
|                                 | <u>12/31/12</u> |               | <u>9/30/12</u>  |               |
| Buyout Funds                    | \$5,815         | 55.2%         | \$5,710         | 54.0%         |
| Special Situation Funds         | 2,208           | 21.0%         | 2,192           | 20.7%         |
| Venture Capital Funds           | 1,029           | 9.8%          | 1,124           | 10.6%         |
| Fund of Funds                   | 502             | 4.7%          | 517             | 4.9%          |
| Liquidation Portfolio           | 387             | 3.7%          | 417             | 4.0%          |
| Mezzanine Funds                 | 250             | 2.4%          | 266             | 2.5%          |
| Other                           | 342             | 3.2%          | 349             | 3.3%          |
| <b>Total</b>                    | <b>\$10,533</b> | <b>100.0%</b> | <b>\$10,575</b> | <b>100.0%</b> |



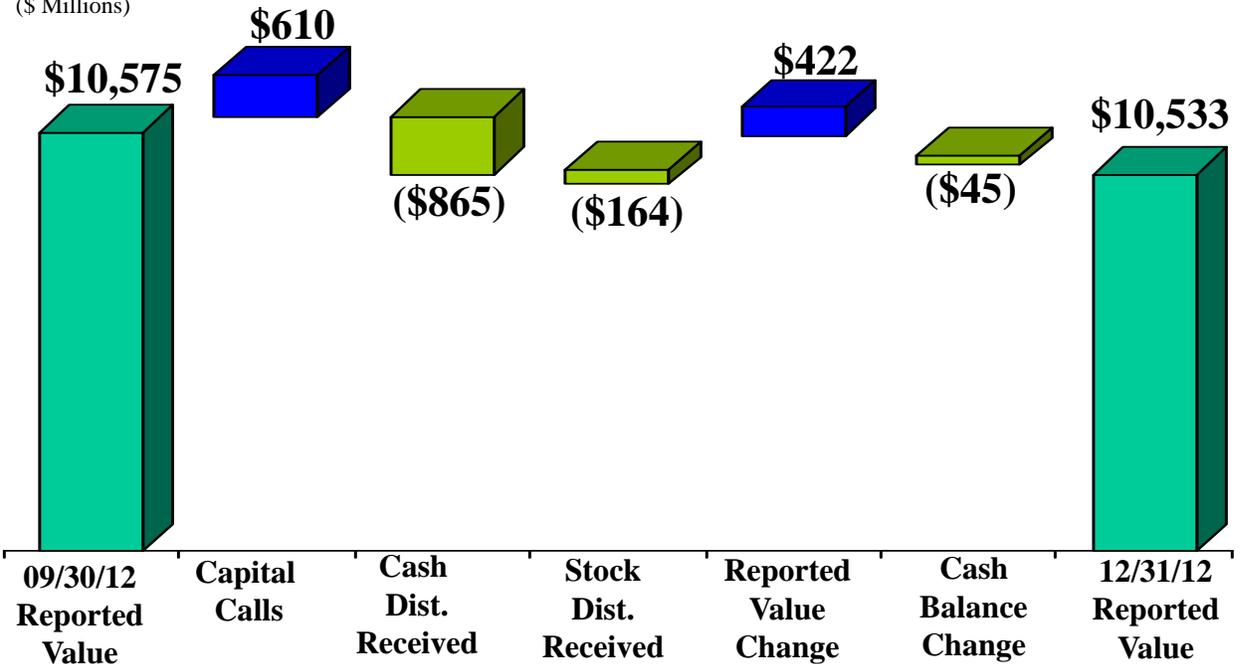
# SMRS

## Alternative Investments

### 12/31/12

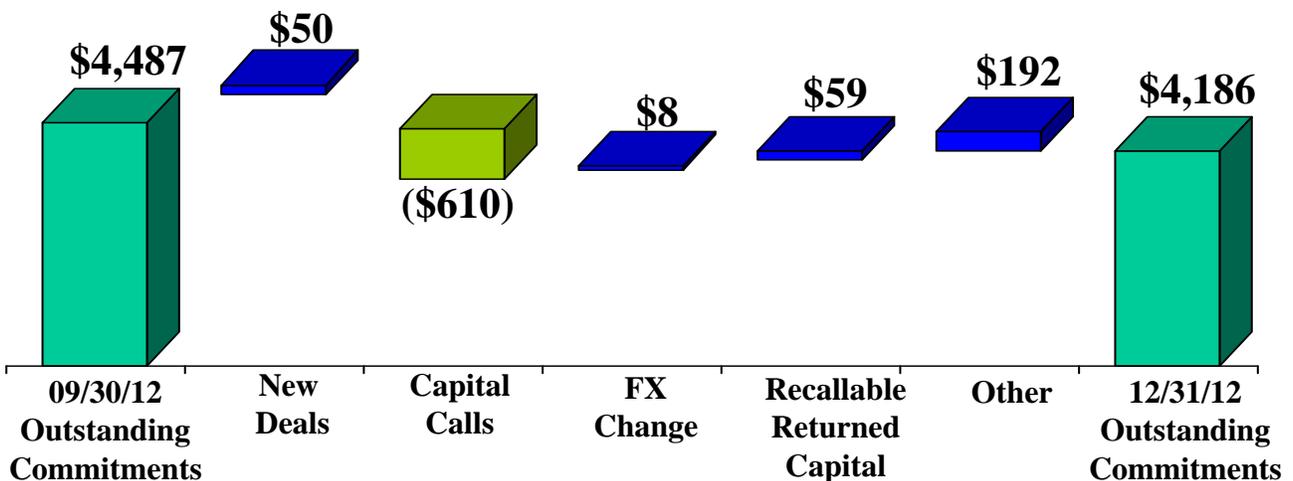
#### Invested Commitments

(\$ Millions)



#### Outstanding Commitments

(\$ Millions)





# SMRS

## Alternative Investments

### 12/31/12

|                          |
|--------------------------|
| <b>Portfolio Profile</b> |
|--------------------------|

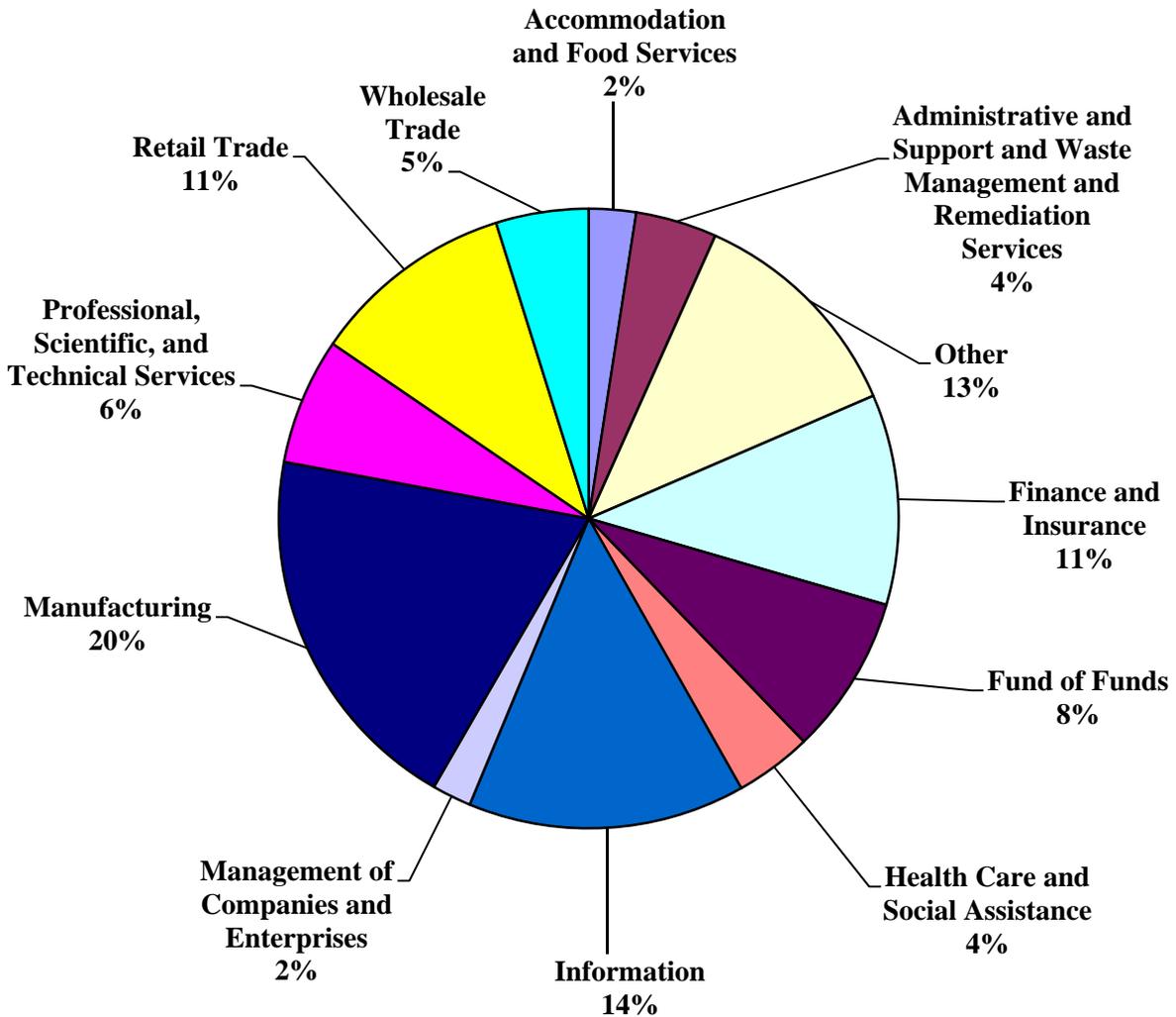
(\$ Millions)

| <u>Asset Type</u>                     | <u>Reported Value</u> | <u>Outstanding Commitment</u> | <u>Total Exposure</u> |
|---------------------------------------|-----------------------|-------------------------------|-----------------------|
| Buyout                                | \$ 5,815              | \$ 2,518                      | \$ 8,333              |
| Venture Capital                       | 1,029                 | 252                           | 1,281                 |
| Special Situations                    | 2,106                 | 922                           | 3,028                 |
| Fund of Funds                         | 502                   | 207                           | 709                   |
| Hedge Funds - Equity                  | 5                     | -                             | 5                     |
| Liquidation Portfolio                 | 387                   | 37                            | 424                   |
| Active Small Cap - Stock Dist         | 92                    | -                             | 92                    |
| <b>Total Alternative Equities</b>     | <b>\$ 9,936</b>       | <b>\$ 3,936</b>               | <b>\$ 13,872</b>      |
|                                       |                       |                               |                       |
| Mezzanine Debt                        | \$ 250                | \$ 229                        | \$ 479                |
| Special Situations                    | 101                   | 21                            | 122                   |
| Hedge Funds - Fixed Income            | 106                   | -                             | 106                   |
| Cash                                  | 140                   | -                             | 140                   |
| <b>Total Alternative Fixed Income</b> | <b>\$ 597</b>         | <b>\$ 250</b>                 | <b>\$ 847</b>         |
|                                       |                       |                               |                       |
| <b>Total Alternative Investments</b>  | <b>\$ 10,533</b>      | <b>\$ 4,186</b>               | <b>\$ 14,719</b>      |



# SMRS Alternative Investments 12/31/12

## Investments by Industry

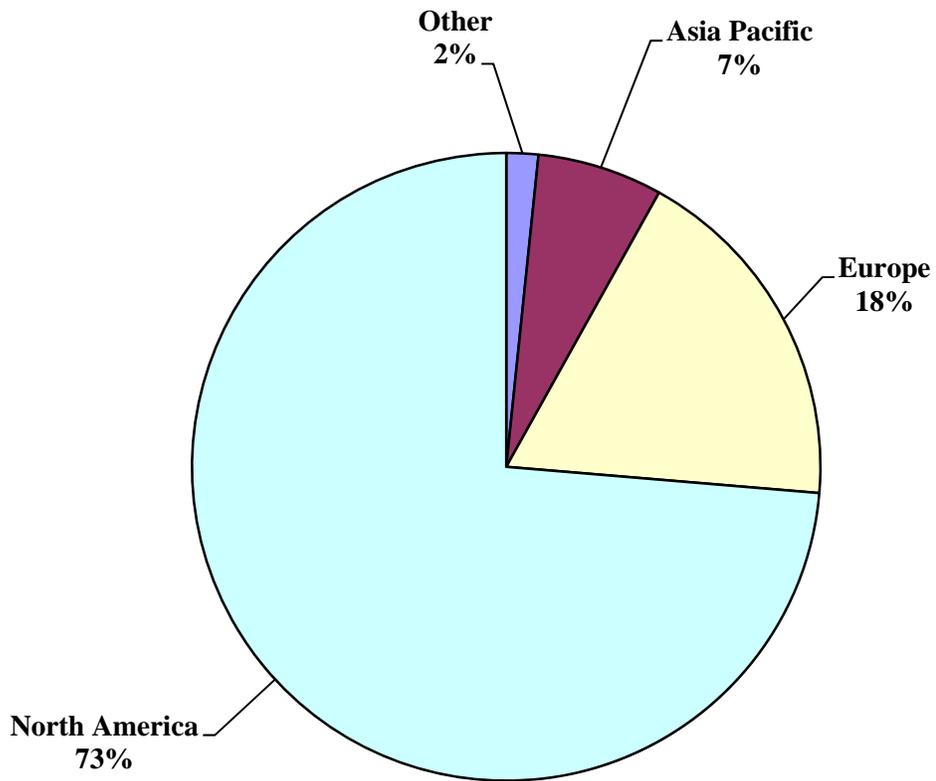


These numbers are based on the most recent available General Partner Data; primarily 09/30/12 and are subject to change.



# SMRS Alternative Investments 12/31/12

## Investments by Region



These numbers are based on the most recent available General Partner Data; primarily 09/30/12 and are subject to change.

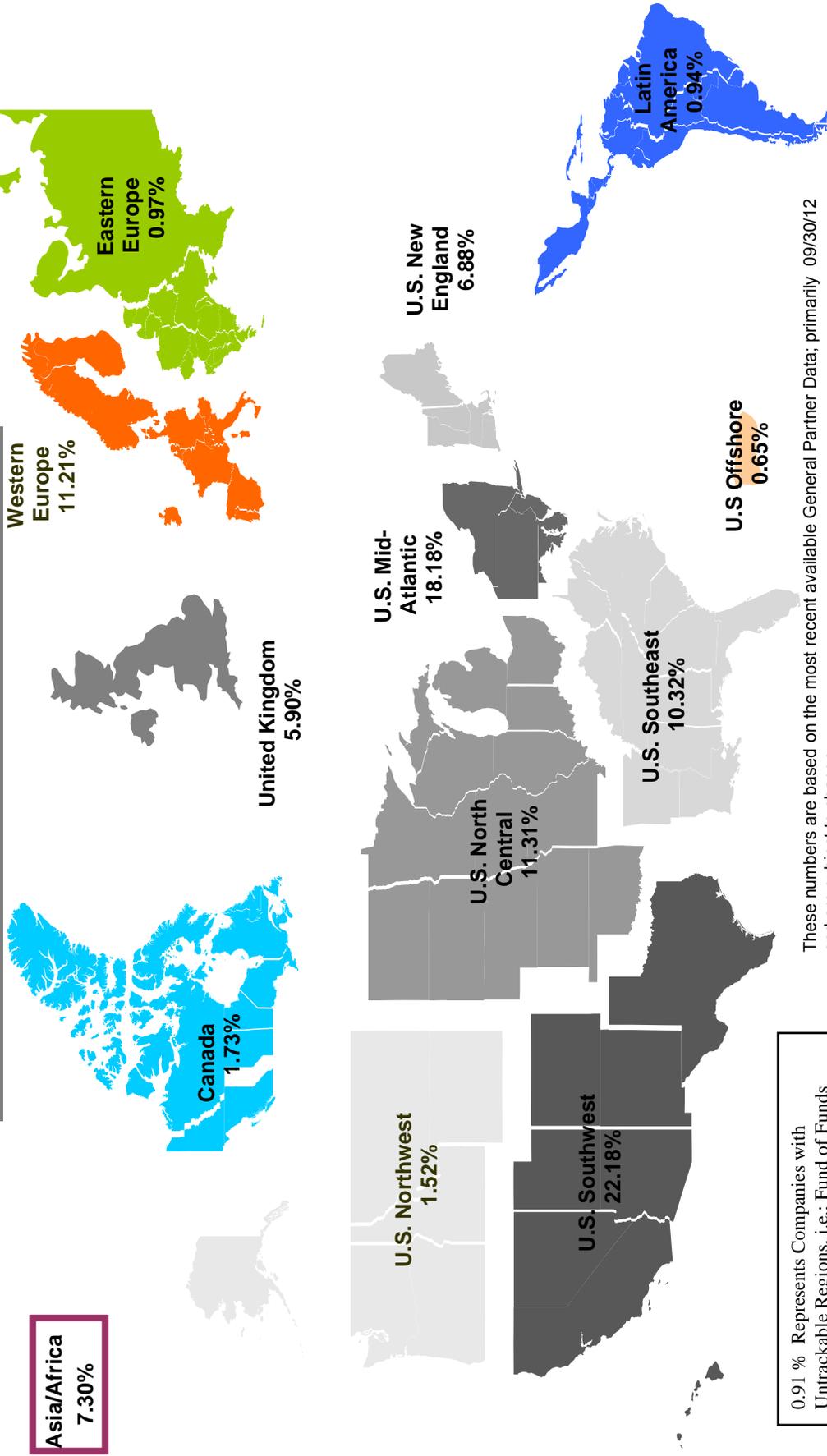


# SMRS

## Alternative Investments

12/31/12

### Investments by Region



0.91 % Represents Companies with Untrackable Regions, i.e.; Fund of Funds

These numbers are based on the most recent available General Partner Data; primarily 09/30/12 and are subject to change.



# SMRS

## Alternative Investments

### 12/31/12

#### Portfolio by Asset Strategy

| (\$ Millions)                         | <u>Reported</u>  | <u>Outstanding</u> | <u>Total</u>     | <u>Percent</u> |
|---------------------------------------|------------------|--------------------|------------------|----------------|
| <u>Investment Fund Types</u>          | <u>Value</u>     | <u>Commitment</u>  |                  |                |
| Large Buyout                          | \$ 3,558         | \$ 1,611           | \$ 5,169         | 35%            |
| Small Middle Market Buyout            | 2,257            | 907                | 3,164            | 21%            |
| <b>Buyout Total</b>                   | <b>\$ 5,815</b>  | <b>\$ 2,518</b>    | <b>\$ 8,333</b>  | <b>56%</b>     |
| Early Stage Venture Capital           | \$ 421           | \$ 108             | \$ 529           | 4%             |
| Late-Stage Venture Capital            | 150              | 73                 | 223              | 1%             |
| Multi-Stage Venture Capital           | 458              | 71                 | 529              | 4%             |
| <b>Venture Capital Total</b>          | <b>\$ 1,029</b>  | <b>\$ 252</b>      | <b>\$ 1,281</b>  | <b>9%</b>      |
| Co-Investment Funds                   | \$ 455           | \$ 15              | \$ 470           | 3%             |
| Global Opportunity Funds              | 689              | 36                 | 725              | 5%             |
| Secondary Funds                       | 176              | 137                | 313              | 2%             |
| Distressed                            | 329              | 188                | 517              | 3%             |
| Special Situations                    | 457              | 546                | 1,003            | 7%             |
| Natural Resources                     | -                | -                  | -                | 0%             |
| <b>Special Situations Total</b>       | <b>\$ 2,106</b>  | <b>\$ 922</b>      | <b>\$ 3,028</b>  | <b>20%</b>     |
| <b>Fund of Funds</b>                  | <b>\$ 502</b>    | <b>\$ 207</b>      | <b>\$ 709</b>    | <b>5%</b>      |
| <b>Hedge Funds – Equity</b>           | <b>\$ 5</b>      | <b>\$ -</b>        | <b>\$ 5</b>      | <b>0%</b>      |
| <b>Liquidation Portfolio</b>          | <b>\$ 387</b>    | <b>\$ 37</b>       | <b>\$ 424</b>    | <b>3%</b>      |
| <b>Active Small Cap - Stock Dist.</b> | <b>\$ 92</b>     | <b>\$ -</b>        | <b>\$ 92</b>     | <b>1%</b>      |
| <b>Total Alternative Equities</b>     | <b>\$ 9,936</b>  | <b>\$ 3,936</b>    | <b>\$ 13,872</b> | <b>94%</b>     |
| <b>Mezzanine Debt</b>                 | <b>\$ 250</b>    | <b>\$ 229</b>      | <b>\$ 479</b>    | <b>3%</b>      |
| <b>Special Situations</b>             | <b>101</b>       | <b>21</b>          | <b>122</b>       | <b>1%</b>      |
| <b>Hedge Funds – Fixed Income</b>     | <b>106</b>       | <b>-</b>           | <b>106</b>       | <b>1%</b>      |
| <b>Cash</b>                           | <b>140</b>       | <b>-</b>           | <b>140</b>       | <b>1%</b>      |
| <b>Total Alternative Fixed Income</b> | <b>\$ 597</b>    | <b>\$ 250</b>      | <b>\$ 847</b>    | <b>6%</b>      |
| <b>Total Alternative Investments</b>  | <b>\$ 10,533</b> | <b>\$ 4,186</b>    | <b>\$ 14,719</b> | <b>100%</b>    |



# SMRS

## Alternative Investments

### 12/31/12

|                        |
|------------------------|
| <b>Top 10 Sponsors</b> |
|------------------------|

(\$ Millions)

| <u>Asset Type</u>           | <u>Reported Value</u>  | <u>Outstanding Commitment</u> | <u>Total</u>           |
|-----------------------------|------------------------|-------------------------------|------------------------|
| Kohlberg Kravis & Roberts   | \$ 764                 | \$ 302                        | \$ 1,066               |
| Credit Suisse Group         | 811                    | 198                           | 1,009                  |
| Carlyle Group               | 482                    | 332                           | 814                    |
| Warburg Pincus Capital      | 618                    | 163                           | 781                    |
| Blackstone Capital Partners | 423                    | 293                           | 716                    |
| Glencoe Capital             | 583                    | 71                            | 654                    |
| Advent International        | 369                    | 192                           | 561                    |
| TPG Group                   | 414                    | 134                           | 548                    |
| Green Equity Investors      | 375                    | 149                           | 524                    |
| Apax Partners, Inc.         | 308                    | 109                           | 417                    |
| <b>Top 10 Total Value</b>   | <b><u>\$ 5,147</u></b> | <b><u>\$ 1,943</u></b>        | <b><u>\$ 7,090</u></b> |

|                                       |
|---------------------------------------|
| <b>Cash Weighted Rates of Return*</b> |
|---------------------------------------|

| <u>(Net IRR)</u>   | <u>Current Qtr.</u> | <u>1 Year</u> | <u>3 Year</u> | <u>5 Year</u> | <u>10 Year</u> |
|--------------------|---------------------|---------------|---------------|---------------|----------------|
| Buyout             | 5.39%               | 15.04%        | 16.56%        | 5.88%         | 17.56%         |
| Venture Capital    | -1.33%              | 8.30%         | 17.27%        | 7.22%         | 7.71%          |
| Special Situations | 5.67%               | 15.78%        | 15.04%        | 4.48%         | 9.76%          |
| Fund of Funds      | 3.53%               | 8.39%         | 12.13%        | 4.91%         | 8.97%          |
| Hedge Funds        | 1.76%               | 7.83%         | 4.75%         | 0.19%         | 4.86%          |
| Mezzanine Debt     | 2.42%               | 16.10%        | 24.71%        | 13.21%        | 12.14%         |

\*These numbers are based on most recent available General Partner reported data; primarily 09/30/12 and are subject to change.



# SMRS

## Alternative Investments

### 12/31/12

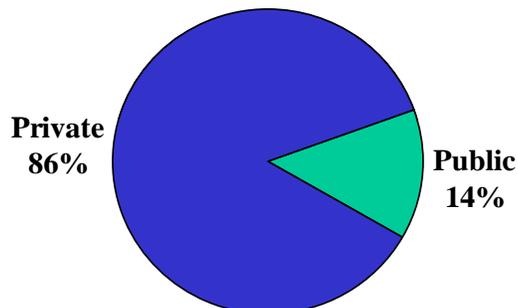
#### Portfolio by Vintage Year

(\$ Millions)

| <u>Asset Vintage</u>        | <u>Reported Value</u> | <u>Outstanding Commitment</u> | <u>Total Exposure</u> |
|-----------------------------|-----------------------|-------------------------------|-----------------------|
| 1986-93                     | \$ 1                  | \$ 1                          | \$ 2                  |
| 1994                        | 1                     | -                             | 1                     |
| 1995                        | 2                     | 1                             | 3                     |
| 1996                        | -                     | 2                             | 2                     |
| 1997                        | 9                     | 11                            | 20                    |
| 1998                        | 64                    | 21                            | 85                    |
| 1999                        | 143                   | 60                            | 203                   |
| 2000                        | 229                   | 56                            | 285                   |
| 2001                        | 392                   | 54                            | 446                   |
| 2002                        | 781                   | 27                            | 808                   |
| 2003                        | 266                   | 23                            | 289                   |
| 2004                        | 491                   | 61                            | 552                   |
| 2005                        | 1,120                 | 115                           | 1,235                 |
| 2006*                       | 2,992                 | 535                           | 3,527                 |
| 2007                        | 1,642                 | 334                           | 1,976                 |
| 2008                        | 1,543                 | 775                           | 2,318                 |
| 2009                        | 158                   | 54                            | 212                   |
| 2010                        | 144                   | 149                           | 293                   |
| 2011                        | 158                   | 542                           | 700                   |
| 2012                        | 165                   | 1,365                         | 1,530                 |
| Cash                        | 140                   | -                             | 140                   |
| Act. Small Cap - Stock Dist | 92                    | -                             | 92                    |
| <b>Total</b>                | <b>\$ 10,533</b>      | <b>\$ 4,186</b>               | <b>\$ 14,719</b>      |

\* Liquidation portfolio is 2006 vintage

#### Public/Private Exposure





# SMRS

## Alternative Investments

### 12/31/12

|                                |
|--------------------------------|
| <b>Summary of Transactions</b> |
|--------------------------------|

(\$ Millions)

| <u>Month</u>                 | <u>Capital<br/>Calls*</u> | <u>Distributions<br/>Received</u> | <u>Net Cash<br/>Flow</u> |
|------------------------------|---------------------------|-----------------------------------|--------------------------|
| January 2012                 | \$89                      | \$89                              | \$0                      |
| February                     | 95                        | 134                               | 39                       |
| March                        | <u>121</u>                | <u>245</u>                        | <u>124</u>               |
| <b>Total Quarter</b>         | <b>\$305</b>              | <b>\$468</b>                      | <b>\$163</b>             |
| April 2012                   | \$65                      | \$190                             | \$125                    |
| May                          | 79                        | 250                               | 171                      |
| June                         | <u>98</u>                 | <u>227</u>                        | <u>129</u>               |
| <b>Total Quarter</b>         | <b>\$242</b>              | <b>\$667</b>                      | <b>\$425</b>             |
| July 2012                    | \$156                     | \$157                             | \$1                      |
| August                       | 128                       | 269                               | 141                      |
| September                    | <u>135</u>                | <u>283</u>                        | <u>148</u>               |
| <b>Total Quarter</b>         | <b>\$419</b>              | <b>\$709</b>                      | <b>\$290</b>             |
| October 2012                 | \$112                     | \$202                             | \$90                     |
| November                     | 199                       | 348                               | 149                      |
| December                     | <u>303</u>                | <u>479</u>                        | <u>176</u>               |
| <b>Total Quarter</b>         | <b>\$614</b>              | <b>\$1,029</b>                    | <b>\$415</b>             |
| <b>Trailing Twelve Month</b> | <b><u>\$1,580</u></b>     | <b><u>\$2,873</u></b>             | <b><u>\$1,293</u></b>    |

\* Includes Fees and Expenses Paid Outside of Commitment

|                    |
|--------------------|
| <b>FX Exposure</b> |
|--------------------|

|                       | <b>Reported<br/>Value</b> | <b>Oustanding<br/>Commitment</b> | <b>Total<br/>Exposure</b> | <b>Total<br/>(USD)</b> |
|-----------------------|---------------------------|----------------------------------|---------------------------|------------------------|
| Euro (\$1.318399/ €)  | €854                      | €234                             | €1,088                    | 1,434                  |
| Pound (\$1.625499/ £) | £8                        | £3                               | £11                       | 18                     |
| Yen (\$0.011565/ ¥)   | ¥0                        | ¥0                               | ¥0                        | 0                      |



# SMRS

## Alternative Investments

### 12/31/12

#### Net Market Values by Ownership Entity

|   | 12/31/12 | ARV         | Unfunded<br>Commitment |
|---|----------|-------------|------------------------|
| Accel Europe I, L.P.                        | \$       | 16,515,017  | \$ 1                   |
| Accel Europe II                             |          | 24,387,806  | 3,300,000              |
| Accel Growth Fund II, L.P.                  |          | 5,463,123   | 6,300,000              |
| Accel IX, L.P.                              |          | 1,126,948   | 3,000,000              |
| Accel VI, L.P.                              |          | 3,165,001   | -                      |
| Accel VII, L.P.                             |          | 2,626,590   | 5,000,000              |
| Accel VIII, L.P.                            |          | 3,958,058   | 4,782,499              |
| Accel VI-S                                  |          | 5,036,963   | 652,611                |
| Accel X, L.P.                               |          | 15,318,634  | 2,050,000              |
| Accel XI, L.P.                              |          | 2,316,981   | 5,600,000              |
| Advent Global Private Equity III            |          | 356,026     | 20                     |
| Advent Global Private Equity IV             |          | 1,553,229   | -                      |
| Advent Global Private Equity V              |          | 111,297,138 | 10,500,000             |
| Advent International GPE VI-A LP            |          | 226,054,770 | 11,499,980             |
| Advent International GPE VII-B, L.P.        |          | 29,528,100  | 169,700,000            |
| Affinity Asia Pacific Fund II, L.P.         |          | 246,998     | 5,288,237              |
| Affinity Asia Pacific Fund III, L.P.        |          | 195,193,163 | 32,452,428             |
| APA Excelsior IV, L.P.                      |          | 823,080     | -                      |
| APA Excelsior V                             |          | 404,919     | 545,625                |
| Apax Europe Fund VI                         |          | 84,495,323  | 243,028                |
| Apax Europe V, L.P.                         |          | 8,860,124   | -                      |
| Apax Europe VII, L.P.                       |          | 152,062,842 | 12,206,409             |
| Apax Excelsior VI                           |          | 9,765,375   | 1,614,434              |
| Apax US VII                                 |          | 45,091,513  | 491,302                |
| Apax VIII - A, L.P.                         |          | 6,000,000   | 94,000,000             |
| Arboretum Ventures II                       |          | 3,373,527   | 1,315,096              |
| Arboretum Ventures III, L.P.                |          | 4,951,085   | 9,495,000              |
| Ares Corporate Opportunities Fund II        |          | 43,674,539  | 12,510,099             |
| Ares Corporate Opportunities Fund III, LP   |          | 79,515,767  | 18,143,798             |
| Ares Corporate Opportunities Fund IV, L.P.  |          | 3,397,074   | 96,602,926             |
| ARGUS Capital Partners                      |          | 142,743     | 2,813,672              |
| Austin Ventures VIII, L.P.                  |          | 16,036,435  | -                      |
| Avenue International Ltd                    |          | 105,543,411 | -                      |
| Avenue Special Situations Fund IV, L.P.     |          | 2,948,966   | -                      |
| Avenue Special Situations Fund V, L.P.      |          | 9,028,865   | -                      |
| Avenue Special Situations Fund VI (B), L.P. |          | 47,384,008  | 4,645,568              |
| Axiom Asia Private Capital Fund III, L.P.   |          | 1,057,749   | 33,942,251             |
| Banc Fund VI                                |          | 19,758,059  | -                      |
| Banc Fund VII                               |          | 27,222,664  | -                      |
| Banc Fund VIII                              |          | 14,900,031  | 6,800,000              |
| Battery Ventures V, L.P.                    |          | 66,150      | -                      |
| Battery Ventures VI, L.P.                   |          | 6,182,301   | -                      |
| Battery Ventures VII, L.P.                  |          | 9,228,532   | 755,556                |
| Battery Ventures VIII                       |          | 27,974,434  | 701,800                |

## Net Market Values by Ownership Entity

12/31/12

|  | ARV         | Unfunded<br>Commitment |
|--|-------------|------------------------|
| BC European Capital IX                       | 31,893,503  | 64,601,289             |
| BC European Capital VII, L.P.                | 2,726,091   | -                      |
| BC European Capital VIII, L.P.               | 161,301,373 | 15,464,820             |
| Berkshire Fund IV, L.P.                      | 1           | 1,898,016              |
| Berkshire Fund V, L.P.                       | 782,795     | 1,900,578              |
| Berkshire Fund VI, L.P.                      | 45,072,153  | 5,408,231              |
| Berkshire Fund VII, L.P.                     | 112,647,675 | 19,192,400             |
| Berkshire Fund VIII, L.P.                    | 16,846,863  | 106,391,170            |
| Blackstone Capital Partners IV               | 111,667,376 | 5,902,857              |
| Blackstone Capital Partners V                | 220,084,094 | 22,549,793             |
| Blackstone Capital Partners VI, LP           | 66,970,482  | 241,282,974            |
| Blackstone Capital Partners V-S              | 20,601,630  | 712,401                |
| Blackstone Mezzanine Partners                | 2,738,860   | 14,141,621             |
| Blackstone Partners III, L.P.                | 990,423     | 8,094,960              |
| Bridgepoint Europe IV                        | 48,084,997  | 25,364,274             |
| Brockway Moran & Partners Fund III           | 11,177,817  | 4,663,780              |
| Carlyle Asia Fund                            | 10,336,746  | 5,278,440              |
| Carlyle Europe Partners                      | 116,710     | 447,451                |
| Carlyle Europe Partners II                   | 29,788,711  | 4,893,711              |
| Carlyle Europe Partners III                  | 88,387,943  | 34,259,179             |
| Carlyle Partners II, L.P.                    | 856,071     | -                      |
| Carlyle Partners III, L.P.                   | 500,024     | 14,184,834             |
| Carlyle Partners IV, L.P.                    | 141,890,844 | 15,675,670             |
| Carlyle Partners V L.P.                      | 210,235,224 | 82,705,968             |
| Carlyle Partners VI, L.P.                    | -           | 175,000,000            |
| Castle Harlan Partners IV                    | 12,857,344  | 5,647,298              |
| Castle Harlan Partners V                     | 25,212,568  | 48,882,345             |
| CCMP Capital Investors II                    | 139,840,860 | 15,580,377             |
| Clarus Life Sciences II, L.P.                | 20,236,736  | 18,190,000             |
| Clarus Lifesciences I                        | 27,726,990  | 4,079,460              |
| Clearstone Venture Partners (idealab)        | 133,202     | -                      |
| Clearstone Venture Partners II (idealab)     | 3,907,800   | -                      |
| Clearstone Venture Partners III              | 23,491,008  | 1,612,000              |
| CMEA Ventures VI                             | 12,305,148  | 2,450,000              |
| CMEA Ventures VII, L.P.                      | 20,277,401  | 9,600,000              |
| Coller International Partners III, L.P.      | 1,330,242   | 2,400,000              |
| Coller International Partners IV             | 25,473,239  | 14,000,000             |
| Coller International Partners V, L.P.        | 121,223,255 | 43,600,000             |
| Coller International Partners VI, L.P.       | 28,036,878  | 76,853,288             |
| Crescent Mezzanine Partners VI, L.P.         | 11,903,414  | 59,836,081             |
| CSFB Fund Co-Investment Program              | 113,889     | 241,260                |
| CSG / DLJ Fund Program II                    | 109,721,055 | 21,346,564             |
| CSG Fund Investment Program III - 2004       | 110,082,235 | 11,353,327             |
| CSG Fund Investment Program III - 2006       | 108,286,233 | 37,072,188             |
| CSG Fund Investment Program V, L.P.          | 62,233,638  | 56,142,999             |
| CSG Fund Investment Program VI, L.P.         | 1,000,000   | 34,000,000             |
| CSG Seasoned Primary Fund Investment Program | 387,012,202 | 36,682,299             |
| DLJ Fund Investment Program I                | 32,151,134  | 1,745,861              |

## Net Market Values by Ownership Entity

12/31/12

|   | ARV         | Unfunded<br>Commitment |
|---|-------------|------------------------|
| DLJ Investment Partners II                      | 979,559     | 9,910,342              |
| DLJ Investment Partners III                     | 30,456,089  | 81,295,924             |
| DLJ Merchant Banking Partners III, L.P.         | 18,873,874  | 3,001,140              |
| DLJ Merchant Banking Ptrs II, L.P.              | 1,693,950   | 1,856,746              |
| Doughty Hanson & Co IV                          | 120,477,775 | 3,161,074              |
| Doughty Hanson & Co V                           | 109,092,283 | 40,250,118             |
| Doughty Hanson Co. III L.P.                     | 5,386,575   | 3,102,822              |
| EDF Ventures III                                | 4,834,165   | 251,088                |
| Energy Investors III                            | 1           | -                      |
| Essex Woodlands Health IV                       | 2,752,084   | -                      |
| Essex Woodlands Health V                        | 9,345,964   | -                      |
| Essex Woodlands Health Ventures Fund VIII       | 50,022,001  | 22,125,000             |
| Essex Woodlands Health VI                       | 13,912,055  | 1,312,500              |
| Essex Woodlands Health VII                      | 55,644,798  | 4,000,000              |
| FirstMark Capital Fund II (fka: Pequot PEFII)   | 1,801,061   | -                      |
| FirstMark Capital III (fka: Pequot PEFIII)      | 10,709,844  | 272,000                |
| FirstMark Capital IV (fka: Pequot PEFIV)        | 37,777,850  | 3,961,386              |
| Flagship Ventures Fund 2004                     | 20,036,132  | -                      |
| Flagship Ventures Fund 2007, L.P.               | 48,570,674  | 3,675,000              |
| Flagship Ventures Fund IV, L.P.                 | 6,659,942   | 9,525,000              |
| Fox Paine Capital Fund II, LP                   | 20,355,135  | 16,292,867             |
| Frontenac VIII                                  | 6,164,461   | 1,800,000              |
| Glencoe Capital Michigan Opportunities Fund, LP | 109,734,652 | 49,720,108             |
| Glencoe Capital Partners II                     | 8,527,056   | 355,381                |
| Glencoe Capital Partners III                    | 10,059,986  | 6,206,254              |
| Glencoe Stockwell Fund                          | 330,772,648 | -                      |
| Glencoe Stockwell Fund II, L.P.                 | 124,067,210 | 14,623,984             |
| Globespan Capital Partners IV (Jafco)           | 16,163,453  | 625,000                |
| Globespan Capital Partners V, LP                | 82,779,727  | 9,375,000              |
| Green Equity Investors III                      | 9,302,830   | 9,112,215              |
| Green Equity Investors IV                       | 96,520,610  | 1,136,036              |
| Green Equity Investors V                        | 257,960,957 | 25,751,077             |
| Green Equity Investors VI, L.P.                 | 11,337,518  | 113,344,821            |
| Grotech Partners V                              | 194,274     | -                      |
| Grotech Partners VI                             | 12,685,096  | -                      |
| GSO Capital Opportunities Fund II, L.P.         | 8,170,491   | 32,869,019             |
| H.I.G. Bayside Debt & LBO Fund II, LP           | 10,151,524  | 9,993,557              |
| H.I.G. Brightpoint Capital Partners II          | 4,667,289   | -                      |
| H.I.G. Capital Partners IV, L.P.                | 20,818,326  | 4,874,167              |
| H.I.G. Europe Capital Partners L.P.             | 24,581,876  | 9,099,147              |
| HarbourVest Int'l II Partnership                | 24,651      | 799,999                |
| HarbourVest Int'l III Direct                    | 5,094,423   | 1,000,000              |
| HarbourVest Int'l III Partnership               | 6,848,943   | 1,200,000              |
| HarbourVest IV Partnership Fund LP              | 224,045     | 600,000                |
| HarbourVest Partners V - Direct Fund LP         | 220,479     | -                      |
| HarbourVest V Partnership                       | 1,586,539   | 300,000                |
| HarbourVest VI - Direct Fund LP                 | 7,080,387   | 750,000                |
| HarbourVest VI Partnership                      | 35,153,908  | 2,500,000              |

## Net Market Values by Ownership Entity

12/31/12

|   | ARV         | Unfunded<br>Commitment |
|---|-------------|------------------------|
| Healthcare Venture V                              | 1,183,215   | -                      |
| Healthcare Venture VI                             | 898,229     | -                      |
| Healthcare Venture VII                            | 5,122,020   | 487,500                |
| Healthcare Venture VIII                           | 20,961,939  | 9,100,000              |
| InterWest Partners IX                             | 12,586,234  | 3,200,000              |
| JAFCO America Technology Fund III                 | 1,455,377   | -                      |
| JP Morgan Chase 1998 Pool Participation Fund      | 3,327,115   | 1,604,605              |
| JP Morgan Chase 1999/2000 Pool Participation Fund | 3,281,797   | 4,017,243              |
| JP Morgan Partners Global Investors               | 34,142,116  | 3,185,897              |
| JPMorgan Global Investors Selldown                | 27,345,660  | 5,597,619              |
| Kelso Investment Associates VII                   | 79,548,397  | 4,970,176              |
| Kelso Investment Associates VIII                  | 97,467,309  | 39,831,682             |
| Khosla Ventures III, L.P.                         | 58,540,845  | 10,500,000             |
| Khosla Ventures IV, L.P.                          | 12,915,478  | 35,250,000             |
| KKR 1996 Fund                                     | 211,514     | -                      |
| KKR 1996 Secondary Fund                           | 26,242      | 10,841                 |
| KKR 2006 Fund, L.P.                               | 227,634,291 | 21,080,700             |
| KKR Asia  | 102,318,609 | 19,586,000             |
| KKR Asian Fund II, L.P.                           | -           | 50,000,000             |
| KKR China Growth Fund                             | 22,235,339  | 31,761,000             |
| KKR E2 Investors (Annex) Fund                     | 13,185,756  | 18,145,079             |
| KKR European Fund II                              | 114,335,006 | -                      |
| KKR European Fund III                             | 81,571,753  | 47,741,921             |
| KKR European Fund LP 1                            | 5,578,094   | 307,605                |
| KKR Millennium Fund                               | 185,752,356 | -                      |
| KKR North America Fund XI, L.P.                   | 11,509,238  | 113,490,762            |
| Lightspeed Venture Partners VI                    | 11,344,464  | 3,299,089              |
| Lightspeed Venture Partners VII                   | 33,979,014  | 2,260,436              |
| Lion Capital Fund I (HME II)                      | 2,211,597   | 13,354,925             |
| Lion Capital Fund II                              | 48,610,363  | 6,043,305              |
| Lion Capital Fund III, L.P.                       | 34,420,030  | 43,141,520             |
| Long Point Capital Fund                           | 20,187      | 41,415                 |
| Long Point Capital Fund II                        | 11,639,000  | 1,120,958              |
| Matlin Patterson Global Opportunities Partners    | 39,358      | -                      |
| MatlinPatterson Global Opportunities Partners II  | 3,158,725   | 92,719                 |
| MatlinPatterson Global Opportunities Partners III | 61,511,650  | 17,421,271             |
| Menlo Ventures IX, L.P.                           | 15,231,194  | -                      |
| Menlo Ventures VIII                               | 2,511,425   | -                      |
| Menlo Ventures X, L.P.                            | 23,266,314  | 6,000,000              |
| Menlo Ventures XI, L.P.                           | 7,462,858   | 12,000,000             |
| MeriTech Capital Partners II, L.P.                | 5,153,287   | 1,850,000              |
| Meritech Capital Partners III, L.P.               | 56,872,076  | 1,200,000              |
| Meritech Capital Partners IV, L.P.                | 8,435,070   | 11,400,000             |
| MeriTech Capital Partners, L.P.                   | 1,791,756   | 6,187,500              |
| Michigan Growth Capital Partners II, L.P.         | 11,747,213  | 168,252,787            |
| Michigan Growth Capital Partners, LP              | 170,523,658 | 39,021,715             |
| MPM BioVentures III                               | 6,580,268   | -                      |
| New Leaf Ventures II, L.P.                        | 21,456,209  | 9,275,000              |

## Net Market Values by Ownership Entity

12/31/12

|   | ARV         | Unfunded<br>Commitment |
|---|-------------|------------------------|
| Nordic Capital VI, L.P.                   | 42,475,077  | -                      |
| Nordic Capital VII                        | 59,360,363  | 14,422,665             |
| Nordic Capital VIII, L.P. (Alpha)         | -           | 52,735,960             |
| North Castle Partners III                 | 5,901,936   | 559,275                |
| NV Partners II                            | 614,808     | 479,147                |
| Oak Investment Partners X, L.P.           | 15,349,779  | -                      |
| Oak Investments Partners IX, L.P.         | 2,612,335   | -                      |
| OCM Opportunities Fund VII (B), L.P.      | 18,779,741  | 25,179,089             |
| OCM Opportunities Fund VII, L.P.          | 20,219,755  | -                      |
| OCM Opportunities Fund VIII B, L.P.       | 29,325,734  | 9,375,000              |
| OCM Opportunities Fund VIII, L.P.         | 39,613,593  | -                      |
| OCM Principal Opportunities Fund IV       | 40,243,220  | 5,002,377              |
| One Liberty Fund III                      | 887,437     | -                      |
| One Liberty Fund IV                       | 1,791,130   | -                      |
| One Liberty Ventures 2000                 | 13,416,615  | -                      |
| Paine & Partners Capital Fund III, LP     | 83,399,878  | 41,151,683             |
| Parthenon Investors II                    | 19,115,938  | 3,417,779              |
| Parthenon Investors III                   | 63,541,606  | 8,527,123              |
| Parthenon Investors IV, L.P.              | 1,620,962   | 37,709,343             |
| Peninsula Capital Fund III                | 3,691,767   | 1,400,000              |
| Peninsula Capital Fund IV                 | 16,670,897  | 2,201,026              |
| Permira Europe III LP                     | 5,969,887   | 336,192                |
| Permira Europe IV                         | 105,436,889 | 11,206,392             |
| Phoenix Equity Partners IV                | 13,374,194  | 4,701,481              |
| Primus Capital Fund IV                    | 7,291       | 500,000                |
| Primus Capital Fund V                     | 16,178,936  | 712,500                |
| Providence Equity Partners V, L.P.        | 60,704,697  | 13,275,855             |
| Providence Equity Partners VI, L.P.       | 270,076,108 | 32,279,856             |
| Questor Partners Fund II                  | 14,492,246  | 5,794,612              |
| RFE Investment Partners VII, LP           | 23,487,087  | 1,473,332              |
| RFE Investment Partners VIII, L.P.        | 5,950,982   | 23,328,059             |
| RFE IV Venture                            | 490,511     | -                      |
| RFE V Ventures                            | 45,672      | 397,091                |
| RFE VI Ventures                           | 852         | 3,211,623              |
| Riverside Micro Cap Fund I, LP            | 57,649,215  | 4,954,856              |
| Riverside Micro-Cap Fund II, L.P.         | 19,266,891  | 14,810,240             |
| Silver Lake Partners II                   | 16,354,819  | 3,531,586              |
| Silver Lake Partners III                  | 77,396,743  | 34,414,492             |
| <b>** Silver Lake Partners IV, L.P.</b>   | <b>-</b>    | <b>50,000,000</b>      |
| Sprout Capital IX                         | 2,355,142   | -                      |
| Sprout Capital VII                        | 216,130     | -                      |
| Sprout Capital VIII, L.P.                 | 120,876     | -                      |
| TCW Shared Op Fund III                    | 6,423,378   | -                      |
| TCW Shared Op Fund IV                     | 10,662,850  | 4,603,325              |
| TCW Shared Op Fund V                      | 34,084,791  | 11,993,475             |
| TCW/Crescent Mezzanine                    | 1           | -                      |
| TCW/Crescent Mezzanine II                 | 1           | -                      |
| TCW/Crescent Mezzanine Partners III, L.P. | 5,340,590   | 4,552,763              |

## Net Market Values by Ownership Entity

12/31/12

|   | ARV                      | Unfunded<br>Commitment  |
|---|--------------------------|-------------------------|
| TCW/Crescent Mezzanine Partners IV, L.P.  | 38,583,183               | 6,316,808               |
| TCW/Crescent Mezzanine Partners V, LLC    | 131,533,704              | 16,336,878              |
| The Huron Fund III, L.P.                  | 23,930,045               | 10,947,500              |
| The Shansby Group 4                       | 37,087,018               | 786,292                 |
| The Shansby Group 5 (TSG5)                | 105,189,715              | 14,766,383              |
| TPG IV (Texas Pacific Group IV)           | 26,156,813               | 3,676,952               |
| TPG Partners III, LP                      | 36,029,452               | 2,087,002               |
| TPG Partners VI, L.P.                     | 180,076,026              | 87,544,751              |
| TPG V (Texas Pacific Group V)             | 172,255,659              | 40,352,735              |
| TSG6, L.P.                                | 19,342,148               | 104,378,772             |
| Tullis - Dickerson Capital II             | 5,499,859                | -                       |
| Tullis - Dickerson Capital III            | 9,717,075                | -                       |
| Unitas Asia Opportunity Fund              | 223,229                  | -                       |
| Unitas Asia Opportunity Fund II           | 74,339,789               | 26,604,144              |
| Unitas Asia Opportunity Fund III          | 43,539,275               | 50,412,896              |
| Warburg Pincus Equity Partners, L.P.      | 11,027,539               | -                       |
| Warburg Pincus International Partners     | 32,737,923               | -                       |
| Warburg Pincus Private Equity IX          | 179,938,179              | -                       |
| Warburg Pincus Private Equity VIII, L.P.  | 61,995,634               | -                       |
| Warburg Pincus Private Equity X, L.P.     | 290,367,252              | 6,300,000               |
| Warburg Pincus Private Equity XI, L.P.    | 41,742,641               | 156,500,000             |
| Warburg Pincus Ventures Int'l             | 408,170                  | -                       |
| Weiss, Peck & Greer V (adm: Opus Capital) | 4,592,857                | 386,240                 |
| WestAm COREplus Private Equity QP         | 12,417,228               | 2,110,761               |
| WestAm Special Private Equity Partners    | 9,090,032                | 2,317,427               |
| Wind Point Partners III                   | 2,761,431                | -                       |
| Wind Point Partners IV                    | 1,806,877                | 1,541,518               |
| Wind Point Partners V, L.P.               | 13,684,744               | 455,013                 |
| Wind Point Partners VI                    | 38,484,706               | 8,589,358               |
| Wind Point Partners VII                   | 46,784,041               | 25,410,286              |
| <b>Total Alternative Investments *</b>    | <b>\$ 10,301,725,350</b> | <b>\$ 4,186,202,054</b> |
| Cash                                      | 115,376,826              | -                       |
| Active Small Cap Cash                     | 24,468,321               | -                       |
| Active Small Cap                          | 91,598,556               | -                       |
| <b>Grand Total</b>                        | <b>\$ 10,533,169,053</b> | <b>\$ 4,186,202,054</b> |

\* Total Alternative Investment amounts do not include Cash and Active Small Cap

\*\* New commitment made during quarter reported



**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**ABSOLUTE AND REAL RETURN REVIEW**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**MARCH 7, 2013**



**James L. Elkins, Administrator  
Short-Term Fixed Income, Absolute and Real Return Division**



# EXECUTIVE SUMMARY

## **Absolute Return**

### **Portfolio Performance**

- The portfolio outperformed the HFRI Fund of Funds Conservative Index by 79 basis points for the fourth quarter and 524 basis points for the year.

### **Strategy Overview**

- Arbitrage - Most event-driven managers generated gains during the year, with meaningful contributions from credit, equity, and merger arbitrage positions. European bank hybrid positions rebounded during the year to generate large gains. Fixed income arbitrage performed well throughout the year, with significant gains from opportunities in RMBS and corporate structured credit.
- Credit/Distressed - Distressed credit managers delivered gains during the year with contributions from the liquidation of Lehman Brothers, the restructuring of MGM studios, among others. RMBS and structured credit continued to perform well during the period, as home prices stabilized in several markets and the Fed continued its support.
- Long/Short Equity - Long positions in consumer-oriented technology companies benefitted from evolving customer preferences, media positions generated gains from broader content distribution, and industrial positions saw gains from switching from oil to lower cost natural gas as an input. Short positions detracted from performance during much of the year; however, managers continue to maintain their short exposures to companies that are losing market share or face significant cost pressures.
- During the quarter, Matlin Patterson Securitized Credit Fund was funded for \$25 million. The strategy is a liquid relative value approach targeting credit investments across the RMBS, CMBS, and ABS markets.

## **Real Return and Opportunistic**

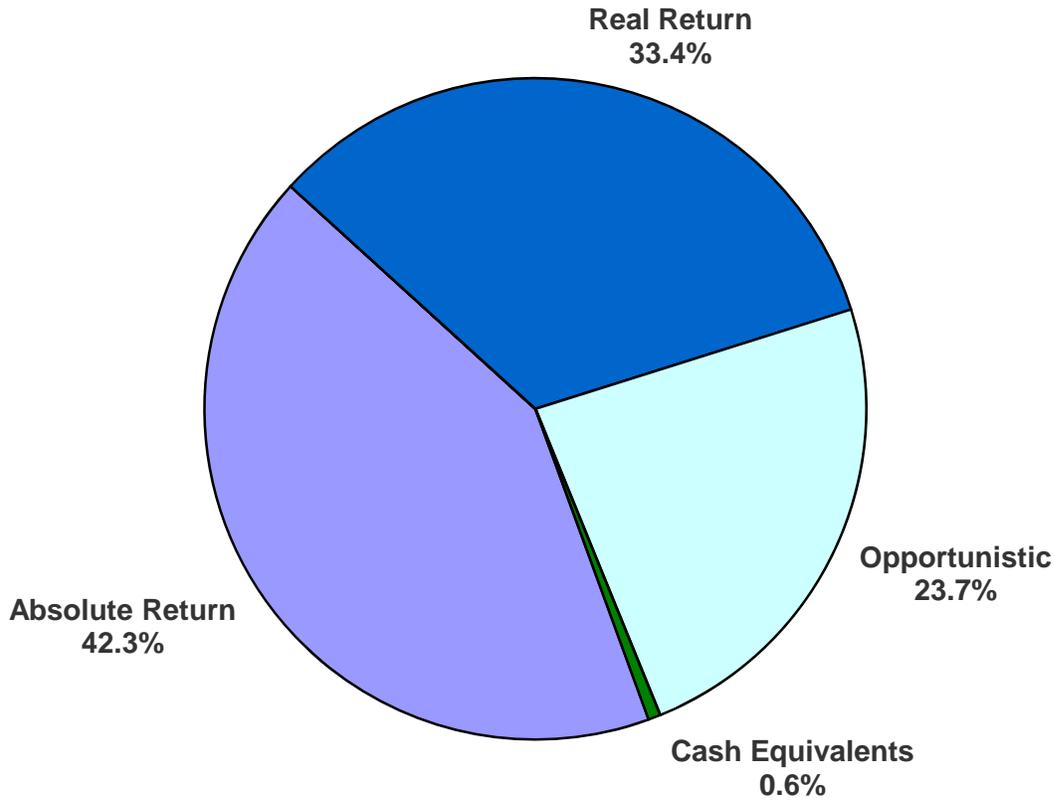
- The commodity portfolio outperformed the Dow Jones UBS Commodity Total Return Index by 58 basis points for the fourth quarter and 116 basis points for the year. The portfolio managers utilize various levels of backwardation enhancements which avoided negative roll yield that impacted several commodities during the period. On a commodity allocation basis, the portfolio outperformance was driven mainly by an underweight position in grains and natural gas, both of which experienced significant losses during the quarter.
- During the fourth quarter, a new commitment for \$75 million was made to Lakewater III, a separate account managed by Wood Creek Capital. The fund was created to invest in high quality wireless infrastructure assets.



# SMRS

## Absolute and Real Return

### 12/31/12



| <b>Market Value in Millions</b> |                 |               |                |               |
|---------------------------------|-----------------|---------------|----------------|---------------|
|                                 | <u>12/31/12</u> |               | <u>9/30/12</u> |               |
| Absolute Return                 | \$1,981         | 42.3%         | \$1,905        | 44.4%         |
| Real Return                     | 1,562           | 33.4%         | 1,332          | 31.1%         |
| Opportunistic                   | 1,112           | 23.7%         | 1,018          | 23.8%         |
| Cash Equivalents                | <u>30</u>       | <u>0.6%</u>   | <u>31</u>      | <u>0.7%</u>   |
| <b>Total Investments</b>        | <b>\$4,685</b>  | <b>100.0%</b> | <b>\$4,286</b> | <b>100.0%</b> |



# SMRS

## Absolute and Real Return

### 12/31/12

### Absolute Return Portfolio Summary

|                                      | <b>Net Market Value</b>       |
|--------------------------------------|-------------------------------|
| * Aetos - Sand Hill                  | \$1,069,330,588               |
| Apollo Credit Strategies Fund        | 121,591,184                   |
| Bain Absolute Return Capital         | 47,711,075                    |
| * Blackstone - Tahquamenon           | 306,794,656                   |
| Brevan Howard Multi-Strategy Fund    | 103,728,544                   |
| Elliott International                | 10,228,172                    |
| * EnTrust - White Pine               | 260,701,166                   |
| FrontPoint Multi-Strategy Fund       | 6,106,340                     |
| ** <b>MP Securitized Credit Fund</b> | <b>25,000,000</b>             |
| PSAM - Spartan Fund                  | 29,679,078                    |
| <b>Total Market Value</b>            | <b><u>\$1,980,870,803</u></b> |

\* Fund of Funds.

\*\* New commitment made during quarter reported.

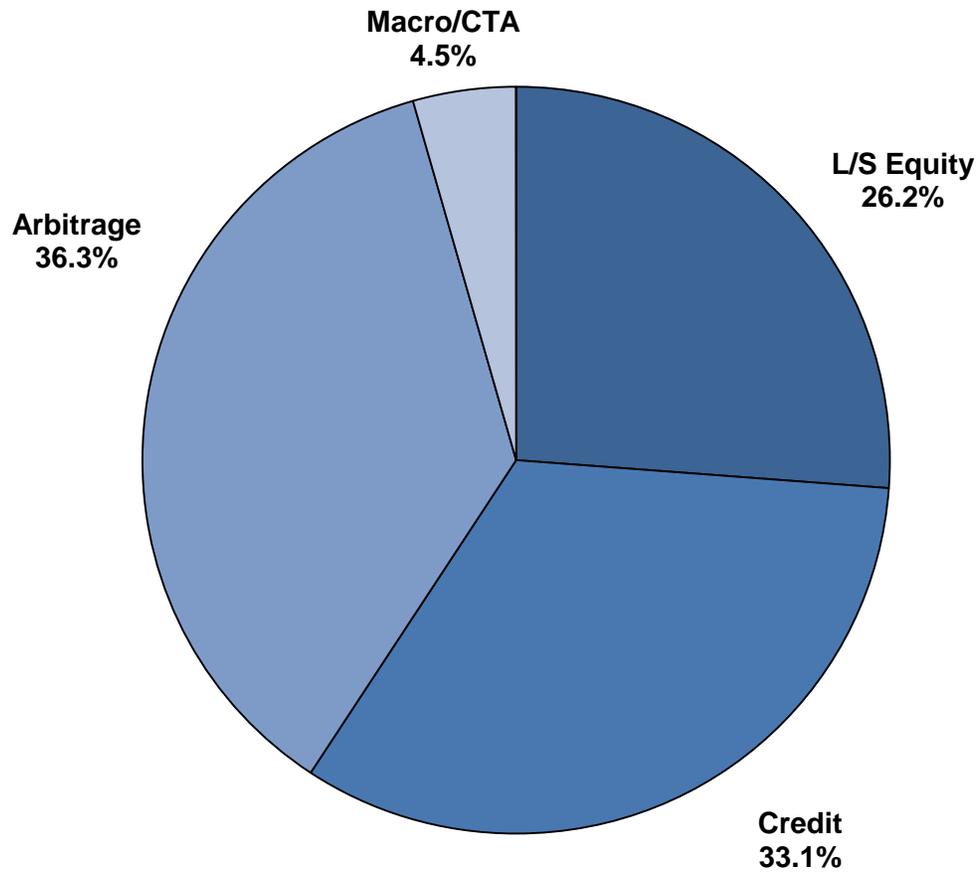


# SMRS

## Absolute and Real Return

### 12/31/12

#### Absolute Return Investments By Strategy



| Strategy Breakdown |     |                        |       |
|--------------------|-----|------------------------|-------|
| Underlying Funds:  | 105 | Median Position Size:  | 0.45% |
| Strategies:        | 4   | Average Position Size: | 0.95% |
| Relationships:     | 10  | Largest Position Size: | 6.24% |



# SMRS

## Absolute and Real Return

### 12/31/12

#### Real Return & Opportunistic Portfolio Summary

|  | <u>Net Market Value</u>       | <u>Unfunded<br/>Commitment</u> |
|--|-------------------------------|--------------------------------|
| Apollo Credit Fund                             | 259,901,156                   |                                |
| Apollo European Principal Finance Fund II      | 4,955,927                     | 43,893,307                     |
| Apollo Structured Credit Recovery Fund II      | 55,872,136                    |                                |
| Commodity Holdings                             | 362,641,776                   |                                |
| * Domain - Abernathy Fund I, LLC               | 280,697,003                   | 126,953,571                    |
| * Domain - Fairfield Settlement Partners, LLC  | 66,621,917                    | 52,688,843                     |
| * Domain - Social Network Holdings, LLC        | 553,324,320                   |                                |
| Emerald Co-invest                              | 30,777,752                    |                                |
| Energy Recapitalization and Restructuring Fund | 15,838,361                    | 106,771,191                    |
| Fortress MSR Opportunities                     | 100,000,000                   | 100,000,000                    |
| Galaxie Ave., LLC                              | 104,064,712                   |                                |
| Highbridge Principal Strategies - HPS III      | 61,399,101                    | 88,096,801                     |
| Hopen Life Sciences Fund II                    | 2,372,498                     | 7,300,000                      |
| HPS Senior Loan Fund II                        | 152,890,746                   |                                |
| JP Morgan Global Maritime Fund                 | 6,891,579                     | 105,503,200                    |
| KKR Lending Partners                           | 46,751,123                    | 55,439,056                     |
| Lakewater Fund I, LLC                          | 157,627,769                   | 26,263,707                     |
| Lakewater Fund II, LLC                         | 57,773,541                    | 198,698,503                    |
| ** <b>Lakewater Fund III, LLC</b>              | <b>75,000,000</b>             |                                |
| Red Kite Mining Fund                           | 26,564,362                    | 96,876,835                     |
| Renaissance Venture Cap Fund II                | 669,682                       | 24,250,000                     |
| SJC Direct Lending Fund I                      | 140,399,483                   |                                |
| SJC Direct Lending Fund II                     | 76,580,704                    | 191,782,356                    |
| <b>Total Market Value</b>                      | <b><u>\$2,639,615,648</u></b> | <b><u>\$1,097,563,799</u></b>  |

\* Fund of Funds.

\*\* New commitment made during quarter reported.



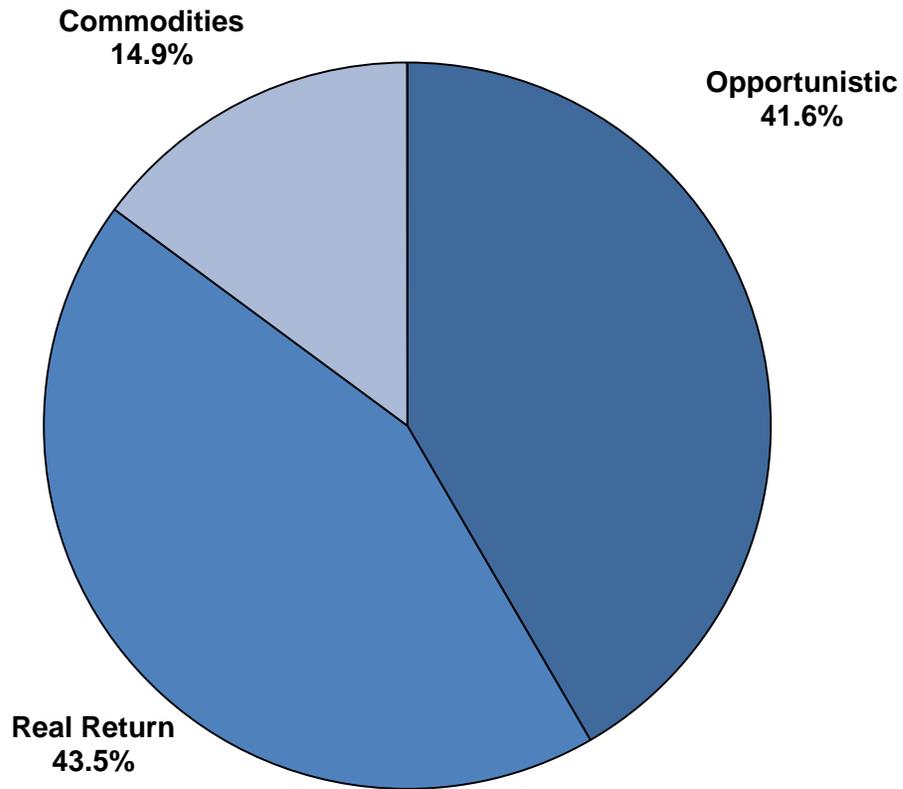
# SMRS

## Absolute and Real Return

### 12/31/12

### Real Return & Opportunistic Portfolio

#### Investments By Strategy



| Investment Strategy |                 |
|---------------------|-----------------|
| Commodities:        | \$397,641,776   |
| Opportunistic:      | \$1,112,706,059 |
| Real Return:        | \$1,164,267,813 |

**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**FIXED INCOME REVIEW**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**MARCH 7, 2013**



**Paul R. Nelson II, CFA, Administrator  
Long-Term Fixed Income Division**



## EXECUTIVE SUMMARY

### Performance

| <u>MPSERS Plan</u>     | <u>1-Year</u> | <u>3-Years</u> | <u>5-Years</u> | <u>7-Years</u> | <u>10-Years</u> |
|------------------------|---------------|----------------|----------------|----------------|-----------------|
| Long-Term Fixed Income | 5.71%         | 6.99%          | 6.97%          | 6.71%          | 5.74%           |
| Barclays Gov't/Credit  | 4.82%         | 6.70%          | 6.06%          | 5.90%          | 5.25%           |
| Rank vs. Peers         | 82            | 82             | 51             | 51             |                 |

- Long-Term Fixed Income outperformed the Barclay's Government/Credit Index over the above time periods due to a shorter duration strategy and an average A+ rating compared to AA- for the index.

### Strategy Update

- Over the past year, the allocation to Long-Term Fixed Income remained stable with the exception of a \$50 million withdrawal in June of 2012. This change in allocation was due to market fluctuations.
- Near the end of the third quarter of 2012, the supply of new issues declined significantly. Concurrently, rates moved higher by ten to twenty-five basis points. Our purchases were mostly secondary issues at discounts.
- Our duration strategy continues to focus on purchases in the three to ten-year range which reduces the negative returns in rising interest rate environments.

### Market Environment and Outlook

- Ten-year A-/Baa U.S corporates are yielding 150 to 200 basis points over treasuries; enough to cover higher risk and still provide a positive return.
- After changes made to the Investment Act, SMRS will have the ability to invest in "High Yield" bonds. The changes are effective in the second quarter of 2013. Spread pricing will determine allocation to that space. Currently, high yield spreads are normally priced at approximately 475 basis points.

### Conclusion

- As quality spreads narrow by fifty basis points or more, the focus will shift from A to AA average quality. Maturities will increase from seven to ten years.



**SMRS  
Long-Term Fixed Income  
12/31/12**

|   | Amount                    | % of Total |
|---|---------------------------|------------|
| <b>Government</b>                           |                           |            |
| Internal US Govt Related                    | \$1,375,495               | 20.3%      |
| <b>Sub Total</b>                            | <b>\$1,375,495</b>        |            |
| <b>Core</b>                                 |                           |            |
| Ambassador Capital Management               | \$55,376                  |            |
| Dodge & Cox                                 | 230,150                   |            |
| Pyramis                                     | 253,499                   |            |
| Metropolitan West                           | <u>274,345</u>            |            |
| <b>Sub Total</b>                            | <b>\$813,370</b>          | 12.0%      |
| <b>Credit</b>                               |                           |            |
| Internal Investment Grade Corporates Credit | \$3,741,837               |            |
| Alliance Bernstein                          | 201,005                   |            |
| Prudential                                  | <u>433,514</u>            |            |
| <b>Sub Total</b>                            | <b>\$4,376,356</b>        | 64.6%      |
| <b>Securitized Debt</b>                     |                           |            |
| Principal Global                            | <b>\$206,159</b>          |            |
| <b>Sub Total</b>                            | <b>\$206,159</b>          | 3.0%       |
| <b>TOTAL</b>                                | <b><u>\$6,771,380</u></b> | 100.0%     |

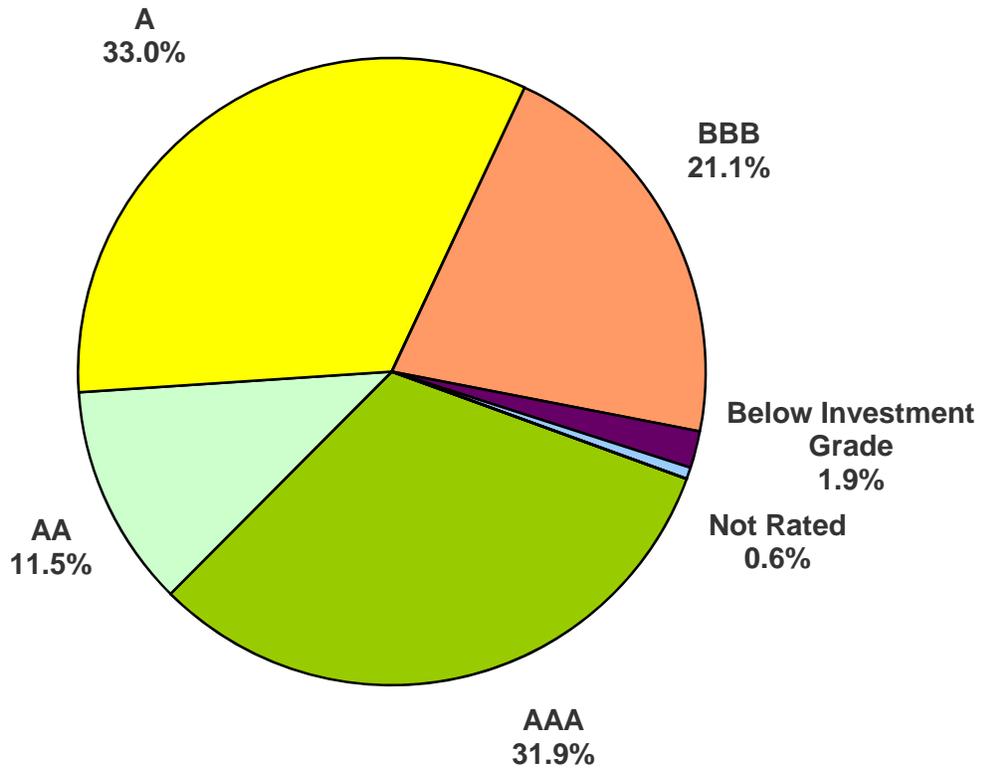


# SMRS

## Fixed Income By Rating

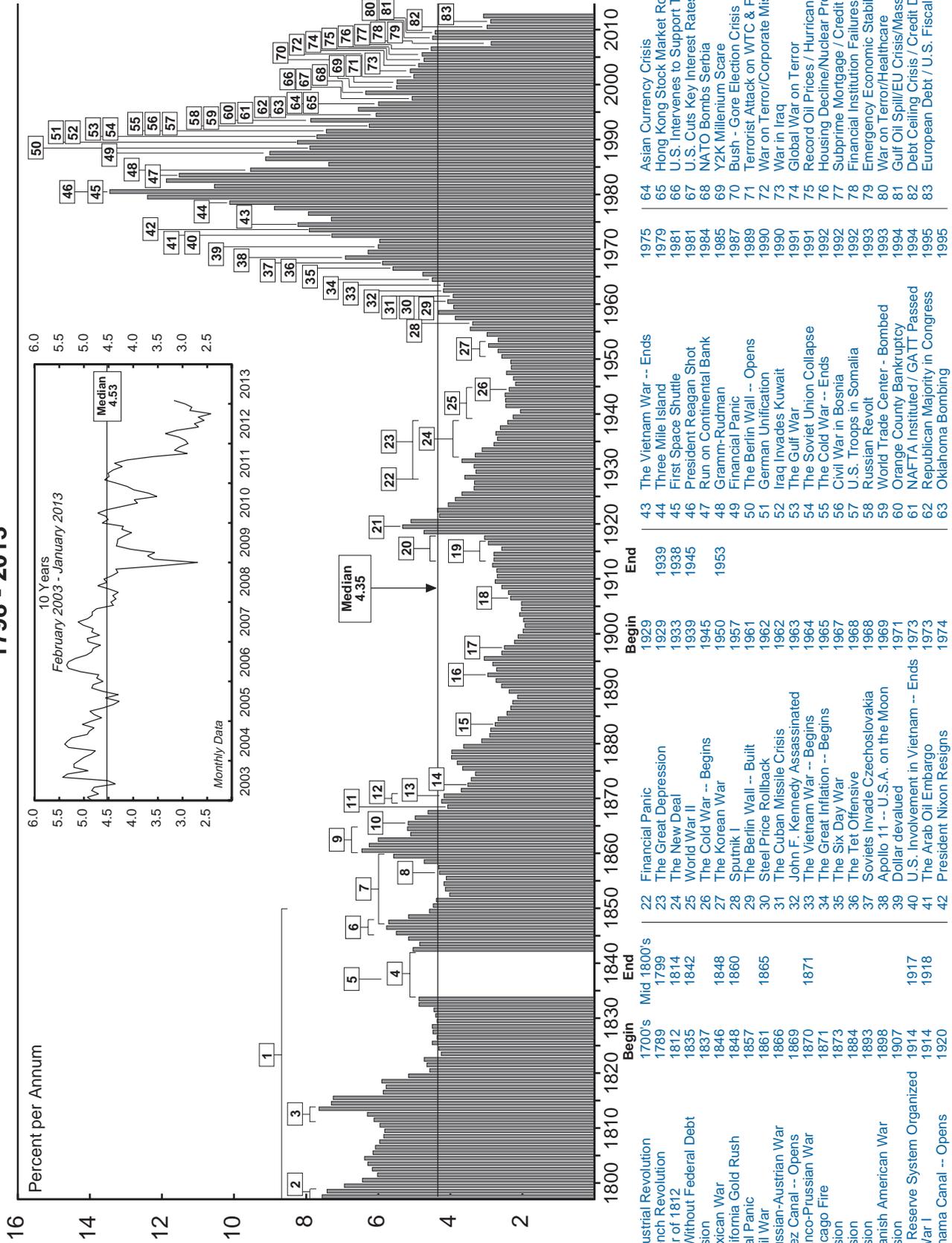
### Total U.S. Long-Term Fixed Income

#### 12/31/12



|                          | <b>Market Value in Millions</b> |                |                  |                |                |  |
|--------------------------|---------------------------------|----------------|------------------|----------------|----------------|--|
|                          | <u>12/31/12</u>                 |                |                  | <u>9/30/12</u> |                |  |
|                          | <u>Assets</u>                   | <u>Percent</u> | <u>Benchmark</u> | <u>Assets</u>  | <u>Percent</u> |  |
| AAA                      | \$2,161                         | 31.9%          | 73.1%            | \$2,005        | 29.8%          |  |
| AA                       | 778                             | 11.5%          | 5.0%             | 865            | 12.8%          |  |
| A                        | 2,237                           | 33.0%          | 11.1%            | 2,211          | 32.9%          |  |
| BBB                      | 1,426                           | 21.1%          | 10.8%            | 1,324          | 19.7%          |  |
| Not Rated                | 43                              | 0.6%           | 0.0%             | 167            | 2.5%           |  |
| Below Investment Grade   | 126                             | 1.9%           | 0.0%             | 157            | 2.3%           |  |
| <b>Total Investments</b> | <b>\$6,771</b>                  | <b>100.0%</b>  | <b>100.0%</b>    | <b>\$6,729</b> | <b>100.0%</b>  |  |

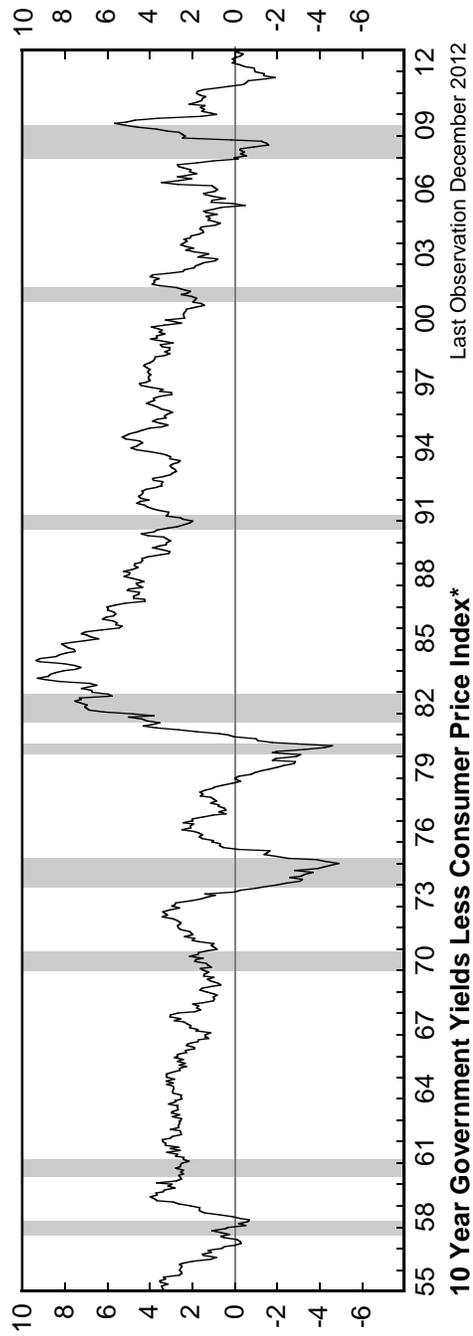
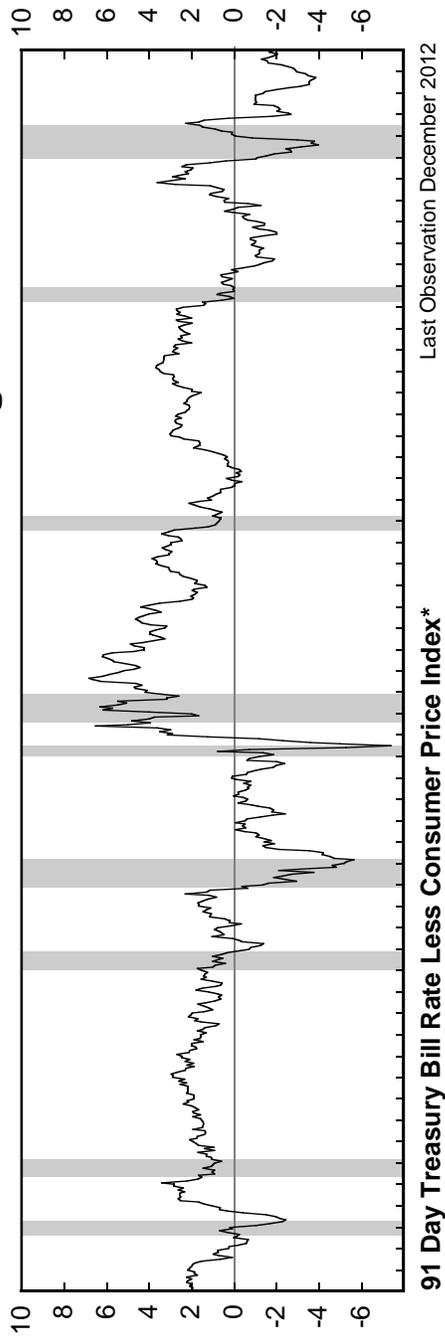
# Long-Term U.S. Government Bond Yields 1798 - 2013\*



\*Last Observation January 2013

Sources: Federal Reserve Board; Bureau of Economic Analysis; U.S. Department of Commerce; A History of Interest Rates, Sidney Homer; Copyright © 2013 Crandall, Pierce & Company • All rights reserved.

## Real Interest Rates: Short & Long Term



\*CPI data for December is preliminary.

Consumer Price Index = CPI Annual Growth Rate

Shaded areas represent recessionary periods.

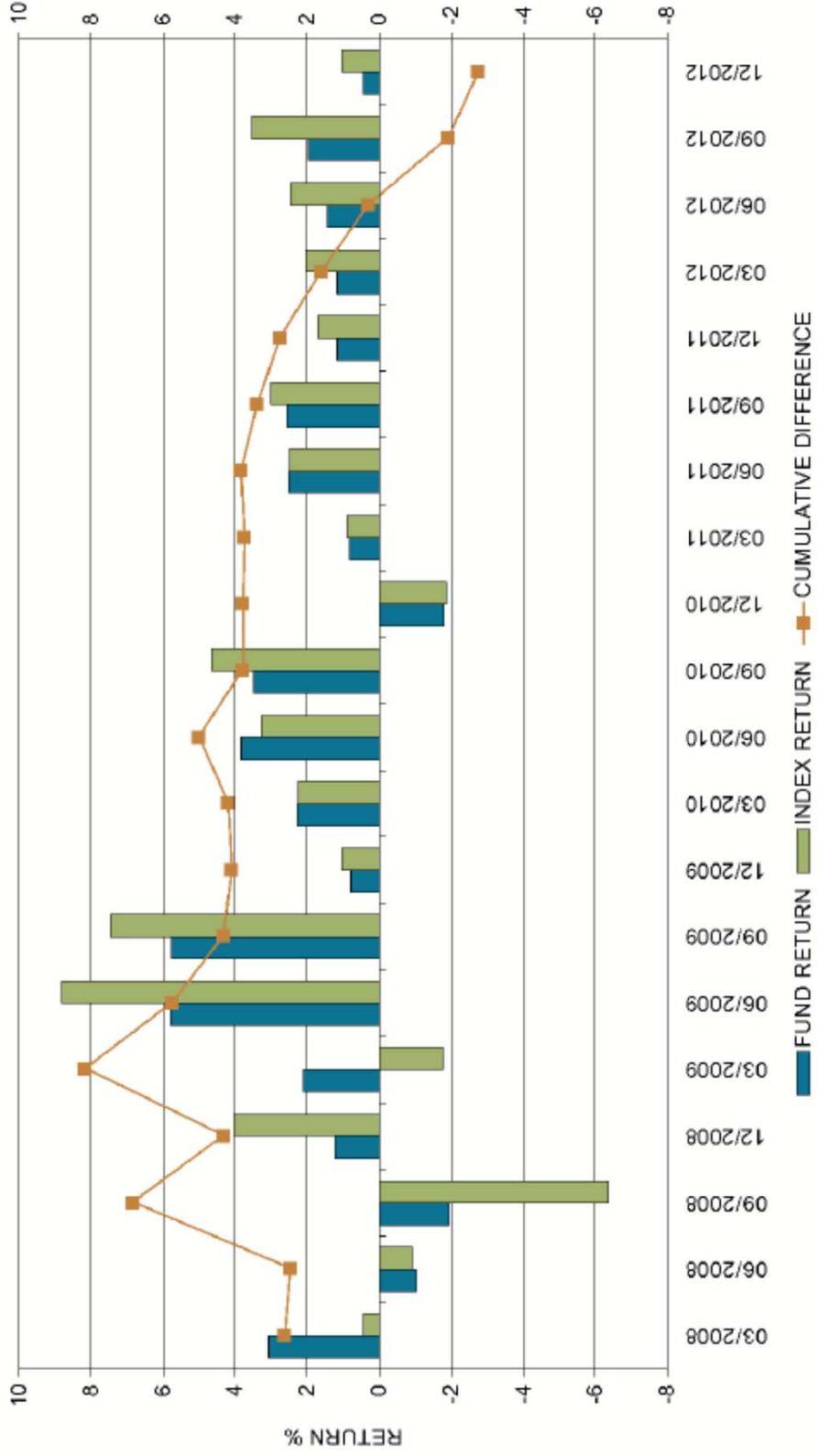
Sources: Federal Reserve Board; Bureau of Labor Statistics • Copyright © 2013 Crandall, Pierce & Company • All rights reserved.



# SMRS

Michigan State Treasury - Supersponsor  
INTERNAL CORPORATE FUND  
Index: Barclays Credit  
PERIODS: 12/31/07 - 12/31/12

## CUMULATIVE PERFORMANCE REPORT

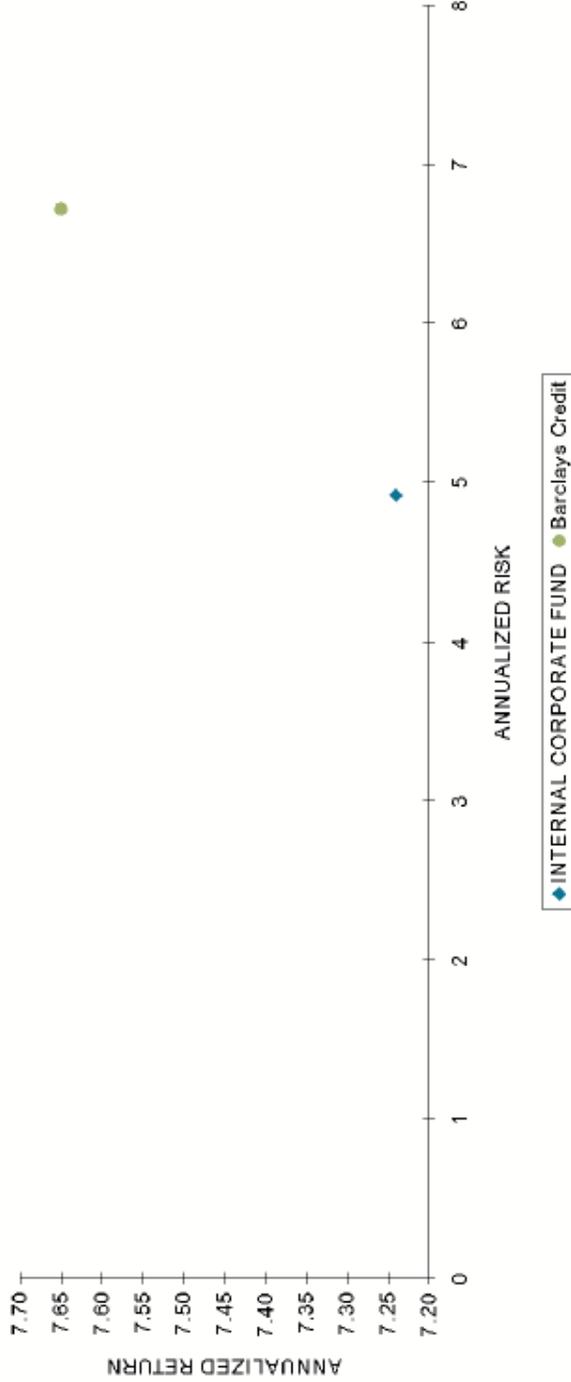




# SMRS

Michigan State Treasury - Supersponsor  
INTERNAL CORPORATE FUND  
Index: Barclays Credit  
PERIODS: 12/31/07 - 12/31/12

## RISK VS. RETURN



### RISK INFORMATION

|                              |       |
|------------------------------|-------|
| Portfolio Return             | 7.24  |
| Benchmark Return             | 7.65  |
| Return Differences           | -0.41 |
| Portfolio Standard Deviation | 4.92  |
| Benchmark Standard Deviation | 6.72  |
| Tracking Error               | 3.49  |

### RISK STATISTICS

|                   |       |
|-------------------|-------|
| Historic Beta     | 0.63  |
| R-squared         | 0.76  |
| Jensen's Alpha    | 2.20  |
| Sharpe Ratio      | 1.37  |
| Treynor Ratio     | 10.60 |
| Information Ratio | -0.12 |



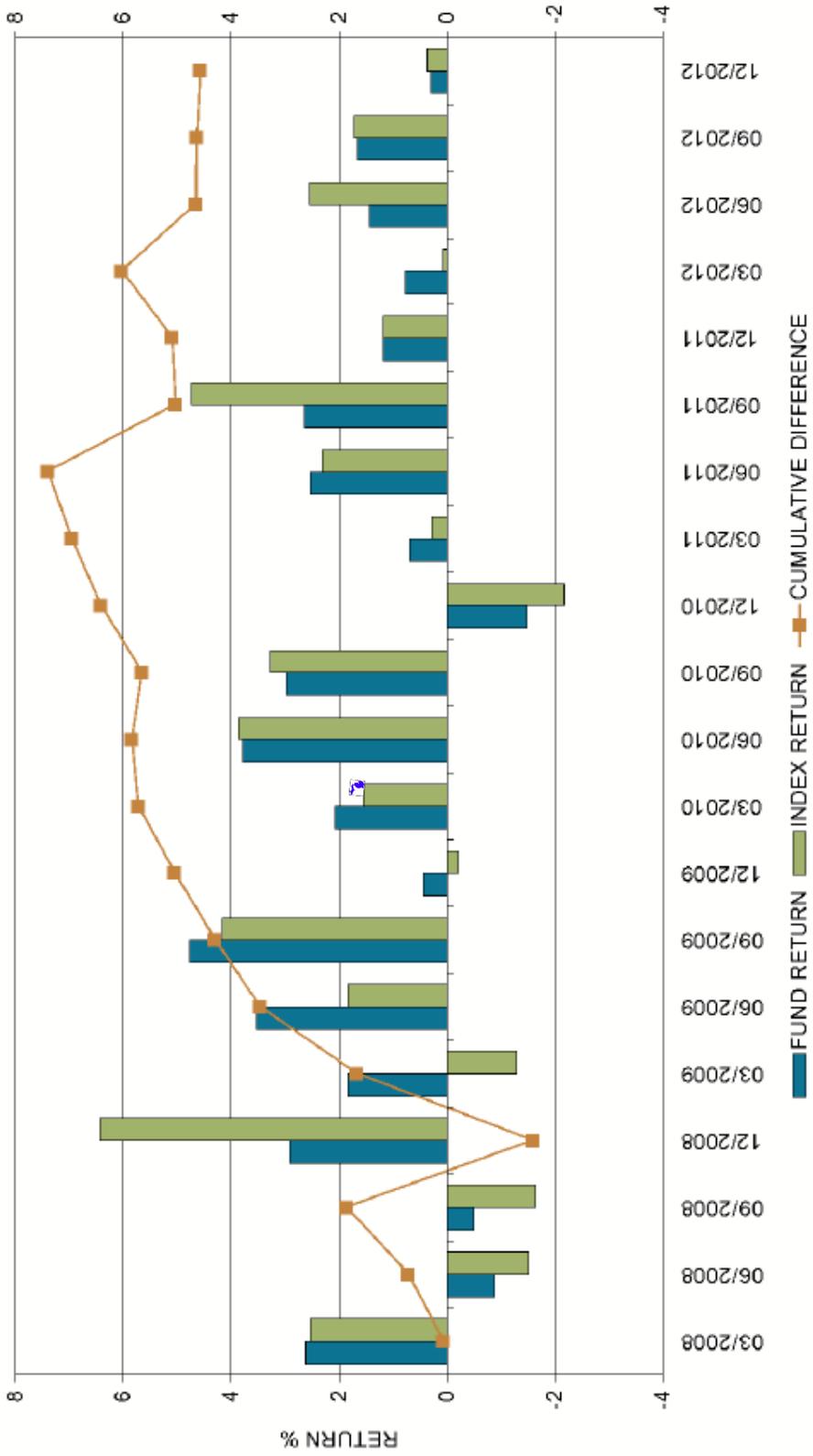
# SMRS

Michigan State Treasury - Supersponsor  
DOMESTIC FIXED INCOME AGGREGATE

Index: Barclays Gov/Credit

PERIODS: 12/31/07 - 12/31/12

## CUMULATIVE PERFORMANCE REPORT

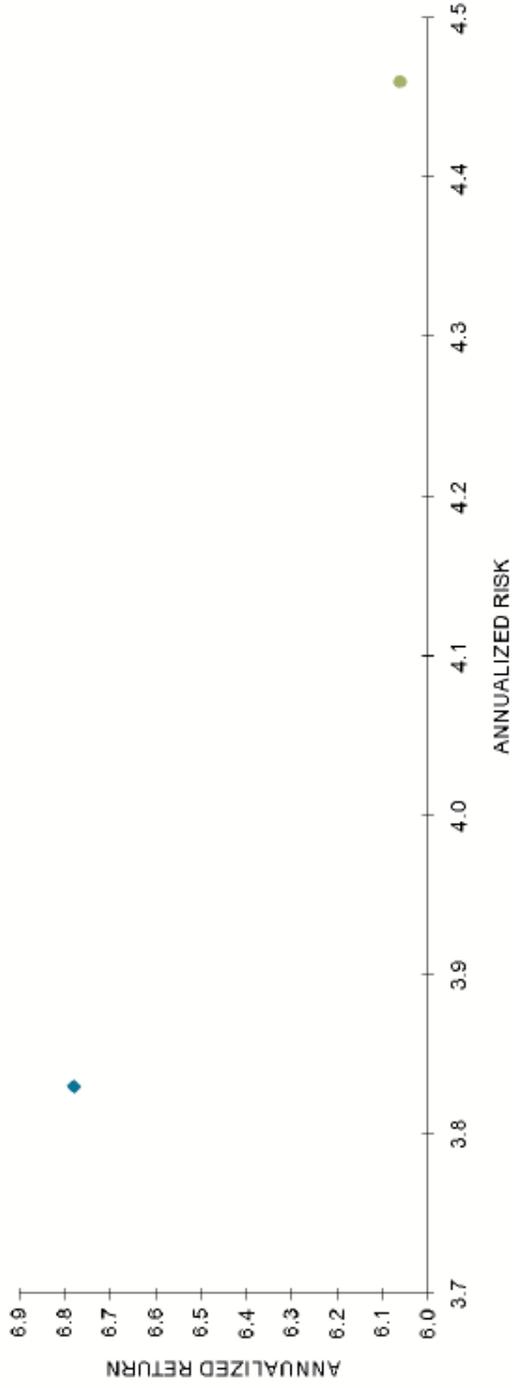




# SMRS

Michigan State Treasury - Supersponsor  
DOMESTIC FIXED INCOME AGGREGATE  
Index: Barclays Gov/Credit  
PERIODS: 12/31/07 - 12/31/12

## RISK VS. RETURN



◆ DOMESTIC FIXED INCOME AGGREGATE ● Barclays Gov/Credit

### RISK INFORMATION

|                              |      |
|------------------------------|------|
| Portfolio Return             | 6.78 |
| Benchmark Return             | 6.06 |
| Return Differences           | 0.72 |
| Portfolio Standard Deviation | 3.83 |
| Benchmark Standard Deviation | 4.46 |
| Tracking Error               | 1.98 |

### RISK STATISTICS

|                   |      |
|-------------------|------|
| Historic Beta     | 0.77 |
| R-squared         | 0.81 |
| Jensen's Alpha    | 1.98 |
| Sharpe Ratio      | 1.63 |
| Treynor Ratio     | 8.10 |
| Information Ratio | 0.36 |





## Fixed Internal Portfolio Top Ten Corporate Holdings

| <b>12/31/12</b>                |                      |                      |                |                             |
|--------------------------------|----------------------|----------------------|----------------|-----------------------------|
| <b>Name</b>                    | <b>Par Value</b>     | <b>Market Value</b>  | <b>Rating*</b> | <b>% of Total Portfolio</b> |
| General Electric Capital Corp. | \$181,675,000        | \$184,176,437        | A1/AA+         | 3.60%                       |
| DTE Energy Co.                 | \$70,750,000         | \$83,572,830         | A2/A           | 1.63%                       |
| E.I. Du Pont de Nemours & Co.  | \$70,000,000         | \$77,975,917         | A2/A           | 1.52%                       |
| The Dow Chemical Co.           | \$60,757,000         | \$72,694,742         | Baa2/BBB       | 1.42%                       |
| Target Corp.                   | \$60,000,000         | \$71,731,818         | A2/A+          | 1.40%                       |
| Emerson Electric Co.           | \$60,470,000         | \$69,623,828         | A2/A           | 1.36%                       |
| Conocophillips                 | \$53,250,000         | \$58,947,572         | A1/A           | 1.15%                       |
| American Honda Finance Corp.   | \$56,000,000         | \$58,177,926         | A1/A+          | 1.14%                       |
| Consumers Energy Co.           | \$45,905,000         | \$57,034,381         | A3/BBB+        | 1.11%                       |
| Allergan, Inc.                 | \$49,000,000         | \$55,475,050         | A3/A+          | 1.08%                       |
| <b>TOTAL</b>                   | <b>\$707,807,000</b> | <b>\$789,410,501</b> |                | <b>15.43%</b>               |

| <b>9/30/12</b>                 |                      |                      |                |                             |
|--------------------------------|----------------------|----------------------|----------------|-----------------------------|
| <b>Name</b>                    | <b>Par Value</b>     | <b>Market Value</b>  | <b>Rating*</b> | <b>% of Total Portfolio</b> |
| General Electric Capital Corp. | \$181,675,000        | \$182,970,600        | A1/AA+         | 3.58%                       |
| DTE Energy Co.                 | \$70,750,000         | \$83,693,084         | A2/A           | 1.64%                       |
| E.I. Du Pont de Nemours & Co.  | \$70,000,000         | \$78,903,667         | A2/A           | 1.54%                       |
| The Dow Chemical Co.           | \$60,757,000         | \$74,418,716         | Baa3/BBB       | 1.45%                       |
| Target Corp.                   | \$60,000,000         | \$72,672,527         | A2/A+          | 1.42%                       |
| Emerson Electric               | \$60,470,000         | \$70,714,961         | A2/A           | 1.38%                       |
| American Honda Finance Corp.   | \$56,000,000         | \$58,560,815         | A1/A+          | 1.14%                       |
| Abbott Laboratories            | \$49,969,000         | \$56,421,583         | A1/AA          | 1.10%                       |
| Consumers Energy Co.           | \$45,905,000         | \$56,347,973         | Aa3/BBB+       | 1.10%                       |
| Allergan Inc.                  | \$49,000,000         | \$55,957,528         | A3/A+          | 1.09%                       |
| <b>TOTAL</b>                   | <b>\$704,526,000</b> | <b>\$790,661,454</b> |                | <b>15.45%</b>               |

\*Moody's/Standard & Poor's

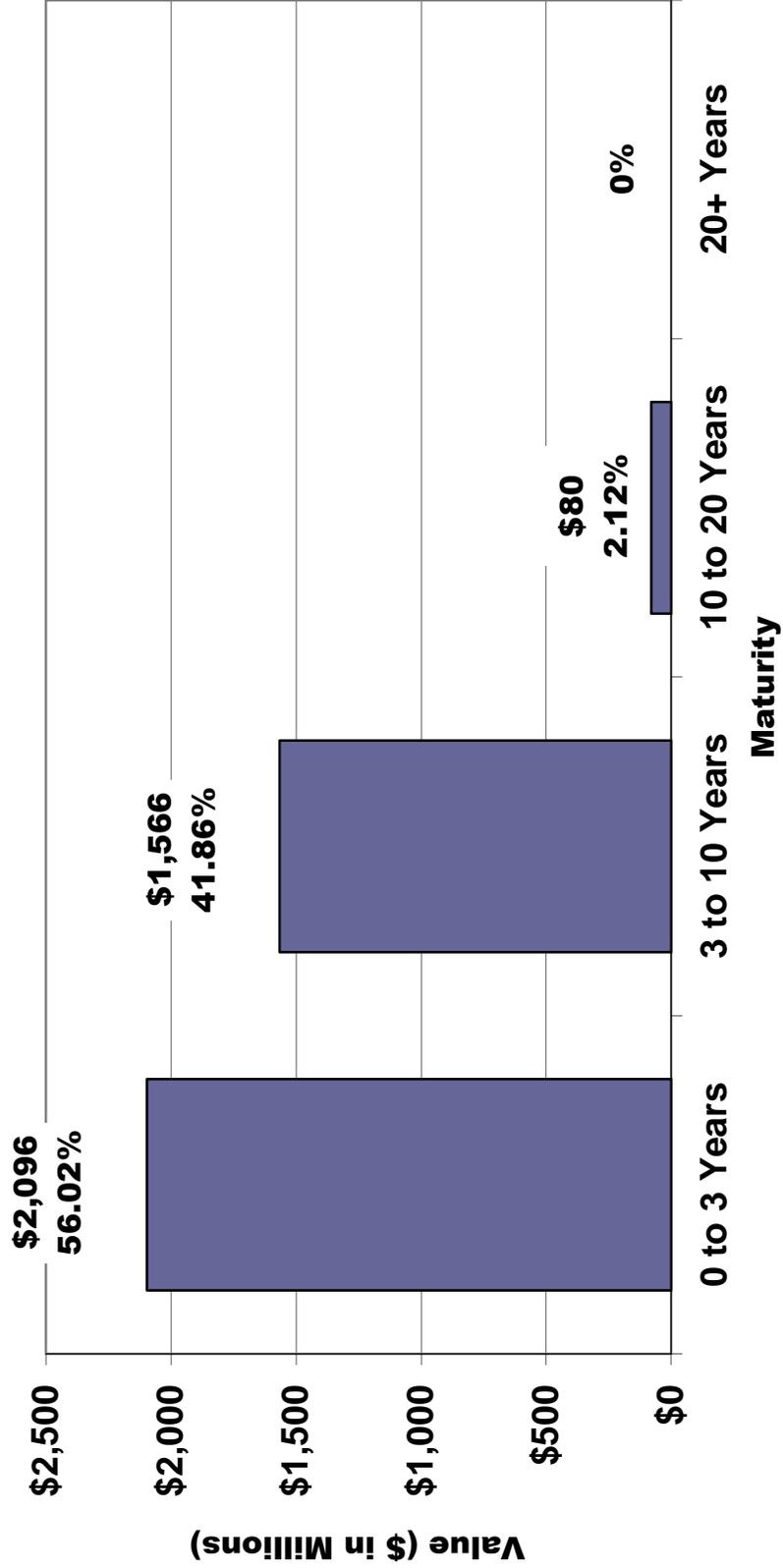


**SMRS**

# Fixed Income Internal Portfolio Corporate Portfolio Maturity Distribution

12/31/12

Average Maturity of December 2016  
Total Market Value \$3,742 Million



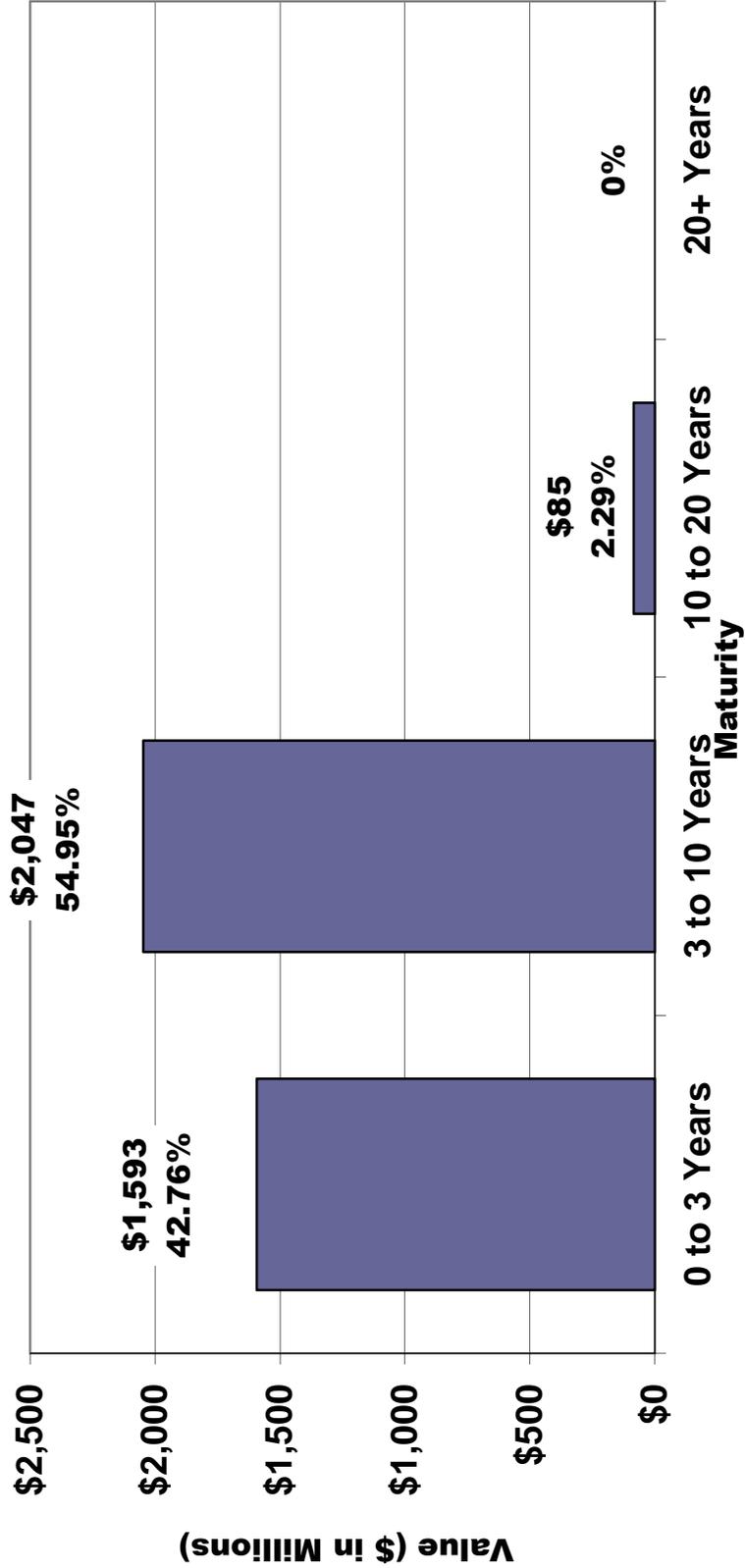


**SMRS**

# Fixed Income Internal Portfolio Corporate Portfolio Maturity Distribution

9/30/12

Average Maturity of October 2016  
Total Market Value \$3,725 Million





**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**REAL ESTATE AND  
INFRASTRUCTURE REVIEW**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**MARCH 7, 2013**



**Brian C. Liikala, Administrator  
Real Estate & Infrastructure Division**



## **EXECUTIVE SUMMARY**

### **Real Estate**

- Total real estate market value ended the fourth quarter at \$5 billion with a total return of 1%; its eleventh straight positive quarterly return. High quality real property has been favored by investors as they look for secure assets to minimize risk during the global recession.
- Valuations increased this quarter for the majority of REID's U.S. property types. Strong rental growth in apartments and increases in hotel and industrial occupancies continued. However, international valuations declined due to global economic concerns during 2012.
- The gross market value of the portfolio is estimated at \$9.8 billion and the loan-to-value ratio is 49.1%.
- The REID is executing sales of non-strategic properties in secondary markets with limited upside potential at attractive values and capitalizing on the sale of core assets at low capitalization rates.
- In the commercial mortgage-backed securities (CMBS) market, spreads over the swap rate for AAA-rated securities decreased 40 basis points and now stand at 72 basis points. CMBS delinquencies declined to 7.99% (60-day delinquent). New issuance for CMBS in 2013 is projected by Commercial Mortgage Alert to be better than expected at \$60 billion.
- Unfunded capital commitments for real estate totaled \$263 million. It is expected that market transaction activity will slowly increase as the void between buyers and sellers diminish and the availability of debt increases. Our real estate managers are being very selective, taking advantage of opportunities from owners and lenders in markets that have potential for growth and long-term liquidity.
- New commitment for this quarter was \$29 million to CPI Capital Partners N.A. Secondary LP, which is a commingled fund managed by Apollo Global Real Estate L.P. SMRS who is an existing 8.3% L.P. in the fund since 2006, purchased an additional L.P. interest at a 24% discount to NAV.
- Opportunities for investors include the ability to develop apartments in major urban markets, recapitalize troubled portfolios, consistently communicate with lenders for distressed assets, sell properties to REITs flush with capital, and exhibit patience in order to find properties in markets that have strong fundamentals.

## **EXECUTIVE SUMMARY**

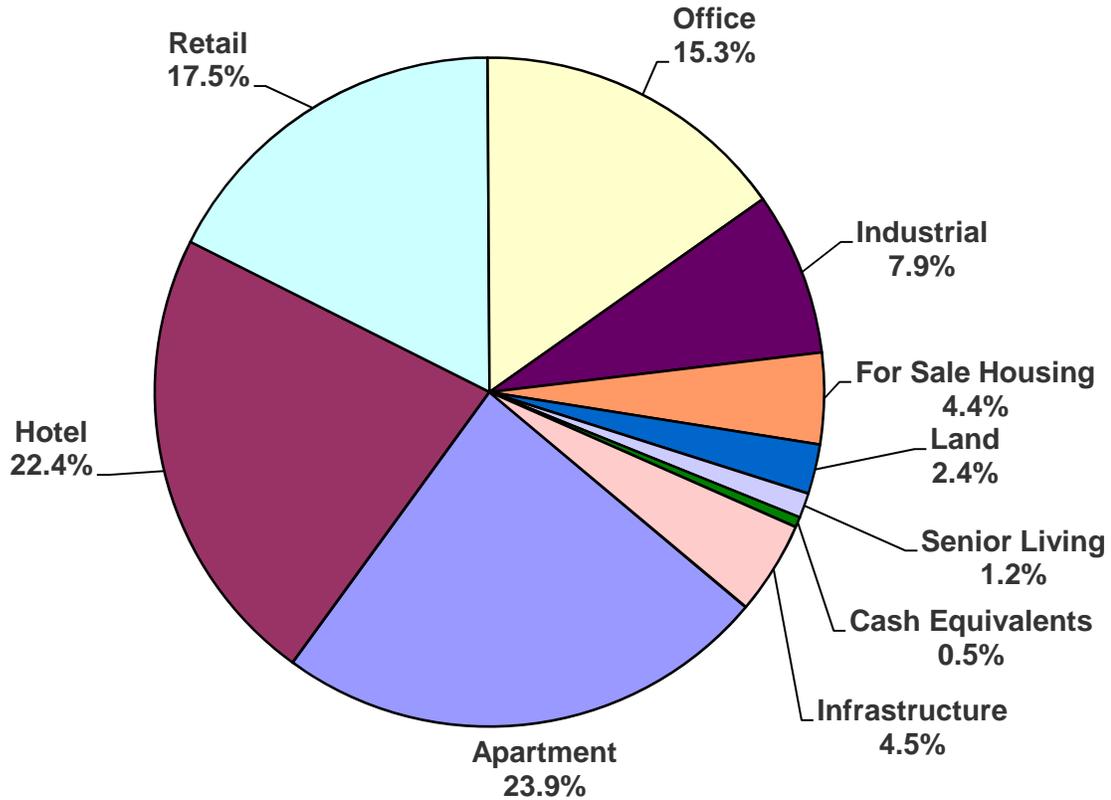
### **Infrastructure**

- Total market value of infrastructure investments ended the third quarter at \$212 million (not including \$24 million in Short-Term Investments) with a total return of 7.8% for the quarter.
- The objective for this asset class is to provide an attractive risk/return profile, low correlation with other asset classes, a predictable and defensible cash flow return, and a total return that exceeds the benchmark (400 bp over U.S. CPI). Target investments for the asset class will also contain CPI enhancers to provide some degree of protection from inflation.
- REID seeks investment managers that are experienced in infrastructure with a strategy that will satisfy the objectives of the fund. The managers will possess a commitment to long-term ownership, responsible and proven service delivery, access to institutional quality investments, and provide alignment of interest.
- Fund flows to the infrastructure sector continue to remain robust, as investor sentiment toward the asset class continues to improve from the depths of the global financial crises. According to data provided by Preqin Infrastructure, 36 unlisted infrastructure funds reached a final close in 2012, raising an aggregate \$24 billion, an approximate 4% increase over the \$23 billion raised during 2011. A further 44 funds held an interim close, raising an additional \$16 billion.
- Europe continues to dominate the deal landscape, accounting for 48% of global infrastructure deal flow through the first 11 months of 2012. North America stands at 27% and Asia at 15% of global infrastructure deal volume over the same period.
- Continuing cautiousness over Europe was reflected on the fund-raising front. North America-focused funds collected 73% of the total funds raised in the first 11 months of 2012; Europe-focused funds raised 17% with another 8% garnered by Asia-focused funds over the same period.
- REID is reviewing additional core and multi-strategy infrastructure investment opportunities and actively meeting with major infrastructure managers in the industry. Total commitments to date are \$340 million; additional commitments will be made over the next several years.



# SMRS

## Real Estate and Infrastructure Holdings By Property Type 12/31/12



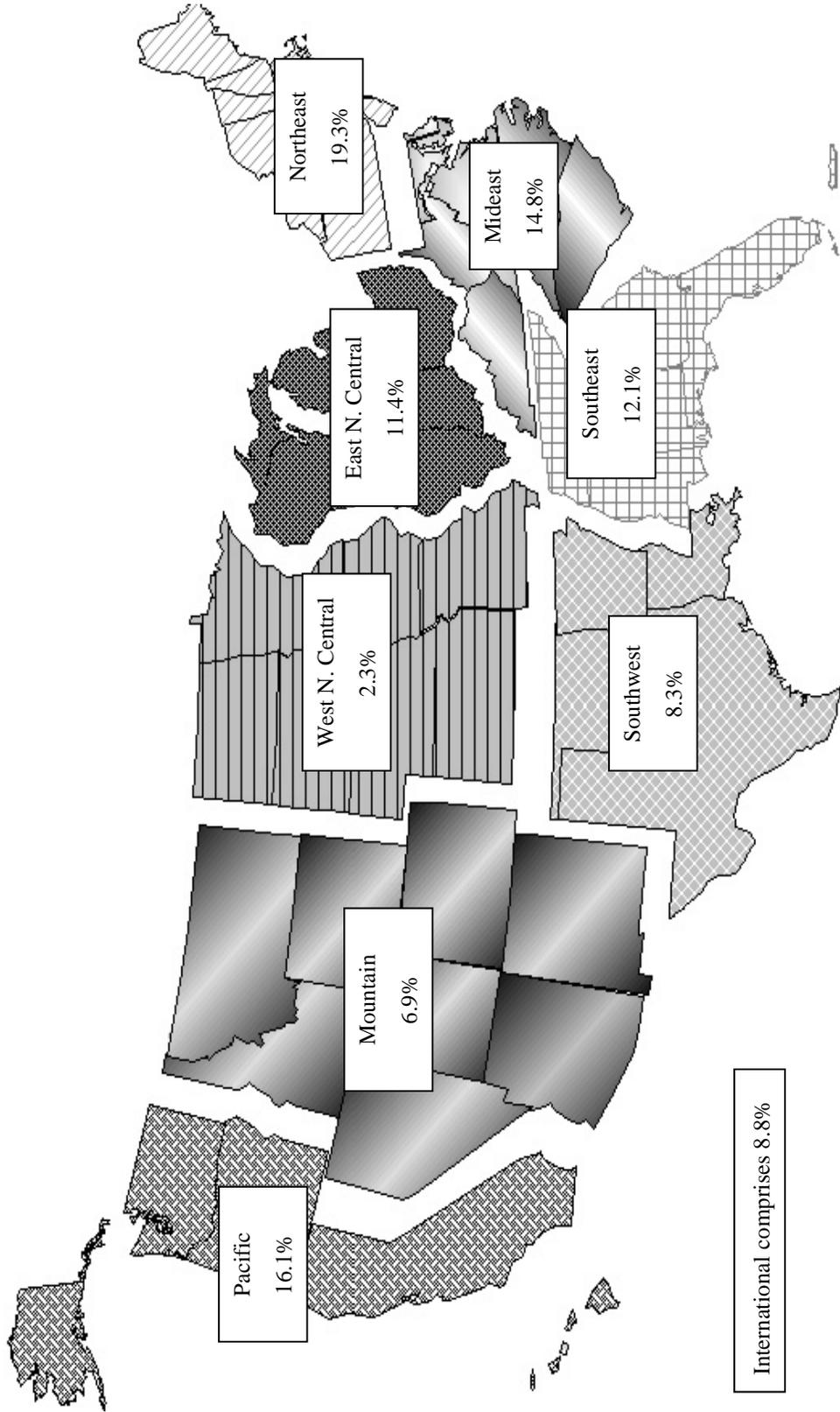
| <b>Market Value in Millions</b> |                 |               |                |               |
|---------------------------------|-----------------|---------------|----------------|---------------|
|                                 | <u>12/31/12</u> |               | <u>9/30/12</u> |               |
| Apartment                       | \$1,252         | 23.9%         | \$1,229        | 23.2%         |
| Hotel                           | 1,171           | 22.4%         | 1,122          | 21.2%         |
| Retail                          | 920             | 17.5%         | 889            | 16.8%         |
| Office                          | 801             | 15.3%         | 901            | 17.0%         |
| Industrial                      | 412             | 7.9%          | 412            | 7.8%          |
| For Sale Housing                | 230             | 4.4%          | 263            | 5.0%          |
| Land                            | 128             | 2.4%          | 128            | 2.4%          |
| Senior Living                   | 64              | 1.2%          | 64             | 1.2%          |
| <b>Total Investments</b>        | <b>\$4,978</b>  | <b>95.0%</b>  | <b>\$5,008</b> | <b>94.6%</b>  |
| Infrastructure                  | 235             | 4.5%          | 211            | 4.0%          |
| Cash Equivalents                | 25              | 0.5%          | 73             | 1.4%          |
| <b>Total</b>                    | <b>\$5,238</b>  | <b>100.0%</b> | <b>\$5,292</b> | <b>100.0%</b> |



# Real Estate by Region

Based on Net Market Value  
(excludes cash & cash equivalents)

12/31/12



Geographic regions defined by NCREIF, whose property index composition is: Pacific 28.7%, Mountain 5.8%, West N. Central 1.8%, Southwest 10.9%, East N. Central 8.2%, Southeast 11.1%, Northeast 19.2%, Mideast 14.3%



**SMRS  
Real Estate  
12/31/12**

**Occupancy  
by Property Type**

|                  | <b>Apartment</b> | <b>Office</b> | <b>Industrial</b> | <b>Retail</b> | <b>Hotel</b> |
|------------------|------------------|---------------|-------------------|---------------|--------------|
| SMRS Portfolio   | 95.88%           | 89.28%        | 84.81%            | 93.41%        | 70.74%       |
| National Average | 91.40%           | 84.50%        | 86.90%            | 92.60%        | 74.50%       |

**Top Ten  
Advisors or Companies**

| <u><b>Advisor or Company</b></u>        | <u><b>Net Market Value</b></u> |
|---|--------------------------------|
| Clarion Partners (formerly ING Clarion) | \$ 955,772,624                 |
| MWT Holdings, LLC *                     | 772,893,960                    |
| Edens & Avant Investments, LP           | 638,107,027                    |
| Principal Real Estate Investors         | 263,969,017                    |
| Kensington Realty Advisors, Inc.        | 253,501,670                    |
| Five Star Realty Partners, LLC          | 224,667,626                    |
| Bentall Kennedy LP                      | 182,490,107                    |
| KBS Realty Advisors, Inc.               | 164,220,821                    |
| CIM Group, Inc.                         | 162,625,103                    |
| Blackstone Real Estate Advisors         | 146,779,913                    |
|   | <u><u>\$ 3,765,027,868</u></u> |

**Footnotes:**

\* SMRS owns approximately 50% of Simpson Housing through MWT Holdings LLC



**Real Estate**  
**Net Market Values by Ownership Entity**  
12/31/12

|   | <b>Net<br/>Market Value</b> | <b>Unfunded<br/>Commitment</b> |
|---|-----------------------------|--------------------------------|
| 801 Grand Avenue Capital, LLC                     | \$ 106,868,952              | \$ 0                           |
| AGL Annuity Contract GVA 0016                     | 323,600,720                 | 0                              |
| Avanath Affordable Housing I, LLC                 | 11,830,065                  | 12,817,377                     |
| Beacon Capital Strategic Partners IV, LP          | 19,608,401                  | 0                              |
| Beacon Capital Strategic Partners V, LP           | 17,318,399                  | 6,500,000                      |
| BlackRock Retail Opportunity Fund, LLC            | 11,272,946                  | 6,000,000                      |
| Blackstone Real Estate Partners V, LP             | 57,418,669                  | 2,208,906                      |
| Blackstone Real Estate Partners VI, LP            | 89,361,246                  | 5,359,586                      |
| Capri Select Income II                            | 6,983,924                   | 0                              |
| Capri Urban Investors, LLC                        | 19,671,554                  | 0                              |
| CIM Fund III, LP                                  | 78,474,783                  | 11,991,736                     |
| CIM Urban REIT, LLC                               | 80,201,163                  | 0                              |
| CIM VI (Urban REIT), LLC                          | 3,949,157                   | 20,919,073                     |
| City Lights Investments, LLC                      | 115,053,330                 | 6,500,000                      |
| Cobalt Industrial REIT                            | 51,473,974                  | 0                              |
| Cobalt Industrial REIT II                         | 68,694,499                  | 0                              |
| CPI Capital Partners N.A., LP                     | 8,785,170                   | 0                              |
| * <b>CPI Capital Partners N.A., Secondary, LP</b> | 19,038,539                  | 0                              |
| Devon Real Estate Conversion Fund, LP             | 6,082,144                   | 0                              |
| Domain Hotel Properties, LLC                      | 799,678,491                 | 0                              |
| Dynamic Retail Trust                              | 52,308,110                  | 0                              |
| Edens & Avant Investments, LP                     | 585,798,917                 | 5,000,000                      |
| Federal Street, LLC                               | 2,447,827                   | 0                              |
| Gateway Capital R/E Fund II, LP                   | 93,082,290                  | 1,276,875                      |
| Great Lakes Property Group Trust                  | 243,184,031                 | 0                              |
| Invesco Mortgage Recovery Feeder Fund             | 19,358,913                  | 15,922,329                     |
| JBC Opportunity Fund III, LP                      | 16,362,798                  | 0                              |
| KBS/SM Fund III, LP                               | 96,729,373                  | 0                              |
| L & B Medical Properties Partners, LP             | 3,191,771                   | 2,384,389                      |
| Landmark Real Estate Partners V, LP               | 34,945,399                  | 4,973,727                      |
| LaSalle Asia Opportunity Fund II, LP              | 6,494,706                   | 0                              |
| LaSalle Asia Opportunity Fund III, LP             | 42,472,063                  | 15,000,000                     |
| Lion Industrial Trust                             | 112,839,943                 | 0                              |
| Lion Mexico Fund, LP                              | 43,254,189                  | 0                              |
| Lowe Hospitality Investment Partners              | 3,661,158                   | 0                              |
| MERS Acquisitions, Ltd.                           | 118,089,300                 | 0                              |
| MG Alliance, LLC                                  | 4,220,602                   | 15,932,112                     |
| Morgan Stanley R/E Fund V - International         | 14,385,267                  | 0                              |
| Morgan Stanley R/E Fund VI - International        | 40,662,605                  | 0                              |
| Morgan Stanley R/E Fund V - U.S.                  | 8,106,071                   | 0                              |
| MSRE Mezzanine Partners LP                        | 174,067                     | 0                              |
| Morgan Stanley R/E Special Situations Fund III    | 69,548,082                  | 0                              |
| MWT Holdings, LLC                                 | 772,893,960                 | 78,750,000                     |
| Northpark-Land Associates, LLLP                   | 25,658,100                  | 0                              |
| Paladin Realty Brazil Investors III (USA), LP     | 25,479,453                  | 9,924,317                      |
| Principal Separate Account                        | 157,100,066                 | 0                              |
| Rialto Real Estate Fund, LP                       | 60,771,621                  | 0                              |
| SM Brell II, LP                                   | 67,491,448                  | 0                              |
| Stockbridge Real Estate Fund II-C, LP             | 26,610,537                  | 1,335,000                      |
| Strategic LP                                      | 171,949,042                 | 14,114,444                     |
| SWA Acquisitions, Ltd.                            | 789,287                     | 0                              |
| Trophy Property Development LP                    | 66,919,948                  | 11,250,000                     |
| True North High Yield Investment Fund II          | 41,891,359                  | 8,634,590                      |
| Venture Center, LLC                               | 31,739,396                  | 0                              |
| Western National Realty Fund II, LP               | 23,202,034                  | 455,264                        |
|   | \$ 4,979,179,859            | -                              |
| <b>Short Term Investments and Other</b>           | 24,615,797                  | -                              |
| <b>Total Real Estate Investments</b>              | <b>\$ 5,003,795,656</b>     | <b>\$ 257,249,725</b>          |

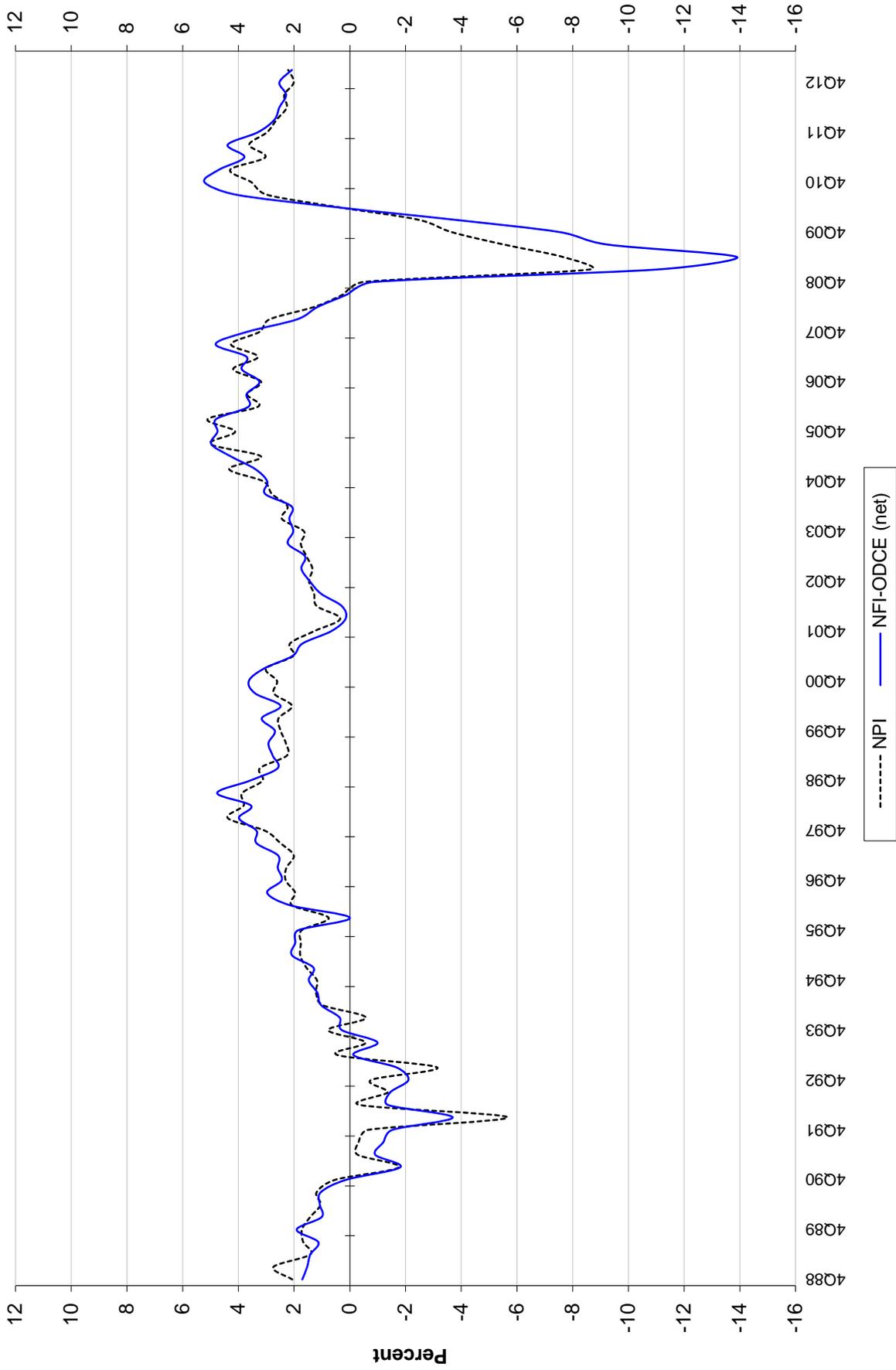
\* New commitment made during the quarter reported.



**Infrastructure Investments**  
**Net Market Values by Ownership Entity**  
12/31/12

|   | <b>Net Market<br/>Value</b>  | <b>Unfunded<br/>Commitment</b> |
|---|------------------------------|--------------------------------|
| Blackstone Energy Partners, LP            | \$ 14,542,585                | \$ 39,296,293                  |
| CSG Infrastructure Investment Program, LP | 46,145,194                   | 0                              |
| Customized Infrastructure Strategies, LP  | 58,639,587                   | 48,474,711                     |
| JPMorgan AIRRO India Sidecar Fund US, LLC | 70,192,844                   | 6,831,750                      |
| KKR Global Infrastructure Investors, LP   | <u>22,050,462</u>            | <u>53,669,000</u>              |
|   | \$ 211,570,672               | -                              |
| <b>Short-Term Investments and Other</b>   | <u>22,950,353</u>            | -                              |
| <b>Total Infrastructure Investments</b>   | <b><u>\$ 234,521,025</u></b> | <b><u>\$ 148,271,754</u></b>   |

### NCREIF Quarterly Returns NPI and NFI-ODCE



**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**DOMESTIC EQUITY REVIEW**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**MARCH 7, 2013**



**Jack A. Behar, CFA, Administrator  
Stock Analysis Division**



## EXECUTIVE SUMMARY

### Performance

| <b><u>Total Domestic Equity, Gross</u></b> | <b><u>1-Year</u></b> | <b><u>3-Years</u></b> | <b><u>5-Years</u></b> | <b><u>7-Years</u></b> | <b><u>10-Years</u></b> |
|--|----------------------|-----------------------|-----------------------|-----------------------|------------------------|
| Annualized Returns                         | 16.8%                | 10.2%                 | 2.0%                  | 4.3%                  | 7.3%                   |
| S&P 1500                                   | 16.2%                | 11.2%                 | 2.1%                  | 4.4%                  | 7.3%                   |
| Rank vs. Peers                             | 37                   | 62                    | 33                    | 39                    | 79                     |

| <b><u>Total Domestic Equity, Net</u></b> | <b><u>1-Year</u></b> | <b><u>3 Years</u></b> | <b><u>5 Years</u></b> |
|--|----------------------|-----------------------|-----------------------|
| Annualized Returns                       | 16.7%                | 10.1%                 | 1.8%                  |
| S&P 1500                                 | 16.2%                | 11.2%                 | 2.1%                  |
| Morningstar Cap-Weighted Average         | 14.8%                | 8.6%                  | 0.8%                  |

| <b><u>Total Active Equity, Net</u></b> | <b><u>1-Year</u></b> | <b><u>3 Years</u></b> | <b><u>5 Years</u></b> |
|--|----------------------|-----------------------|-----------------------|
| Annualized Returns                     | 16.2%                | 9.4%                  | 1.6%                  |
| S&P 1500                               | 16.2%                | 11.2%                 | 2.1%                  |
| Morningstar Cap-Weighted Average       | 14.8%                | 8.9%                  | 0.8%                  |

- Total Domestic Equities delivered a 2.0% annualized gross return during the past five years, underperforming the S&P 1500 by 10 basis points (bp) but outperforming its peer group. Similarly, Active Equities underperformed the S&P 1500 net of fees by 50 bp during this same time period, but outperformed a cap-weighted blend of Morningstar large-cap, mid-cap and small-cap average peer returns by 80 bp.
- Significant contributors to division performance during the past five years in order of importance were as follows:
  - Passive equity outperformed the S&P 900 by roughly 50 bp, partially as a result of standout performance in the mid-cap space as well as fees earned through securities lending.
  - The internal large-cap active fund composite underperformed the S&P 500 by 33 bp while outperforming its Morningstar peer group by 84 bp. Performance was driven by strong stock selection in the healthcare sector, offset by consumer discretionary and financials exposure.
  - The external large-cap manager composite underperformed the S&P 500 by 169 bp since its inception in 2009. Positive results in the consumer discretionary sector were offset by stock selection in the industrials, information technology and financial sectors.
  - The external mid-cap manager portfolio underperformed the S&P 400 by 251 bp, while outperforming its Morningstar peer group by 10 bp.
  - The external small-cap value composite underperformed the S&P 600 by 95 bp while outperforming its Morningstar peer group by 116 bp.
- During the past year Active Equities performed in line with the S&P 1500 and outperformed a Morningstar Cap-Weighted peer group average by 140 bp.
  - Performance was positively impacted by a handful of internally and externally managed portfolios, as well as by the division's overweight to the financial sector.

- Results were offset by the performance of SMRS' small and mid-cap portfolio composites, as well as by stock selection in the consumer discretionary space.
- During the past three years, two new internal funds were launched (bringing the total to five), both of which are outperforming their benchmarks by greater than 400 bp since their respective start dates.

### **Strategy Update**

- Domestic equity outflows totaled \$620 million and \$3.4 billion during the past quarter and twelve months respectively.
- On a total domestic equity basis, large-caps make up 91.5% of portfolio exposure, with mid-caps totaling 8.5% of the portfolio. Active equities remain tilted towards large-caps, with 94% percent of funds under management now primarily large-cap and 6% primarily mid-cap. SMRS still has ~\$400 million invested with small-cap managers, but has hedged away the resulting small-cap risk exposure in exchange for large-cap exposure.
- Domestic equity remains overweight the financials, technology, and healthcare sectors. The healthcare sector provides stability and can also be used as a yield substitute for income-seeking investors. U.S. financials have much stronger balance sheets than during the financial crisis, as well as significant earnings leverage to a higher interest rate environment. The technology sector is one of the few areas of the economy that is still showing solid growth prospects. In addition, it is both reasonably priced and stable from a balance sheet perspective.
- The internal active equity portfolio is trading at 12.4X normalized earnings versus the S&P 500 at 15.6X normalized earnings, with slightly greater exposure to market volatility and modestly less attractive growth prospects going forward. If the internal portfolio's normalized PE trades to within a 10% discount of the S&P 500, this would imply outperformance of roughly 13% versus the benchmark.

### **Market Environment and Outlook**

- Despite significant risks to the economic environment, equity markets continue to look reasonably priced. Assuming a 4.0% normalized dividend yield and 5.5% long-term expected earnings growth, the S&P 500 is poised to return an estimated 9.5% over the long-term. This compares to 30-year U.S. Treasuries at 2.9% and a historical average return of 9.2%.
- Within equities, large-cap stocks look attractive relative to small-caps, particularly on a risk adjusted basis. The trailing twelve-month PE for the S&P 500 is ~15X versus the S&P 600 at ~21X, while the trailing twelve-month dividend yield for S&P 500 (including buybacks) is 3.5% versus the S&P 600 at 1.4%. Over the long term we believe that small-caps will return roughly 8.5% based on a ~1.5% dividend yield and 7% long-term earnings growth. This makes the asset class both a lower return and a higher risk proposition than large-caps.
- Certain defensive sectors such as healthcare and consumer staples remain valuable in today's low-bond yield environment, offering healthy dividend yields and growth potential. These sectors have a similar risk profile as high-yield bonds, but significantly higher expected returns. At the same time they have nearly the same long-term expected return as the S&P 500, with less downside risk in the event of a significant market correction.

- During the past five years, small and mid-cap growth strategies have outperformed, while large-cap value in particular has struggled. This has opened up the valuation gap in which SMRS active equity has positioned itself, with its large-cap overweight and modest value-stock tilt.

| <b>Five-Year Performance by Style and Market Cap</b> | <b>Value</b> | <b>Core</b> | <b>Growth</b> |
|--|--------------|-------------|---------------|
| S&P 500 Large-Cap                                    | -1.6%        | 1.7%        | 3.4%          |
| S&P 400 Mid-Cap                                      | 4.3%         | 5.2%        | 6.0%          |
| S&P 600 Small-Cap                                    | 4.7%         | 5.1%        | 5.5%          |

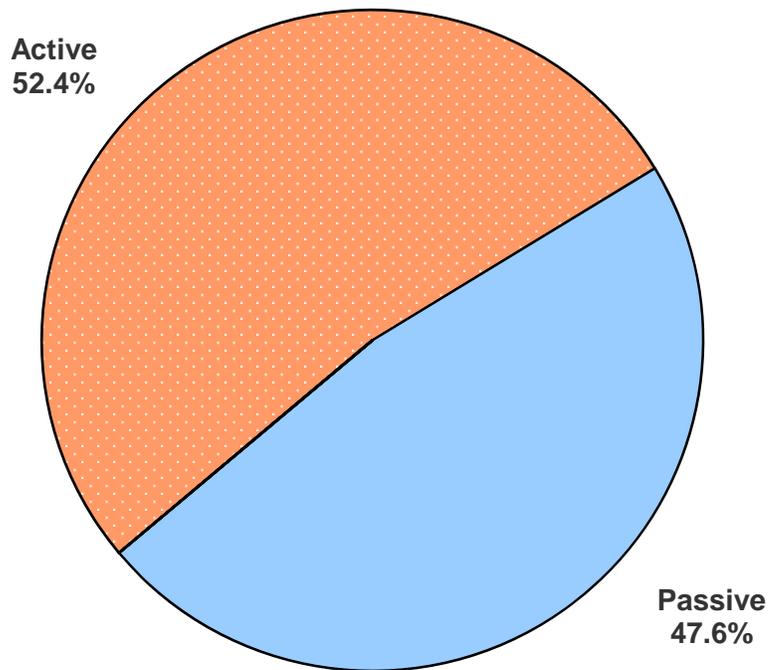
## **Philosophy**

- We emphasize long-term investing, because it's significantly less speculative than trying to predict short-term market moves. As with bonds, calculating the yield on current and expected cash flows is a good predictor of long-term returns. In particular, earnings/price and EBITDA/EV ratios have been demonstrated to be effective, which is why the composite portfolio tends to have a value tilt.
- Markets participants tend to make investment decisions based on “what’s working” or what they expect to perform well over the next six months. This creates inefficiencies across the market cap spectrum for investors that are willing to have a longer time horizon, as companies that are perceived as having muted near-term prospects are often undervalued as a result.
- Considerations for hiring and firing managers are based primarily on organizational structure and incentives, qualitative analysis of manager thought processes, bottom up analysis of holdings and fees. We do not typically use historical three and five-year performance to make hiring, firing or allocation decisions. According to research by RV Kuhns, such performance is not only ineffective in predicting future performance, but it may even be inversely correlated to future performance. According to research by Morningstar, Inc., the best predictor of future mutual fund returns over the long term is not Morningstar fund rating or past track record – but fees. As a result, the Stock Analysis Division is very careful about how much it pays for active management, and seeks to reduce its costs wherever possible while maintaining a quality manager portfolio.
- Both absolute and relative returns are important. Benchmarks are valuable, because without them there are no objective means by which to evaluate funds. However, excessive focus on benchmarks can lead to poor decision-making, particularly with respect to understanding and evaluating risk. The Stock Analysis Division attempts to generate both strong absolute and relative returns over the long term by participating in the asset allocation discussion at the bureau level, making sub-asset allocation decisions where appropriate and constructing a portfolio with a higher level of risk-adjusted returns than its benchmark.



# SMRS

## Domestic Equity Holdings By Category 12/31/12

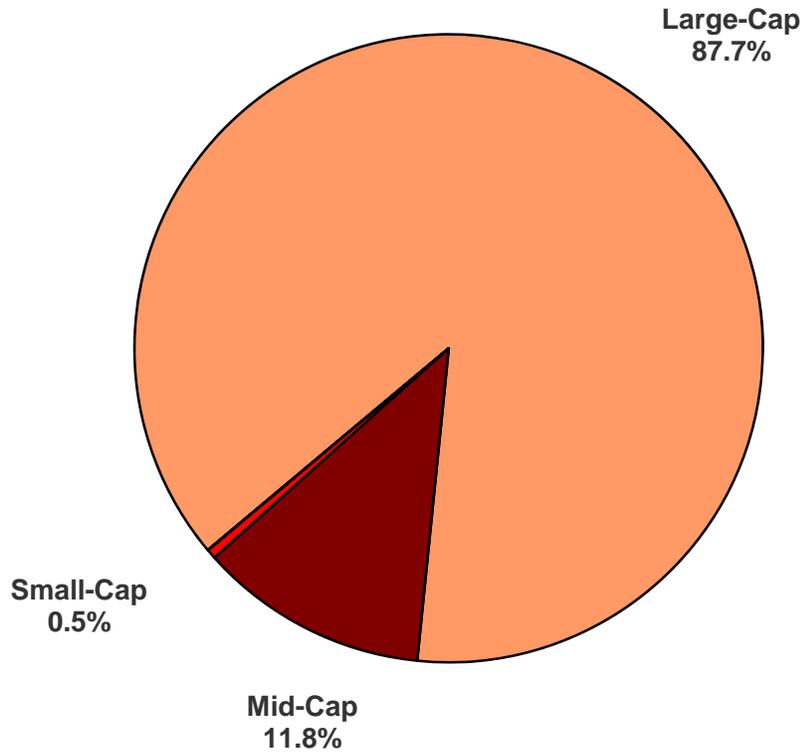


| <b>Market Value in Millions</b> |                 |               |                 |               |
|---------------------------------|-----------------|---------------|-----------------|---------------|
|                                 | <u>12/31/12</u> |               | <u>9/30/12</u>  |               |
| Active                          | \$7,021         | 52.4%         | \$7,562         | 54.2%         |
| Passive                         | 6,387           | 47.6%         | 6,397           | 45.8%         |
| <b>Total Domestic Equity</b>    | <b>\$13,408</b> | <b>100.0%</b> | <b>\$13,959</b> | <b>100.0%</b> |



# SMRS

## Domestic Equity Exposure By Market Cap 12/31/12

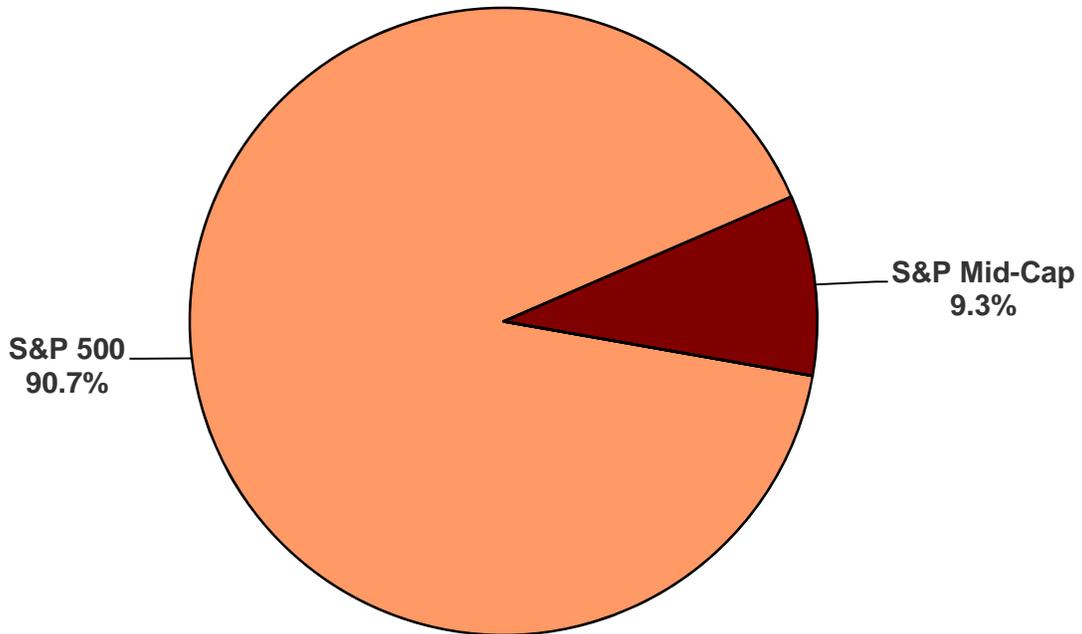


| <b>Market Value in Millions</b> |                 |               |                     |
|---------------------------------|-----------------|---------------|---------------------|
|                                 | <u>12/31/12</u> |               | <u>S&amp;P 1500</u> |
| Large-Cap (>\$7B)               | \$11,759        | 87.7%         | 85.4%               |
| Mid-Cap (>\$2 <\$7B)            | 1,582           | 11.8%         | 10.4%               |
| Small-Cap (<\$2B)               | 67              | 0.5%          | 4.2%                |
| <b>Total Domestic Equity</b>    | <b>\$13,408</b> | <b>100.0%</b> | <b>100.0%</b>       |



# SMRS

## Domestic Passive Equity Investments 12/31/12



| <b>Market Value in Millions</b> |                 |               |                  |
|---------------------------------|-----------------|---------------|------------------|
|                                 | <u>12/31/12</u> |               | <u>Benchmark</u> |
| S&P 500                         | \$5,792         | 90.7%         | 91.5%            |
| S&P Mid-Cap                     | 595             | 9.3%          | 8.5%             |
| <b>Total</b>                    | <b>\$6,387</b>  | <b>100.0%</b> | <b>100.0%</b>    |

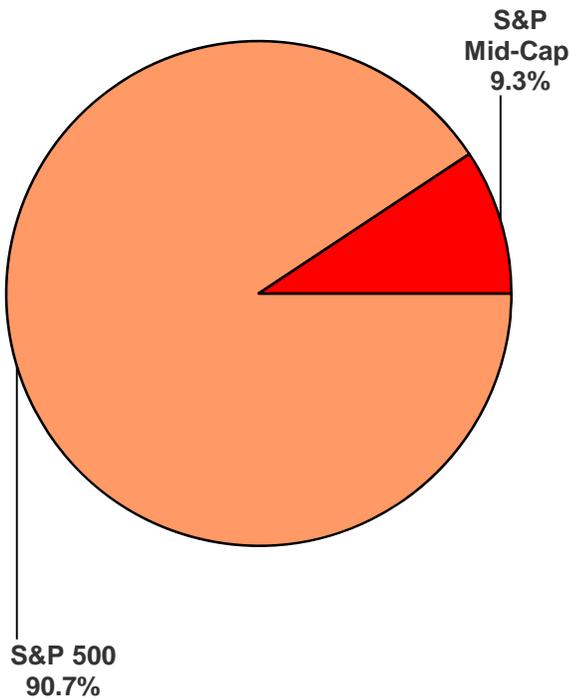


# SMRS

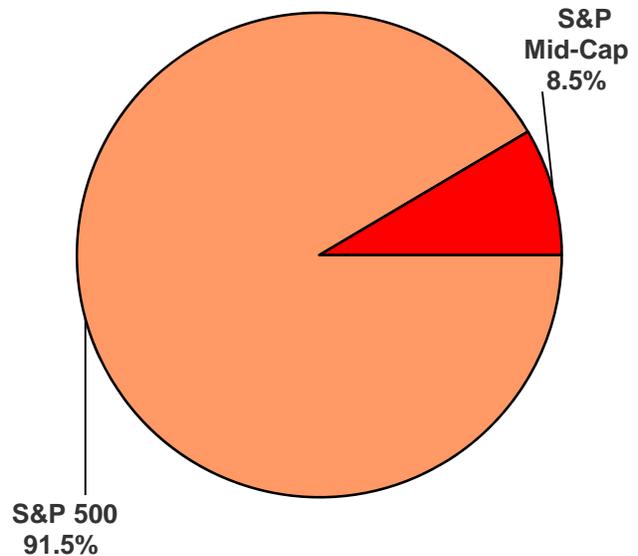
## Passive U.S. Equity Holdings

### 12/31/12

**SMRS Actual**



**Standard & Poor's 900**



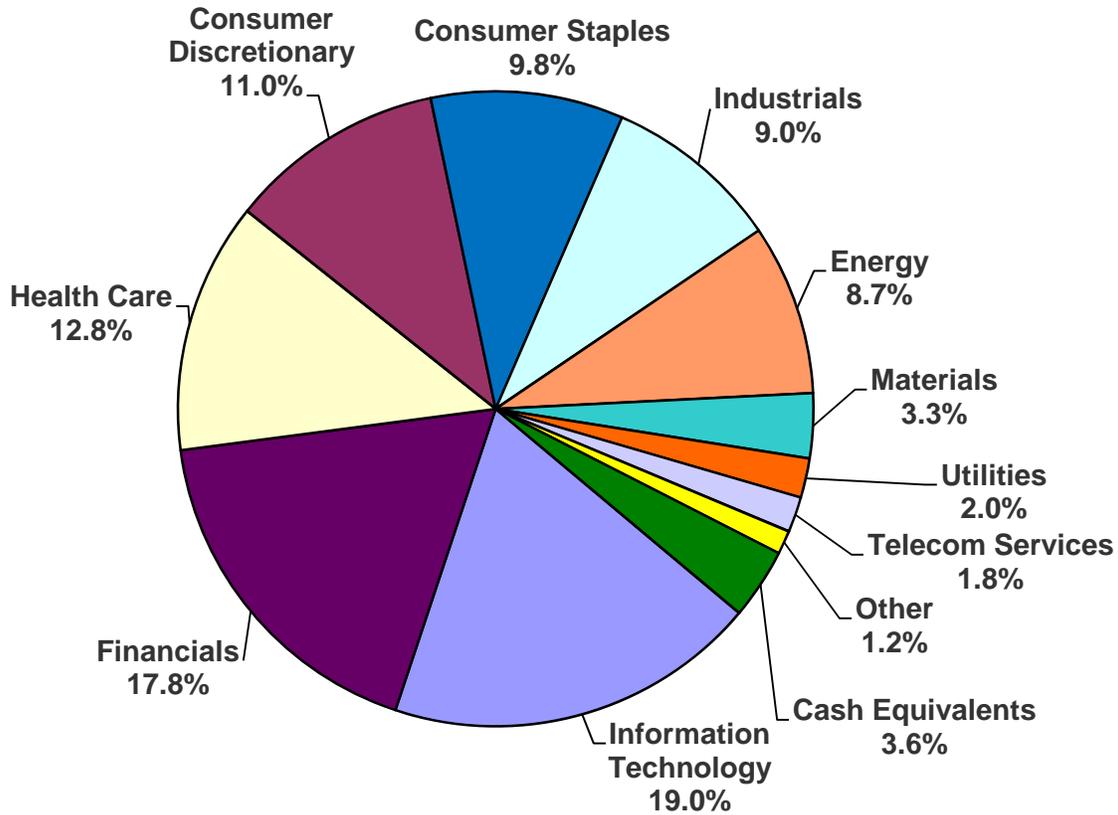
|              | <b>Market Value in Millions</b> |                |                  |                  |                |  |
|--------------|---------------------------------|----------------|------------------|------------------|----------------|--|
|              | <b>12/31/2012</b>               |                |                  | <b>9/30/2012</b> |                |  |
|              | <b>Assets</b>                   | <b>Percent</b> | <b>Benchmark</b> | <b>Assets</b>    | <b>Percent</b> |  |
| S&P 500      | \$5,792                         | 90.7%          | 91.5%            | \$5,820          | 91.0%          |  |
| S&P Mid-Cap  | 595                             | 9.3%           | 8.5%             | 577              | 9.0%           |  |
| <b>Total</b> | <b>\$6,387</b>                  | <b>100.0%</b>  | <b>100.0%</b>    | <b>\$6,397</b>   | <b>100.0%</b>  |  |



# SMRS

## All Domestic Equity Holdings By Category

### 12/31/12



|                          | <b>Market Value in Millions</b> |                |                  |                 |                |  |
|--------------------------|---------------------------------|----------------|------------------|-----------------|----------------|--|
|                          | <u>12/31/12</u>                 |                |                  | <u>9/30/12</u>  |                |  |
|                          | <u>Assets</u>                   | <u>Percent</u> | <u>Benchmark</u> | <u>Assets</u>   | <u>Percent</u> |  |
| Information Technology   | \$2,543                         | 19.0%          | 18.7%            | \$2,688         | 19.3%          |  |
| Financials               | 2,383                           | 17.8%          | 16.3%            | 2,376           | 17.0%          |  |
| Health Care              | 1,712                           | 12.8%          | 11.7%            | 1,906           | 13.7%          |  |
| Consumer Discretionary   | 1,471                           | 11.0%          | 11.8%            | 1,605           | 11.5%          |  |
| Consumer Staples         | 1,311                           | 9.8%           | 9.8%             | 1,354           | 9.7%           |  |
| Industrials              | 1,200                           | 9.0%           | 10.9%            | 1,259           | 9.0%           |  |
| Energy                   | 1,169                           | 8.7%           | 10.4%            | 1,266           | 9.1%           |  |
| Materials                | 449                             | 3.3%           | 4.0%             | 423             | 3.0%           |  |
| Utilities                | 272                             | 2.0%           | 3.6%             | 325             | 2.3%           |  |
| Telecom Services         | 243                             | 1.8%           | 2.8%             | 237             | 1.7%           |  |
| Other                    | 167                             | 1.2%           | 0.0%             | 95              | 0.7%           |  |
| <b>Total Investments</b> | <b>\$12,920</b>                 | <b>96.4%</b>   | <b>100.0%</b>    | <b>\$13,534</b> | <b>97.0%</b>   |  |
| Cash Equivalents         | 488                             | 3.6%           | 0.0%             | 425             | 3.0%           |  |
| <b>Total</b>             | <b>\$13,408</b>                 | <b>100.0%</b>  | <b>100.0%</b>    | <b>\$13,959</b> | <b>100.0%</b>  |  |



# SMRS

## All Domestic Equities Composite 12/31/12

|                       |                 |                |                |                |
|-----------------------|-----------------|----------------|----------------|----------------|
| <b>Date:</b>          | <u>12/31/12</u> | <u>9/30/12</u> | <u>6/30/12</u> | <u>3/31/12</u> |
| Assets (\$million):   | \$13,408        | \$13,959       | \$13,849       | \$14,435       |
| Number of Securities: | 1,394           | 1,534          | 1,617          | 1,388          |

Benchmark: S&P 1500

Description: The Domestic Equities Composite combines both the SMRS' All Actively Managed Composite and its index funds.

|  |             |                     |
|--|-------------|---------------------|
| <b>Characteristics:</b>                      | <u>SMRS</u> | <u>S&amp;P 1500</u> |
| Weighted Average Capitalization (\$billion): | \$93.0      | \$93.8              |
| Trailing 12-month P/E:                       | 14.8x       | 15.2x               |
| Forecast P/E:                                | 13.6x       | 14.0x               |
| Price/Book:                                  | 2.0x        | 2.1x                |
| Beta:  | 1.01        | 1.01                |
| Dividend Yield:                              | 2.1%        | 2.2%                |
| 3-5 Year EPS Growth Estimate:                | 11.1%       | 10.6%               |
| Return on Equity:                            | 18.7%       | 18.4%               |

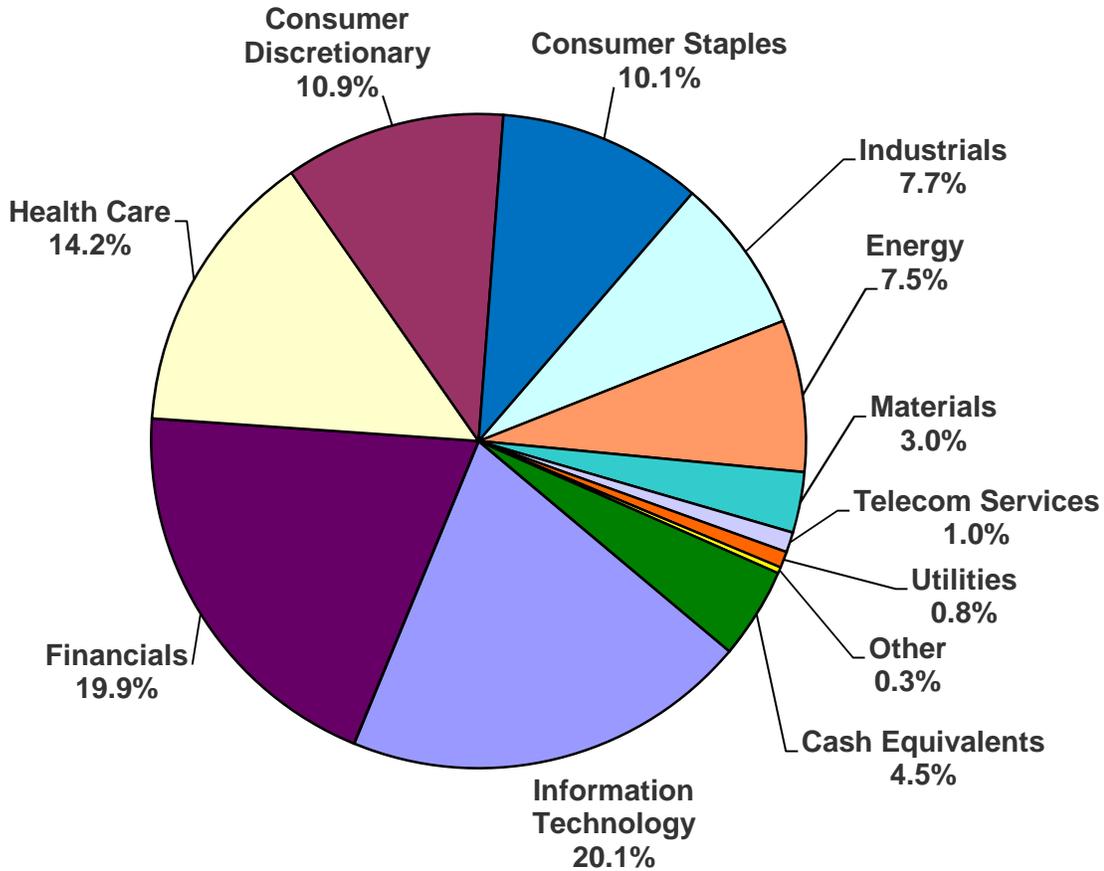
### TOP TEN HOLDINGS - All Domestic Equities 12/31/12

|                       | <u>Portfolio Weight</u> | <u>Total Shares</u> | <u>Price</u> | <u>YTD12 Total Return</u> | <u>Market Value</u>    |
|-----------------------|-------------------------|---------------------|--------------|---------------------------|------------------------|
| Apple Inc.            | 3.96%                   | 997,294             | \$532.17     | 32.59%                    | \$530,732,790          |
| SPDR S&P 500 ETF      | 2.00%                   | 1,886,050           | \$142.41     | 15.99%                    | 268,592,381            |
| Google Inc. Cl A      | 1.98%                   | 375,410             | \$707.38     | 9.52%                     | 265,557,526            |
| Johnson & Johnson     | 1.74%                   | 3,331,830           | \$70.10      | 10.83%                    | 233,561,283            |
| Exxon Mobil Corp.     | 1.55%                   | 2,404,011           | \$86.55      | 4.72%                     | 208,067,152            |
| Microsoft Corp.       | 1.36%                   | 6,829,387           | \$26.71      | 5.84%                     | 182,410,878            |
| Procter & Gamble Co.  | 1.28%                   | 2,523,695           | \$67.89      | 5.18%                     | 171,333,654            |
| Abbott Laboratories   | 1.27%                   | 2,596,940           | \$65.50      | 20.30%                    | 170,099,570            |
| Bank of America Corp. | 1.21%                   | 13,975,116          | \$11.61      | 109.83%                   | 162,251,097            |
| PepsiCo Inc.          | <u>1.17%</u>            | 2,286,839           | \$68.43      | 6.40%                     | <u>156,488,393</u>     |
| <b>TOTAL</b>          | <u>17.52%</u>           |                     |              |                           | <u>\$2,349,094,723</u> |



# SMRS

## All Active Domestic Equity Holdings By Category 12/31/12



|                        | Market Value in Millions |               |               |                |               |           |
|------------------------|--------------------------|---------------|---------------|----------------|---------------|-----------|
|                        | 12/31/12                 |               |               | 9/30/12        |               |           |
|                        | Assets                   | Percent       | Benchmark     | Assets         | Percent       | Benchmark |
| Information Technology | \$1,409                  | 20.1%         | 18.7%         | \$1,484        | 19.6%         |           |
| Financials             | 1,399                    | 19.9%         | 16.3%         | 1,443          | 19.1%         |           |
| Health Care            | 999                      | 14.2%         | 11.7%         | 1,183          | 15.6%         |           |
| Consumer Discretionary | 763                      | 10.9%         | 11.8%         | 915            | 12.1%         |           |
| Consumer Staples       | 706                      | 10.1%         | 9.8%          | 733            | 9.7%          |           |
| Industrials            | 543                      | 7.7%          | 10.9%         | 625            | 8.3%          |           |
| Energy                 | 530                      | 7.5%          | 10.4%         | 605            | 8.0%          |           |
| Materials              | 208                      | 3.0%          | 4.0%          | 197            | 2.6%          |           |
| Telecom Services       | 72                       | 1.0%          | 2.8%          | 51             | 0.7%          |           |
| Utilities              | 54                       | 0.8%          | 3.6%          | 100            | 1.3%          |           |
| Other                  | 19                       | 0.3%          | 0.0%          | 14             | 0.2%          |           |
| Total Investments      | \$6,702                  | 95.5%         | 100.0%        | \$7,350        | 97.2%         |           |
| Cash Equivalents       | 319                      | 4.5%          | 0.0%          | 212            | 2.8%          |           |
| <b>Total</b>           | <b>\$7,021</b>           | <b>100.0%</b> | <b>100.0%</b> | <b>\$7,562</b> | <b>100.0%</b> |           |



# SMRS

## All Actively Managed Composite 12/31/12

|                       |                 |                |                |                |
|-----------------------|-----------------|----------------|----------------|----------------|
| Date:                 | <u>12/31/12</u> | <u>9/30/12</u> | <u>6/30/12</u> | <u>3/31/12</u> |
| Assets (\$million):   | \$7,021         | \$7,562        | \$7,384        | \$7,769        |
| Number of Securities: | 1,143           | 1,422          | 1,484          | 1,069          |
| Benchmark:            | S&P 1500        |                |                |                |

Description: The Actively Managed Composite is designed to add consistent alpha by investing in managers with value-added, but diverse strategies. While the expectation is that most will outperform over time, the composite is designed such that they do so during differing parts of the business cycle.

| <b>Characteristics:</b>                      | <u>SMRS</u> | <u>S&amp;P 1500</u> |
|--|-------------|---------------------|
| Weighted Average Capitalization (\$billion): | \$88.9      | \$93.8              |
| Trailing 12-month P/E:                       | 14.4x       | 15.2x               |
| Forecast P/E:                                | 13.3x       | 14.0x               |
| Price/Book:                                  | 1.9x        | 2.1x                |
| Beta:  | 1.01        | 1.01                |
| Dividend Yield:                              | 2.0%        | 2.2%                |
| 3-5 Year EPS Growth Estimate:                | 11.8%       | 10.6%               |
| Return on Equity:                            | 18.7%       | 18.4%               |

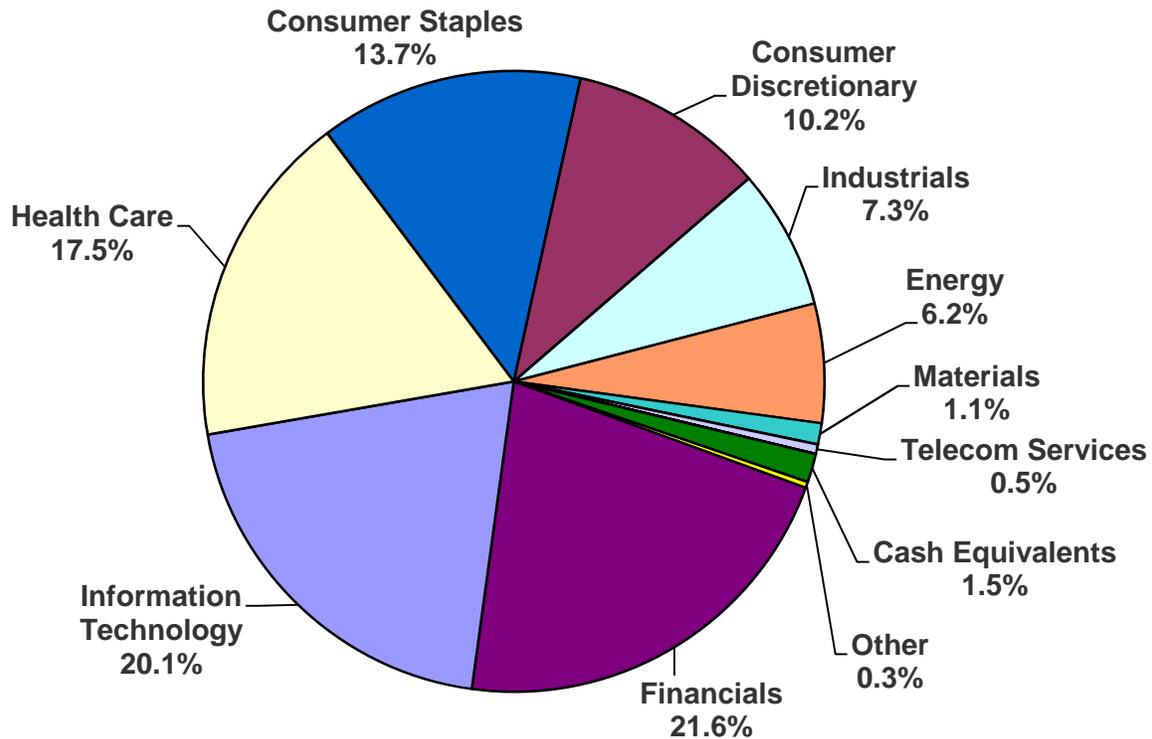
|                          | <u>Weight</u> | <u>Shares</u> | <u>Price</u> | <u>Return</u> | <u>Value</u>           |
|--------------------------|---------------|---------------|--------------|---------------|------------------------|
| Apple Inc.               | 4.47%         | 590,097       | \$532.17     | 32.59%        | \$314,033,602          |
| Google Inc. Cl A         | 2.62%         | 260,206       | \$707.38     | 9.52%         | 184,064,520            |
| Johnson & Johnson        | 2.13%         | 2,132,284     | \$70.10      | 10.83%        | 149,473,108            |
| Abbott Laboratories      | 1.78%         | 1,912,715     | \$65.50      | 20.30%        | 125,282,833            |
| Goldman Sachs Group Inc. | 1.67%         | 921,132       | \$127.56     | 43.37%        | 117,499,598            |
| PepsiCo Inc.             | 1.58%         | 1,617,270     | \$68.43      | 6.40%         | 110,669,786            |
| Bank of America Corp.    | 1.54%         | 9,309,699     | \$11.61      | 109.83%       | 108,085,605            |
| Charles Schwab Corp.     | 1.38%         | 6,726,692     | \$14.36      | 29.91%        | 96,595,297             |
| Microsoft Corp.          | 1.35%         | 3,550,556     | \$26.71      | 5.84%         | 94,834,286             |
| Kellogg Co.              | <u>1.34%</u>  | 1,681,638     | \$55.85      | 14.19%        | <u>93,919,482</u>      |
| TOTAL                    | <u>19.86%</u> |               |              |               | <u>\$1,394,458,118</u> |



# SMRS

## Domestic Active Equity - Large-Cap

### All Internal Domestic Equity Holdings By Category 12/31/12



#### Market Value in Millions

|                        | 12/31/12       |               |               | 9/30/12        |               |
|------------------------|----------------|---------------|---------------|----------------|---------------|
|                        | Assets         | Percent       | Benchmark     | Assets         | Percent       |
| Financials             | \$863          | 21.6%         | 15.6%         | \$780          | 19.5%         |
| Information Technology | 801            | 20.1%         | 19.0%         | 853            | 21.3%         |
| Health Care            | 697            | 17.5%         | 12.0%         | 756            | 18.9%         |
| Consumer Staples       | 547            | 13.7%         | 10.6%         | 519            | 13.0%         |
| Consumer Discretionary | 407            | 10.2%         | 11.5%         | 449            | 11.2%         |
| Industrials            | 291            | 7.3%          | 10.1%         | 253            | 6.3%          |
| Energy                 | 249            | 6.2%          | 11.0%         | 280            | 7.0%          |
| Materials              | 43             | 1.1%          | 3.6%          | 37             | 0.9%          |
| Telecom Services       | 20             | 0.5%          | 3.1%          | 15             | 0.4%          |
| Utilities              | 0              | 0.0%          | 3.5%          | 20             | 0.5%          |
| Other                  | 12             | 0.3%          | 0.0%          | 1              | 0.0%          |
| Total Investments      | \$3,930        | 98.5%         | 100.0%        | \$3,963        | 99.0%         |
| Cash Equivalents       | 62             | 1.5%          | 0.0%          | 39             | 1.0%          |
| <b>Total</b>           | <b>\$3,992</b> | <b>100.0%</b> | <b>100.0%</b> | <b>\$4,002</b> | <b>100.0%</b> |



# SMRS

## Large-Cap Internal Active Composite

### 12/31/12

|                       |                 |                |                |                |
|-----------------------|-----------------|----------------|----------------|----------------|
| <b>Date:</b>          | <u>12/31/12</u> | <u>9/30/12</u> | <u>6/30/12</u> | <u>3/31/12</u> |
| Assets (\$million):   | \$3,992         | \$4,002        | \$4,025        | \$4,129        |
| Number of Securities: | 170             | 159            | 162            | 157            |
| Benchmark:            | S&P 500         |                |                |                |

**Description:** The Large-Cap Internal Active portfolio represents a composite of the division's internally managed active portfolios. This currently includes Large-Cap Core, Large-Cap Growth, Large-Cap Value, All-Cap GARP, and the Absolute Return Income Fund.

|  |             |                    |
|--|-------------|--------------------|
| <b>Characteristics:</b>                      | <u>SMRS</u> | <u>S&amp;P 500</u> |
| Weighted Average Capitalization (\$billion): | \$108.2     | \$106.0            |
| Trailing 12-month P/E:                       | 14.9x       | 14.9x              |
| Forecast P/E:                                | 13.2x       | 13.7x              |
| Price/Book:                                  | 2.0x        | 2.1x               |
| Beta:  | 1.03        | 1.01               |
| Dividend Yield:                              | 2.1%        | 2.3%               |
| 3-5 Year EPS Growth Estimate:                | 11.3%       | 10.3%              |
| Return on Equity:                            | 20.3%       | 19.2%              |

### TOP TEN HOLDINGS - Large-Cap Internal Active 12/31/12

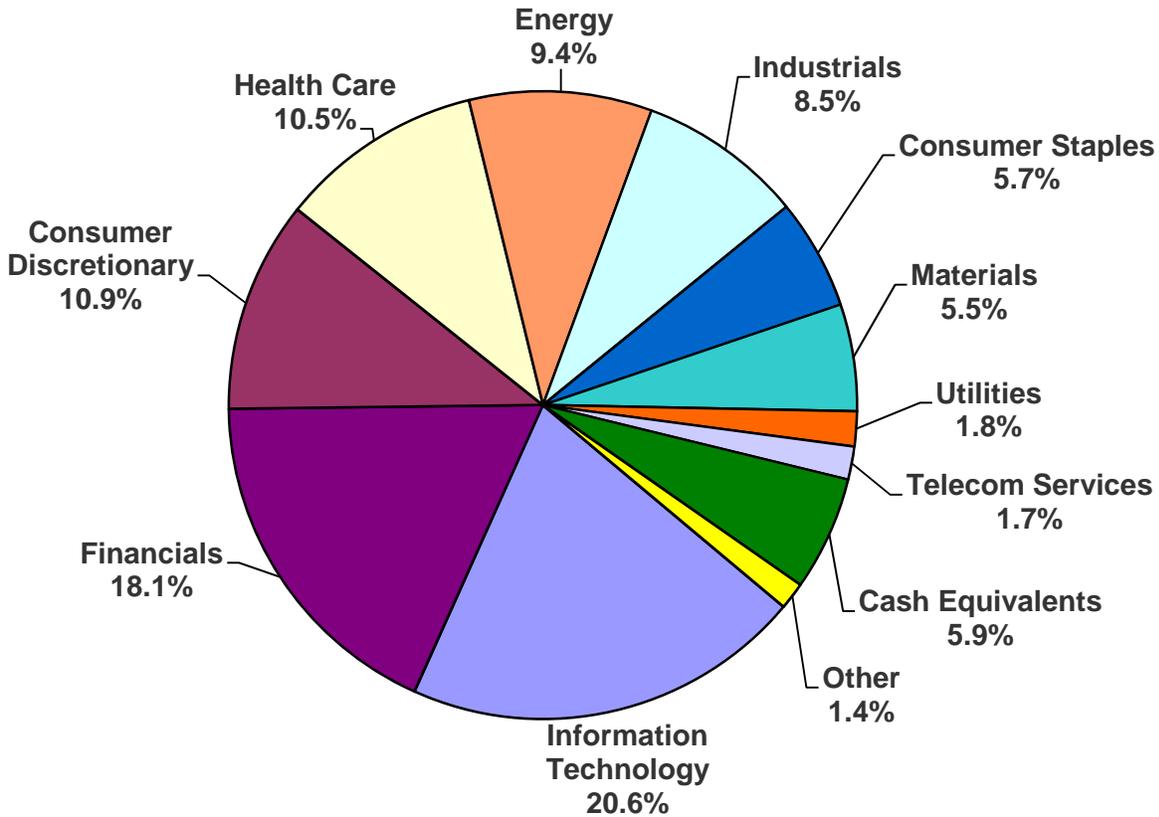
|                          | <u>Portfolio Weight</u> | <u>Total Shares</u> | <u>Price</u> | <u>YTD12 Total Return</u> | <u>Market Value</u>    |
|--------------------------|-------------------------|---------------------|--------------|---------------------------|------------------------|
| Apple Inc.               | 6.00%                   | 450,006             | \$532.17     | 32.59%                    | \$239,480,976          |
| Google Inc. Cl A         | 3.70%                   | 209,049             | \$707.38     | 9.52%                     | 147,877,082            |
| Johnson & Johnson        | 3.34%                   | 1,905,011           | \$70.10      | 10.83%                    | 133,541,271            |
| Abbott Laboratories      | 2.73%                   | 1,662,826           | \$65.50      | 21.30%                    | 108,915,103            |
| Goldman Sachs Group Inc. | 2.57%                   | 804,429             | \$127.56     | 43.37%                    | 102,612,963            |
| PepsiCo Inc.             | 2.47%                   | 1,443,815           | \$68.43      | 6.40%                     | 98,800,260             |
| Bank of America Corp.    | 2.43%                   | 8,342,283           | \$11.61      | 109.83%                   | 96,853,906             |
| Charles Schwab Corp.     | 2.41%                   | 6,711,992           | \$14.36      | 29.91%                    | 96,384,205             |
| Kellogg Co.              | 2.30%                   | 1,644,308           | \$55.85      | 14.19%                    | 91,834,602             |
| General Mills Inc.       | <u>2.10%</u>            | 2,075,215           | \$40.42      | 3.28%                     | <u>83,880,190</u>      |
| <b>TOTAL</b>             | <u>30.06%</u>           | 13                  |              |                           | <u>\$1,200,180,558</u> |



# SMRS

## Domestic Active Equity - Large-Cap

### All External Domestic Equity Holdings By Category 12/31/12



#### Market Value in Millions

|                          | 12/31/12       |               |               | 9/30/12        |               |
|--------------------------|----------------|---------------|---------------|----------------|---------------|
|                          | Assets         | Percent       | Benchmark     | Assets         | Percent       |
| Information Technology   | \$625          | 20.6%         | 18.7%         | \$648          | 18.2%         |
| Financials               | 548            | 18.1%         | 16.3%         | 673            | 18.9%         |
| Consumer Discretionary   | 331            | 10.9%         | 11.8%         | 457            | 12.8%         |
| Health Care              | 318            | 10.5%         | 11.7%         | 441            | 12.4%         |
| Energy                   | 286            | 9.4%          | 10.4%         | 330            | 9.3%          |
| Industrials              | 258            | 8.5%          | 10.9%         | 364            | 10.2%         |
| Consumer Staples         | 172            | 5.7%          | 9.8%          | 224            | 6.3%          |
| Materials                | 165            | 5.5%          | 4.0%          | 160            | 4.5%          |
| Utilities                | 54             | 1.8%          | 3.6%          | 81             | 2.3%          |
| Telecom Services         | 52             | 1.7%          | 2.8%          | 36             | 1.0%          |
| Other                    | 42             | 1.4%          | 0.0%          | 16             | 0.4%          |
| <b>Total Investments</b> | <b>\$2,851</b> | <b>94.1%</b>  | <b>100.0%</b> | <b>\$3,430</b> | <b>96.3%</b>  |
| Cash Equivalents         | 178            | 5.9%          | 0.0%          | 130            | 3.7%          |
| <b>Total</b>             | <b>\$3,029</b> | <b>100.0%</b> | <b>100.0%</b> | <b>\$3,560</b> | <b>100.0%</b> |



# SMRS

## All-Cap External Active 12/31/12

|                       |  |                |                |
|-----------------------|--|----------------|----------------|
| <b>Date:</b>          | <u>12/31/12</u>  | <u>9/30/12</u> | <u>6/30/12</u> |
| Assets (\$million):   | \$3,029  | \$3,560        | \$3,359        |
| Number of Securities: | 1,087  | 1,383          | 1,443          |
| Benchmark:            | S&P 1500   |                |                |
| Description:          | The All-Cap External Active portfolio represents a composite of the division's externally managed active portfolios across the market capitalization spectrum. |                |                |

|  |             |                     |
|--|-------------|---------------------|
| <b>Characteristics:</b>                      | <u>SMRS</u> | <u>S&amp;P 1500</u> |
| Weighted Average Capitalization (\$billion): | \$65.0      | \$93.9              |
| Trailing 12-month P/E:                       | 14.4x       | 15.2x               |
| Forecast P/E:                                | 13.5x       | 14.0x               |
| Price/Book:                                  | 1.8x        | 2.1x                |
| Beta:  | 1.00        | 1.01                |
| Dividend Yield:                              | 1.8%        | 2.2%                |
| 3-5 Year EPS Growth Estimate:                | 12.4%       | 10.6%               |
| Return on Equity:                            | 16.6%       | 18.4%               |

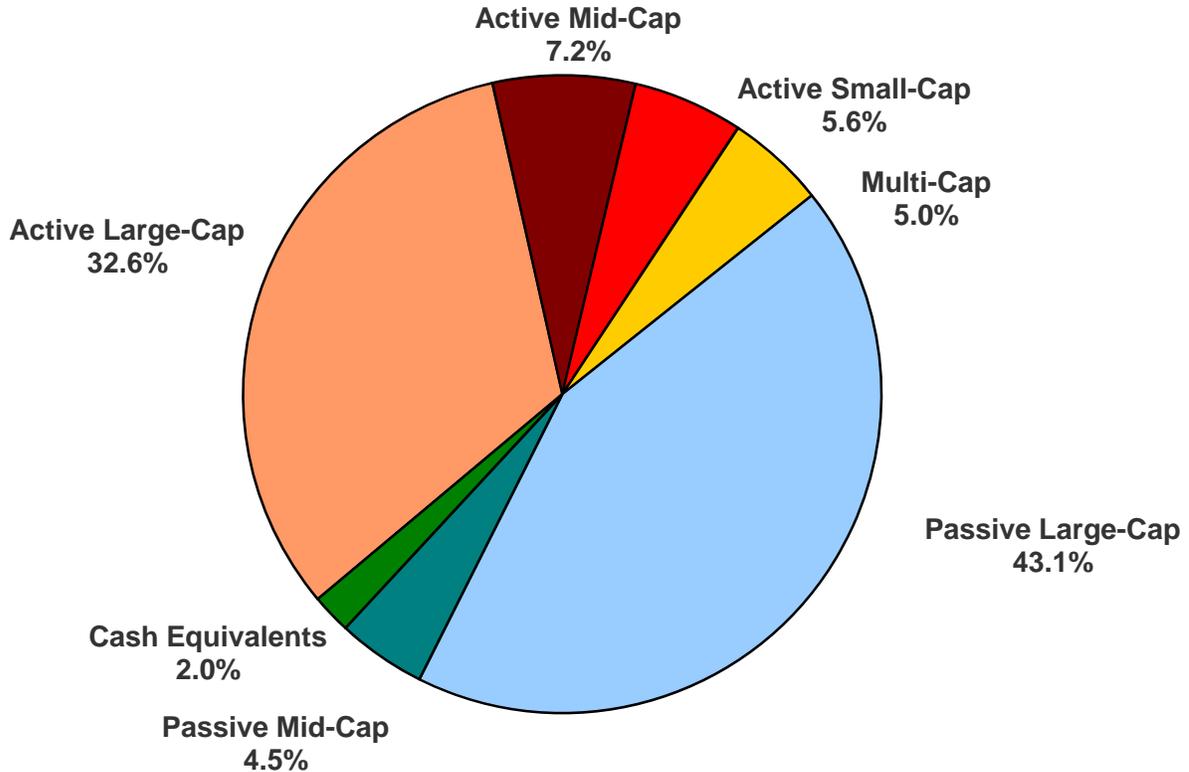
### TOP TEN HOLDINGS - All-Cap External Active 12/31/12

|                              | <u>Portfolio Weight</u> | <u>Total Shares</u> | <u>Price</u> | <u>YTD12 Total Return</u> | <u>Market Value</u>  |
|------------------------------|-------------------------|---------------------|--------------|---------------------------|----------------------|
| Apple Inc.                   | 2.46%                   | 140,091             | \$532.17     | 32.59%                    | \$74,552,627         |
| Microsoft Corp.              | 1.62%                   | 1,837,930           | \$26.71      | 5.84%                     | 49,090,559           |
| Berkshire Hathaway Inc. Cl B | 1.39%                   | 468,179             | \$89.70      | 17.56%                    | 41,995,656           |
| Oracle Corp.                 | 1.33%                   | 1,205,575           | \$33.32      | 31.72%                    | 40,169,759           |
| Cisco Systems Inc.           | 1.30%                   | 1,998,140           | \$19.65      | 11.60%                    | 39,262,252           |
| Google Inc. Cl A             | 1.19%                   | 51,157              | \$707.38     | 9.52%                     | 36,187,439           |
| Visa Inc.                    | 1.12%                   | 222,892             | \$151.58     | 50.47%                    | 33,785,969           |
| Chevron Corp.                | 0.97%                   | 271,612             | \$108.14     | 5.08%                     | 29,372,122           |
| Samsung Electronics Co Prf   | 0.87%                   | 33,217              | \$795.83     | 19.19%                    | 26,435,220           |
| National Oilwell Varco Inc.  | <u>0.85%</u>            | 375,679             | \$68.35      | 1.20%                     | <u>25,677,660</u>    |
| <b>TOTAL</b>                 | <u>13.09%</u>           |                     |              |                           | <u>\$396,529,262</u> |



# SMRS

## Domestic Equity Holdings By Category 12/31/12



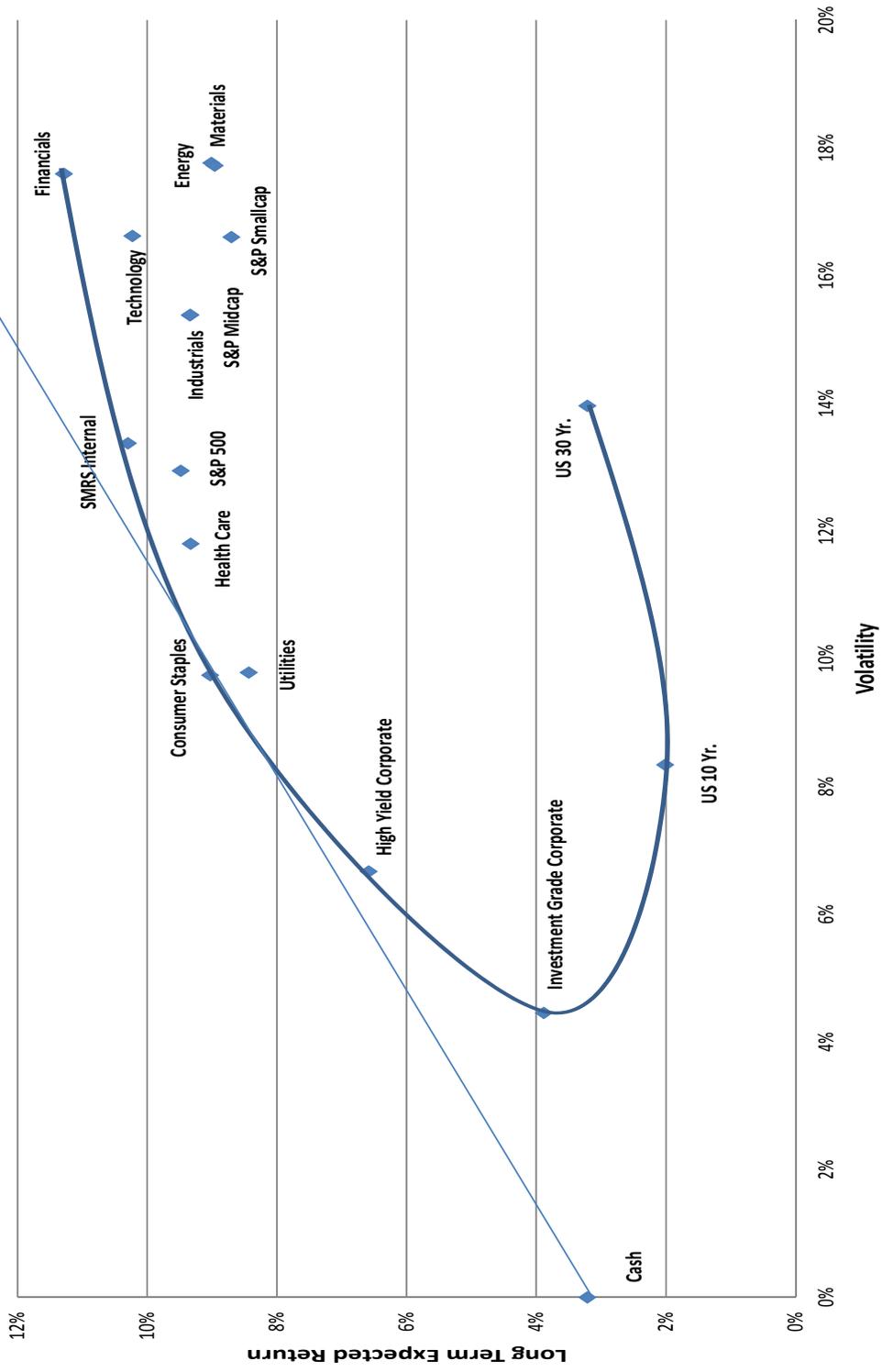
| <b>Market Value in Millions</b> |                 |               |                 |               |
|---------------------------------|-----------------|---------------|-----------------|---------------|
|                                 | <u>12/31/12</u> |               | <u>9/30/12</u>  |               |
| <b>Active</b>                   |                 |               |                 |               |
| Large-Cap                       | \$4,377         | 32.6%         | \$5,314         | 38.1%         |
| Mid-Cap                         | 968             | 7.2%          | 728             | 5.2%          |
| Small-Cap                       | 748             | 5.6%          | 638             | 4.6%          |
| Multi-Cap                       | 673             | 5.0%          | 629             | 4.5%          |
| <b>Total Active Equity</b>      | <b>\$6,766</b>  | <b>50.4%</b>  | <b>\$7,309</b>  | <b>52.4%</b>  |
| <b>Passive</b>                  |                 |               |                 |               |
| Large-Cap                       | \$5,779         | 43.1%         | \$5,750         | 41.2%         |
| Mid-Cap                         | 594             | 4.5%          | 576             | 4.1%          |
| <b>Total Passive Equity</b>     | <b>\$6,373</b>  | <b>47.6%</b>  | <b>\$6,326</b>  | <b>45.3%</b>  |
| <b>Total Investments</b>        | <b>\$13,139</b> | <b>98.0%</b>  | <b>\$13,635</b> | <b>97.7%</b>  |
| Cash Equivalents                | 269             | 2.0%          | 324             | 2.3%          |
| <b>Total Domestic Equity</b>    | <b>\$13,408</b> | <b>100.0%</b> | <b>\$13,959</b> | <b>100.0%</b> |



# SMRS Domestic Equities 12/31/12

|  | INDEX       |             | CORE           | CONCENTRATED<br>HIGH ALPHA |            | TOTAL               | %      | S&P 1500 |
|--|-------------|-------------|----------------|----------------------------|------------|---------------------|--------|----------|
|  | INDEX       | INDEX       | (in thousands) | HIGH ALPHA                 | HIGH ALPHA |                     |        |          |
| <b>Large-Cap</b>                       |             |             |                |                            |            |                     |        |          |
| Index S&P 500                          | \$5,791,974 |             |                | \$1,547,705                |            | \$5,791,974         |        |          |
| Large-Cap Core                         |             |             |                | 1,050,882                  |            | 1,547,705           |        |          |
| Large-Cap Growth                       |             |             |                | 688,860                    |            | 1,050,882           |        |          |
| Large-Cap Value                        |             |             |                | 239,320                    |            | 688,860             |        |          |
| All-Cap GARP                           |             |             |                | 111,092                    |            | 239,320             |        |          |
| Edgewood Large-Cap Growth              |             |             |                | 189,006                    |            | 111,092             |        |          |
| JP Morgan Large-Cap Growth             |             |             |                |                            |            | 189,006             |        |          |
| LSV Large-Cap Value                    |             | \$227,147   |                |                            |            | 227,147             |        |          |
| Epoch Large-Cap Value                  |             | 350,544     |                |                            |            | 350,544             |        |          |
| Absolute Return Income Fund            |             |             |                | 345,599                    |            | 345,599             |        |          |
| Tactical Asset Allocation              |             |             |                | 120,069                    |            | <u>120,069</u>      |        |          |
| <b>Total</b>                           |             |             |                |                            |            | <b>\$10,662,198</b> | 85.9%  | 88.4%    |
| <b>Mid-Cap</b>                         |             |             |                |                            |            |                     |        |          |
| S&P 400 Index                          | \$595,008   |             |                |                            |            | \$595,008           |        |          |
| Champlain Mid-Cap Core                 |             |             | \$79,330       |                            |            | 79,330              |        |          |
| Cramer Rosenthal McGlynn Mid-Cap Value |             |             |                | \$209,293                  |            | 209,293             |        |          |
| Los Angeles Capital Mid-Cap Plus Core  |             |             | 73,253         |                            |            | 73,253              |        |          |
| Munder Mid-Cap Core                    |             |             | 49,979         |                            |            | <u>49,979</u>       |        |          |
| <b>Total</b>                           |             |             |                |                            |            | <b>\$1,006,863</b>  | 8.1%   | 7.8%     |
| <b>Small-Cap</b>                       |             |             |                |                            |            |                     |        |          |
| Champlain Small-Cap Core               |             |             |                | \$56,067                   |            | \$56,067            |        |          |
| Donald Smith Small-Cap Value           |             |             |                | 324,276                    |            | 324,276             |        |          |
| Fisher All-Cap Core                    |             |             | \$308,886      |                            |            | 308,886             |        |          |
| Northpointe Small-Cap Value            |             |             |                | 58,806                     |            | <u>58,806</u>       |        |          |
| <b>Total</b>                           |             |             |                |                            |            | <b>\$748,035</b>    | 6.0%   | 3.8%     |
| <b>All-Cap Managers</b>                |             |             |                |                            |            |                     | 100.0% | 100.0%   |
| Attucks Asset Management               |             |             | \$164,652      |                            |            | \$164,652           |        |          |
| Artisan All-Cap Value                  |             |             |                | \$556,287                  |            | 556,287             |        |          |
| Bivium                                 |             |             | 150,231        |                            |            | 150,231             |        |          |
| Seizert Capital partners All-Cap Core  |             |             |                | 119,687                    |            | <u>119,687</u>      |        |          |
| <b>Total</b>                           |             |             |                |                            |            | <b>\$990,857</b>    |        |          |
| <b>TOTAL</b>                           | \$6,386,982 | \$1,089,139 |                | \$4,940,975                |            | <b>\$13,407,953</b> |        |          |

# Selected Return & Volatility Estimates



## Internal Active Portfolio, Equity Return Expectations 12/31/12

### Return Assumption Estimates

|                                   | <u>Yield to Maturity ****</u> | <u>Normal Dividend Yield ***</u> | <u>LT Growth Rate ***</u> |
|-----------------------------------|-------------------------------|----------------------------------|---------------------------|
| <b>SAD Internal Active Equity</b> | <b>10.3%</b>                  | <b>5.3%</b>                      | <b>5.0%</b>               |
| S&P 500 Large-Cap                 | 9.5%                          | 4.0%                             | <b>5.5%</b>               |
| S&P 400 Mid-Cap                   | 9.3%                          | 2.3%                             | <b>7.0%</b>               |
| S&P 600 Small-Cap                 | 8.7%                          | 1.7%                             | <b>7.0%</b>               |
| US 30 Year Treasury               | 2.9%                          | 2.9%                             | 0.0%                      |

### Trailing 12 Month and Normalized Earnings Characteristics

|                                   | <u>TTM Price/Earnings</u> | <u>TTM Dividend Yield **</u> | <u>Normal Price/Earnings</u> |
|-----------------------------------|---------------------------|------------------------------|------------------------------|
| <b>SAD Internal Active Equity</b> | <b>14.0</b>               | <b>4.1%</b>                  | <b>12.4</b>                  |
| S&P 500 Large-Cap                 | 15.1                      | 3.5%                         | 15.6                         |
| S&P 400 Mid-Cap                   | 19.7                      | 2.2%                         | 17.9                         |
| S&P 600 Small-Cap                 | 20.6                      | 1.4%                         | 18.8                         |

### Normalized Earnings & Dividend Characteristics

|                                   | <u>Normal Earnings Yield *</u> | <u>Normal Payout Ratio</u> | <u>Normal Dividend Yield **</u> |
|-----------------------------------|--------------------------------|----------------------------|---------------------------------|
| <b>SAD Internal Active Equity</b> | <b>8.1%</b>                    | <b>66%</b>                 | <b>5.3%</b>                     |
| S&P 500 Large-Cap                 | 6.4%                           | 62%                        | 4.0%                            |
| S&P 400 Mid-Cap                   | 5.6%                           | 42%                        | 2.3%                            |
| S&P 600 Small-Cap                 | 5.3%                           | 32%                        | 1.7%                            |

### Portfolio and Benchmark Risk Estimates

|                                   | <u>Yield to Maturity ****</u> | <u>Portfolio Standard Deviation</u> | <u>Yield/Volatility</u> |
|-----------------------------------|-------------------------------|-------------------------------------|-------------------------|
| <b>SAD Internal Active Equity</b> | <b>10.3%</b>                  | <b>13.4%</b>                        | <b>0.77</b>             |
| S&P 500                           | 9.5%                          | 12.9%                               | 0.73                    |
| S&P 400                           | 9.3%                          | 15.4%                               | 0.61                    |
| S&P 600                           | 8.7%                          | 16.6%                               | 0.52                    |
| US 30 Year Treasury               | 2.9%                          | 14.0%                               | 0.21                    |

\*Earnings Yield = Earnings/Price

\*\* Includes Share Buybacks

\*\*\* LT Growth Rate Calculation: Return on Equity \* (1-Dividend Payout Ratio)

\*\*\*\* Yield to Maturity Formula: Dividend Yield + LT Growth Rate

\* Calculated internally rather than by State Street in order to exclude the effect of securities held by SMRS, but not selected by the portfolio manager.

# Performance Persistence Analysis #1

- As illustrated by the below charts, RVK found no significant evidence of performance persistence by analyzing historical manager return data.

**Rank Persistency of Top Quartile Managers (based on 5 year rolling total returns)**

| Top Quartile mngrs ranking above MEDIAN through 12.30.2010 | Core US Fixed Income | Large Cap US Growth | Large Cap US Core | Large Cap US Value | Small Cap US Core | EAFE Core |
|--|----------------------|---------------------|-------------------|--------------------|-------------------|-----------|
| % above median based on 1991-1995 rank                     | 47%                  | 27%                 | 29%               | 36%                | n/a               | n/a       |
| % above median based on 1996-2000 rank                     | 43%                  | 20%                 | 30%               | 24%                | 27%               | 33%       |
| % above median based on 2001-2005 rank                     | 41%                  | 42%                 | 39%               | 34%                | 62%               | 36%       |

**50% is considered random, greater than 50 is desirable**

Example: 47% of top quartile Core Fixed Income managers (rank based on 1991-1995 five year total return) ranked above median for 1996-2010 period.

**Rank Persistency of Top Quartile Managers (based on 3 year rolling total returns)**

| Top Quartile mngrs ranking above MEDIAN through 12.30.2010 | Core US Fixed Income | Large Cap US Growth | Large Cap US Core | Large Cap US Value | Small Cap US Core | EAFE Core |
|--|----------------------|---------------------|-------------------|--------------------|-------------------|-----------|
| % above median based on 1990-1992 rank                     | 31%                  | 36%                 | 54%               | 36%                | n/a               | n/a       |
| % above median based on 1993-1995 rank                     | 59%                  | 32%                 | 37%               | 43%                | n/a               | n/a       |
| % above median based on 1996-1998 rank                     | 43%                  | 28%                 | 27%               | 21%                | 27%               | 22%       |
| % above median based on 1999-2001 rank                     | 44%                  | 41%                 | 52%               | 44%                | 67%               | 42%       |
| % above median based on 2002-2004 rank                     | 45%                  | 39%                 | 35%               | 39%                | 42%               | 26%       |
| % above median based on 2005-2007 rank                     | 57%                  | 24%                 | 40%               | 51%                | 57%               | 44%       |

**50% is considered random, greater than 50 is desirable**

Data Source: eVestment Alliance. <https://www.evestment.com>.

# Consistency Analysis #1

## Top Quartile Managers Also Experience Down Periods

- ▶ An analysis of top-quartile managers with 10+ year track records (ranks as of 12/31/2010) indicates that even top-quartile managers may experience a sustained period of below-median returns.
  - ▶ This period of underperformance may last several months, or even multiple years.
  - ▶ Following a period of underperformance, the managers in the study often experienced a significant performance recovery.

| As of 12.31.2010 <sup>(1)</sup> | No. of products with 10 yr record |              | % of top Q mngrs that ranked below median... for 1 or more quarters | Avg no. of consecutive Qs spent below median <sup>(2)</sup> | No. mngrs who recovered from "down period" by 09.30.2010 <sup>(3), (4)</sup> | Avg rank of the recovered mngrs following 1st "down" period <sup>(4)</sup> |
|---------------------------------|-----------------------------------|--------------|---|---|--|--|
|                                 | Total                             | Top Quartile |   |   |  |  |
| US Large Cap Value              | 176                               | 44           | 89%   | 7.6   | 17   | 26.5   |
| US Large Cap Growth             | 204                               | 51           | 92%   | 5.6   | 24   | 28.1   |
| US Small Cap Value              | 124                               | 31           | 94%   | 4.3   | 11   | 27.3   |
| US Small Cap Growth             | 116                               | 29           | 93%   | 6.3   | 16   | 31.6   |
| Fixed Income - Core             | 164                               | 41           | 90%   | 5.6   | 24   | 24.4   |
| Fixed Income - High Yield       | 72                                | 18           | 94%   | 4.2   | 8  | 29.0   |
| Non-US Equity - EAFE Core       | 40                                | 10           | 90%   | 5.6   | 6  | 22.4   |
| Non-US Equity - Emerging        | 72                                | 18           | 94%   | 5.0   | 6  | 26.7   |

(1) For this analysis we used quarterly fund ranks for three year rolling periods; ranks are based on total gross of fees returns.

(2) The average is calculated on below median periods lasting more than one quarter; out of total 10 years analyzed in this study.

(3) Managers who experienced one or more periods of below median ranks for four or more consecutive quarters and achieved above median returns as of 09.30.2010.

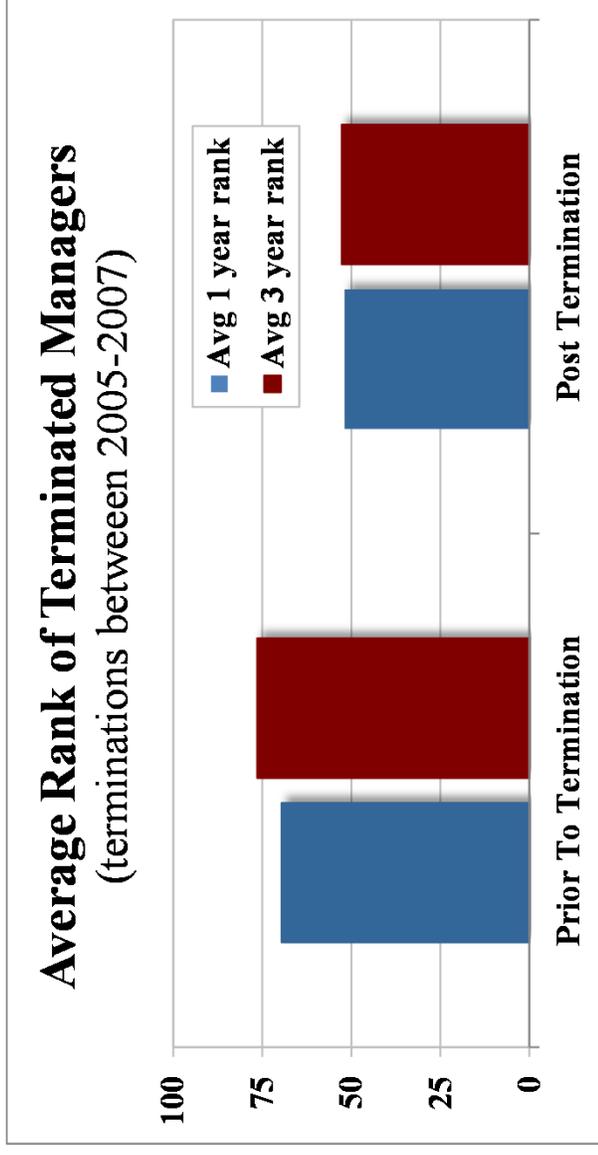
(4) "Down period" is classified as four or more consecutive quarters of below median ranks.

Data Source: eVestment Alliance. <https://www.evestment.com>.

# “Chasing Returns”: Study #1

## Poor Recent Performance ≠ Poor Future Performance

- ▶ RVK conducted a study of actual client manager termination decisions
  - ▶ On average the rank of the terminated managers significantly improved post termination event.
  - ▶ Poor *past* performance does not necessarily mean poor *future* performance.
  - ▶ It is important to understand the reasons for short-term underperformance.



Source: R.V. Kuhns & Associates, Inc., 2010. Client data for 36 performance based terminations of managers from 2005 to 2007.

**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**INTERNATIONAL EQUITY  
REVIEW**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**MARCH 7, 2013**



**Richard J. Holcomb, CFA, Administrator  
Quantitative Analysis Division**



## EXECUTIVE SUMMARY

### Performance

| <u>MPSERS Plan</u> | <u>1-Year</u> | <u>3-Years</u> | <u>5-Years</u> | <u>7-Years</u> | <u>10-Years</u> |
|--------------------|---------------|----------------|----------------|----------------|-----------------|
| Annualized Returns | 19.4%         | 5.2%           | -2.5%          | 2.2%           | 8.2%            |
| Benchmark Return   | 17.4%         | 3.7%           | -3.3%          | 1.4%           | 7.8%            |
| Rank vs. Peers     | 18            | 36             | 54             | 82             |                 |

- Earlier asset allocation and strategy decisions have been successful. Performance of the total international equity positions in developed markets versus the MSCI ACWI ex USA benchmark was +6.3% versus +5.9% in the fourth quarter, resulting in a +44 basis points (bp) tracking error and a cumulative +189 bp for the trailing year. Both variance numbers are within the normal expected range that recognizes a 250 basis point possible variance. The three and five-year numbers reflect the market decline in 2009 and recovery from the significant fixed income price disruption environment. The three and five-year tracking error numbers were +125 and +68 basis points, respectively.
- The largest component in passive exposure to international developed market returns is the internally managed stock plus fund. The approximate \$1.0 billion of negotiated swap agreement contracts are combined with internally managed fixed income Libor note holdings and an internal Global Dividend Income fund. All counterparties used for swap agreements are investment grade. The net unrealized gain on the combined positions was \$83 million as of December 31, 2012. Recognized but unrealized gains from fixed income Libor notes, remarked at lower cost values, are now \$6 million. A summary of Libor note issuers notional exposure and credit rating is listed in the attachments to this report.
- The S&P BMI EPAC 25% hedged benchmark is used for internal stock plus passive position management and related risk control analysis. The performance of total international equity investments in developed markets was +6.2% in the fourth quarter versus the benchmark's return of +5.9
- Externally managed, active strategy funds in all Non-U.S. equity categories totaled \$3.5 billion and results are improving.
- External active international fund managers are compared to the S&P Developed BMI World X U.S. benchmark index in U.S. dollars, which had a return of +5.7% for the quarter and +16.8% for the trailing year. Manager returns are diversified, and reflect both fundamental and fixed income enhancement strategies. Stock Plus strategies have been successful as short-term, opportunistic fixed income and dividend enhancements have added value. External active managers have been given the authority to use a limited amount of emerging or U.S. market exposure (i.e. for security substitution purposes), but those uses are considered individually and are normally constrained to no more than 20% of their portfolios.
- The Emerging Market Index returns were +5.6% for the quarter, and +18.2% for the trailing year. Passive and active exposure of \$2.2 billion to emerging markets played a significant diversification role, and returns were more positive than developed markets. Fifty-five percent of exposure to Emerging Markets is passive. Emerging Markets exposure has been increased to a five percent overweight compared to the MSCI ACWI ex USA benchmark.

## **Outlook**

- The outlook for international equities is more positive based on relative valuation with the U.S. market, increasing bank reserve levels and promises of government support, and reductions in systemic leverage as write-downs of distressed assets continue. The prospect of default risks and contagion risks has been reduced, but not eliminated. Greece, Italy, and Spain debt problems are unresolved. Structural reforms that reduce risk have been proposed, but harmonized accounting rules and regulation remain illusive goals. European earnings growth is expected to continue to lag U.S. growth, but that expectation is generally discounted. Growth expectations in emerging markets are positive. Political instability remains an issue.
- Indices are at reasonable levels for continuing of exposures over the next six months. Opportunistic additions may be made through external managers to continue diversification, and recognize an improving environment for active fundamental analysis techniques. Actively managed funds may be expected to grow as an overall percentage gradually over the period. Stock Plus strategies have been extremely effective over the past year, and are expected to continue to enhance returns in this uncertain and volatile market environment.
- Emerging markets are expected to benefit from growing local demand and longer-term trends. Political instability, lack of established and tested legal systems, growing regulation, possible nationalization of assets and changing tax regimes remain concerns. Individual company financing of receivables is underway and will reduce many company returns and metrics for the next few years.

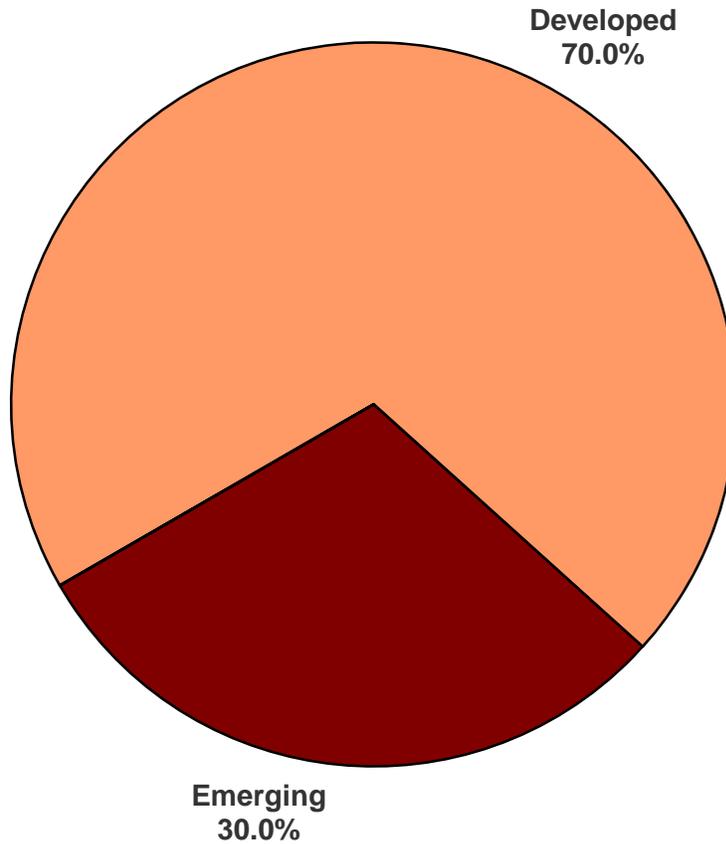
## **Investment Plan**

- The allocation to international equities has generally unchanged over the past 12 months.
- Move toward desired higher asset allocation targets in a progressive series of investments with both passive and active managers. Take advantage of external manager capacity and established conduits as market corrections and tactical opportunities occur. Move some assets from other categories as international equities become more attractive on a relative basis.
- Add new information and risk analysis services with unique capabilities for useful information for decision-making and diversification. Identify external managers for attractive niche investments in the future.
- Be aware of opportunistic situations with non-benchmark and active products. FTSE global indices are now used by Vanguard and provide a closer fit with S&P indices to our advantage. Accept reasonable tracking error risk to products based on other benchmarks and exchange traded funds in return for better liquidity.
- Take advantage of attractive corporate spreads in Libor notes and trade to improve yields when possible. Prepare for derivative market changes by focusing on standardized structures, increasing potential collateral balances and more frequent settlement. Major regulatory clarification and Basel III compliance measures have been delayed.



# SMRS

## International Equity Holding By Category SMRS Versus Benchmark 12/31/12



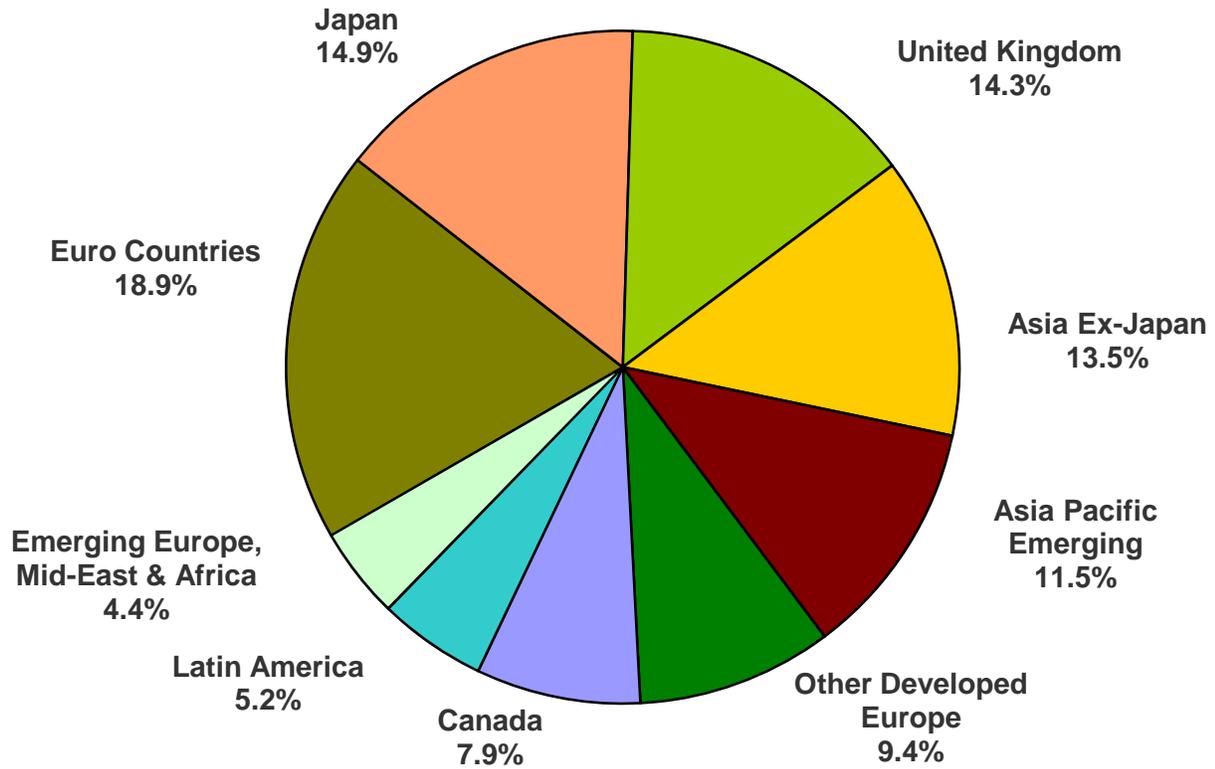
| <b>Investments by Region</b> |               |                  |
|------------------------------|---------------|------------------|
|                              | <u>SMRS</u>   | <u>Benchmark</u> |
| Developed                    | 70.0%         | 75.0%            |
| Emerging                     | 30.0%         | 25.0%            |
| <b>Total</b>                 | <b>100.0%</b> | <b>100.0%</b>    |



# SMRS

## S&P Global BMI - EX U.S.

### 12/31/12



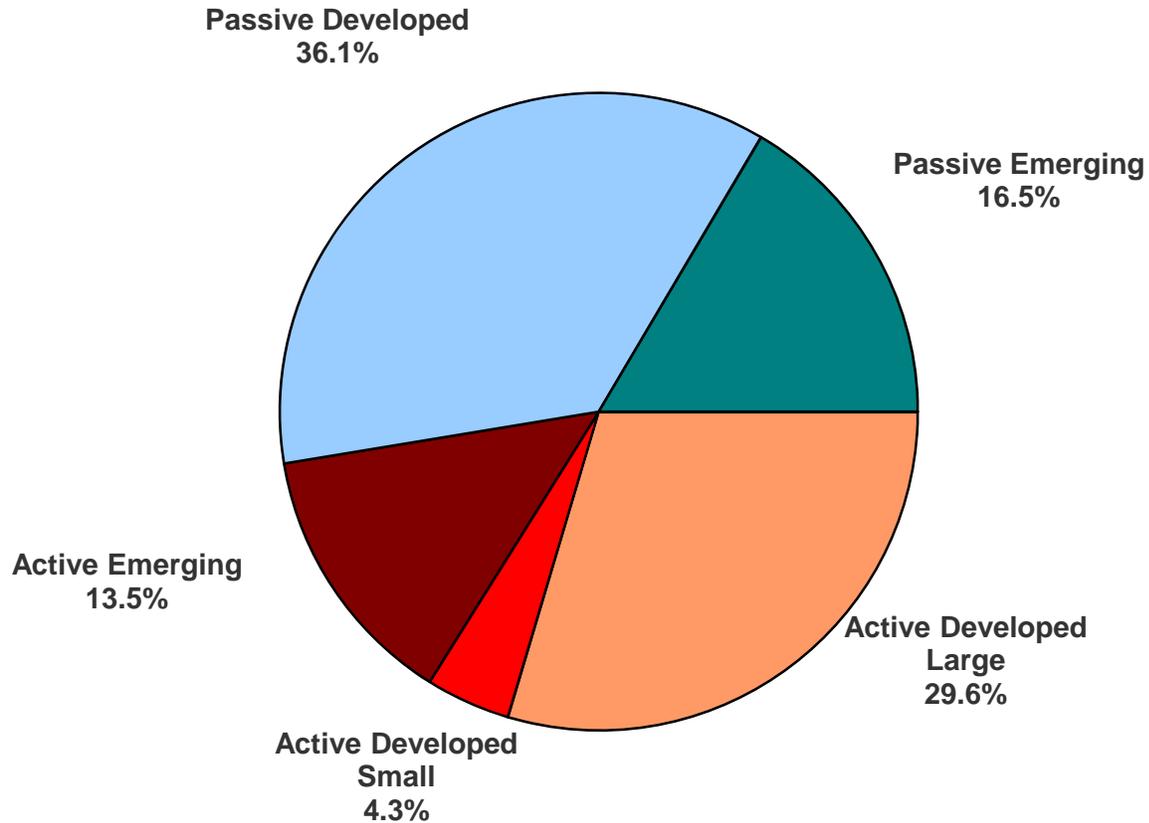
#### Investments by Region

|                                    | <u>Benchmark</u> |
|------------------------------------|------------------|
| Euro Countries                     | 18.9%            |
| Japan                              | 14.9%            |
| United Kingdom                     | 14.3%            |
| Asia Ex-Japan                      | 13.5%            |
| Asia Pacific Emerging              | 11.5%            |
| Other Developed Europe             | 9.4%             |
| Canada                             | 7.9%             |
| Latin America                      | 5.2%             |
| Emerging Europe, Mid-East & Africa | 4.4%             |
| <b>Total</b>                       | <b>100.0%</b>    |



# SMRS

## International Equity Holdings By Category 12/31/12

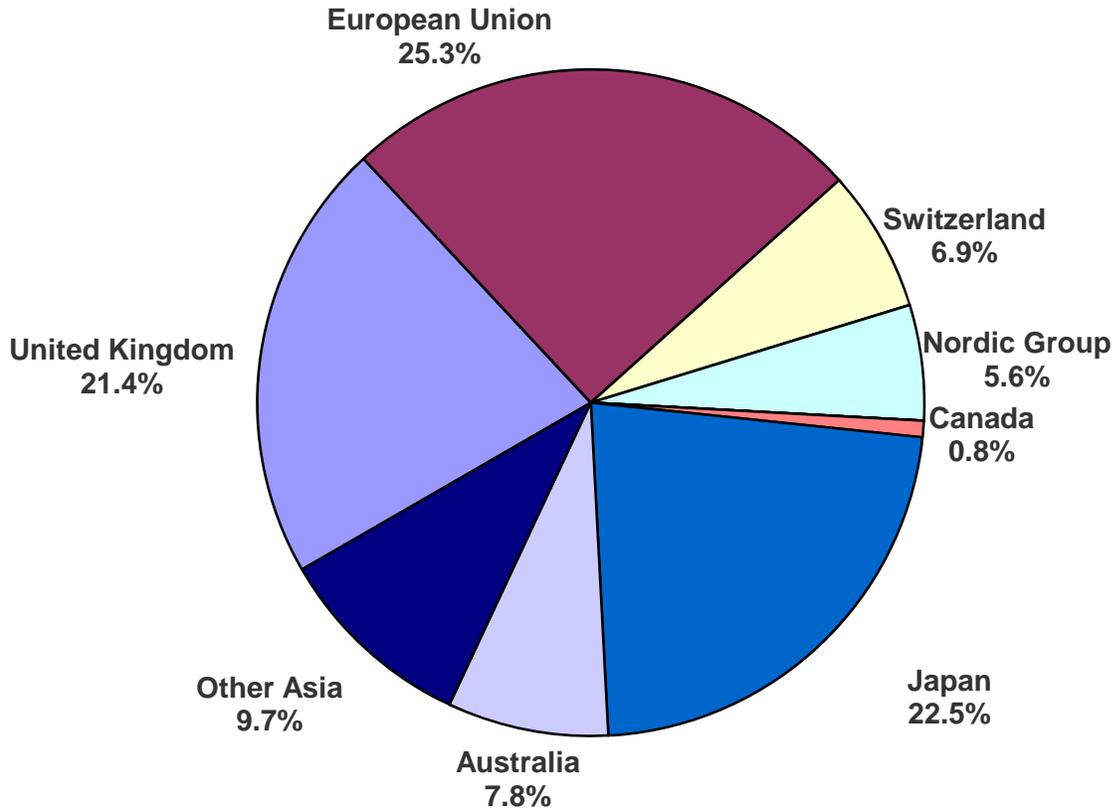


| <b>Market Value in Millions</b>   |                 |               |                |               |
|-----------------------------------|-----------------|---------------|----------------|---------------|
|                                   | <u>12/31/12</u> |               | <u>9/30/12</u> |               |
| <b>Active</b>                     |                 |               |                |               |
| Developed Large                   | \$2,189         | 29.6%         | \$2,049        | 28.7%         |
| Developed Small                   | 319             | 4.3%          | 305            | 4.3%          |
| Emerging                          | 996             | 13.5%         | 812            | 11.4%         |
| <b>Total Active Equity</b>        | <b>3,504</b>    | <b>47.4%</b>  | <b>3,166</b>   | <b>44.4%</b>  |
| <b>Passive</b>                    |                 |               |                |               |
| Developed                         | \$2,668         | 36.1%         | \$2,998        | 41.9%         |
| Emerging                          | 1,220           | 16.5%         | 983            | 13.7%         |
| <b>Total Passive Equity</b>       | <b>3,888</b>    | <b>52.6%</b>  | <b>3,981</b>   | <b>55.6%</b>  |
| <b>Total International Equity</b> | <b>\$7,392</b>  | <b>100.0%</b> | <b>\$7,147</b> | <b>100.0%</b> |



# SMRS

## Developed International Passive Equity SMRS Versus BMI EPAC Benchmark 12/31/12



| <b>Investments by Region</b>  |               |                  |
|---|---------------|------------------|
|   | <b>SMRS</b>   | <b>Benchmark</b> |
| <b>Europe</b>   |               |                  |
| United Kingdom  | 21.4%         | 20.3%            |
| European Union  | 25.3%         | 26.8%            |
| Switzerland   | 6.9%          | 7.5%             |
| Nordic Group  | 5.6%          | 5.2%             |
| Other Europe  | 0.0%          | 0.0%             |
| <b>Total Europe</b>   | <b>59.2%</b>  | <b>59.8%</b>     |
| <b>Asia</b>   |               |                  |
| Japan   | 22.5%         | 21.1%            |
| Australia   | 7.8%          | 8.3%             |
| Other Asia  | 9.7%          | 10.8%            |
| <b>Total Asia</b>   | <b>40.0%</b>  | <b>40.2%</b>     |
| Canada  | 0.8%          | 0.0%             |
| <b>Total</b>  | <b>100.0%</b> | <b>100.0%</b>    |
| <b>Total Developed International Passive Equity Investment: \$2,668 Million</b> |               |                  |



**SMRS**

**International Equities  
12/31/12**

|   | INDEXED                | ACTIVE                 | TOTAL                  | Percent      |
|---|------------------------|------------------------|------------------------|--------------|
| <b>Developed Markets - Large/Mid Capitalization</b> |                        |                        |                        |              |
| Internal Stock Plus Combination                     | \$1,193,270,486        |                        | \$1,193,270,486        |              |
| SSgA PMI Fund                                       | 516,754,743            |                        | 516,754,743            |              |
| Vanguard Developed Markets Fund                     | 471,696,863            |                        | 471,696,863            |              |
| SSgA International Alpha Select BMI Fund            |                        | \$447,391,207          | 447,391,207            |              |
| Wellington International Research Equity Fund       |                        | 436,396,175            | 436,396,175            |              |
| PIMCO Stock Plus                                    |                        | 769,238,317            | 769,238,317            |              |
| Marathon-London EAFE                                |                        | 266,072,315            | 266,072,315            |              |
| Baillie Gifford ACWI Ex US Alpha                    |                        | <u>269,698,354</u>     | <u>269,698,354</u>     |              |
| <b>Sub-Total Developed Large/Mid Cap</b>            | \$2,181,722,092        | \$2,188,796,368        | <b>\$4,370,518,460</b> | 59.1%        |
| <b>Developed Markets - Small Capitalization</b>     |                        |                        |                        |              |
| SSgA EMI Fund                                       | \$486,326,435          |                        | \$486,326,435          |              |
| SSgA International Small Cap Alpha Fund             |                        | \$93,611,922           | 93,611,922             |              |
| MFS International Small Cap                         |                        | 108,869,905            | 108,869,905            |              |
| Franklin Templeton Int'l Small Cap Fund             |                        | 116,840,359            | <u>116,840,359</u>     |              |
| <b>Sub-Total Developed Small Cap</b>                |                        |                        | <b>\$805,648,621</b>   | 10.9%        |
| <b>Total Developed Markets</b>                      |                        |                        | <b>\$5,176,167,081</b> | <u>70.0%</u> |
| <b>Emerging Markets - All Capitalization</b>        |                        |                        |                        |              |
| Vanguard Emerging Mkt Stock Index Fund              | \$1,220,162,162        |                        | \$1,220,162,162        |              |
| LACM Emerging Market Fund                           |                        | \$208,884,332          | 208,884,332            |              |
| PIMCO Emerging Market Fund                          |                        | 668,560,486            | 668,560,486            |              |
| Wellington Emerging Market Fund                     |                        | 118,074,863            | <u>118,074,863</u>     |              |
| <b>Total Emerging</b>                               |                        |                        | <b>\$2,215,681,843</b> | <u>30.0%</u> |
| <b>TOTAL</b>  | <b>\$3,888,210,689</b> | <b>\$3,503,638,235</b> | <b>\$7,391,848,924</b> |              |
| <b>Percent</b>                                      | <u>52.6%</u>           | <u>47.4%</u>           |                        | <u>100%</u>  |

# SMRS

## Swap Agreements

### International Equity Exposure

| Maturity Date | Trade Date | Notional     | Countries Indices |   | Local    |        | U.S.      |              |
|---------------|------------|--------------|-------------------|---|----------|--------|-----------|--------------|
|               |            |              |                   |   | Currency | Dollar | FX Expos. | No FX Expos. |
| 01/19/2013    | 02/15/2012 | \$12,000,000 | 2                 | 2 | 0%       | 100%   | 100%      |              |
| 01/19/2013    | 01/18/2012 | 30,000,000   | 2                 | 2 | 100%     | 0%     | 0%        |              |
| 01/19/2013    | 01/18/2012 | 39,991,452   | 2                 | 2 | 100%     | 0%     | 0%        |              |
| 03/12/2013    | 03/12/2012 | 85,000,000   | 5                 | 5 | 32%      | 68%    |           |              |
| 04/16/2013    | 04/16/2012 | 10,000,000   | 1                 | 1 | 0%       | 100%   |           |              |
| 04/17/2013    | 04/17/2012 | 50,000,000   | 7                 | 7 | 4%       | 96%    |           |              |
| 06/18/2013    | 07/13/2012 | 80,000,000   | 1                 | 1 | 100%     | 0%     |           |              |
| 06/18/2013    | 06/25/2012 | 100,000,000  | 7                 | 7 | 100%     | 0%     |           |              |
| 10/18/2013    | 10/19/2012 | 75,000,000   | 3                 | 3 | 100%     | 0%     |           |              |
| 10/18/2013    | 10/19/2012 | 200,000,000  | 3                 | 3 | 74%      | 26%    |           |              |
| 10/18/2013    | 10/19/2012 | 25,000,000   | 2                 | 2 | 60%      | 40%    |           |              |
| 12/05/2013    | 12/03/2012 | 258,000,000  | 7                 | 7 | 40%      | 60%    |           |              |
| 12/05/2013    | 12/03/2012 | \$17,000,000 | 3                 | 3 | 35%      | 65%    |           |              |

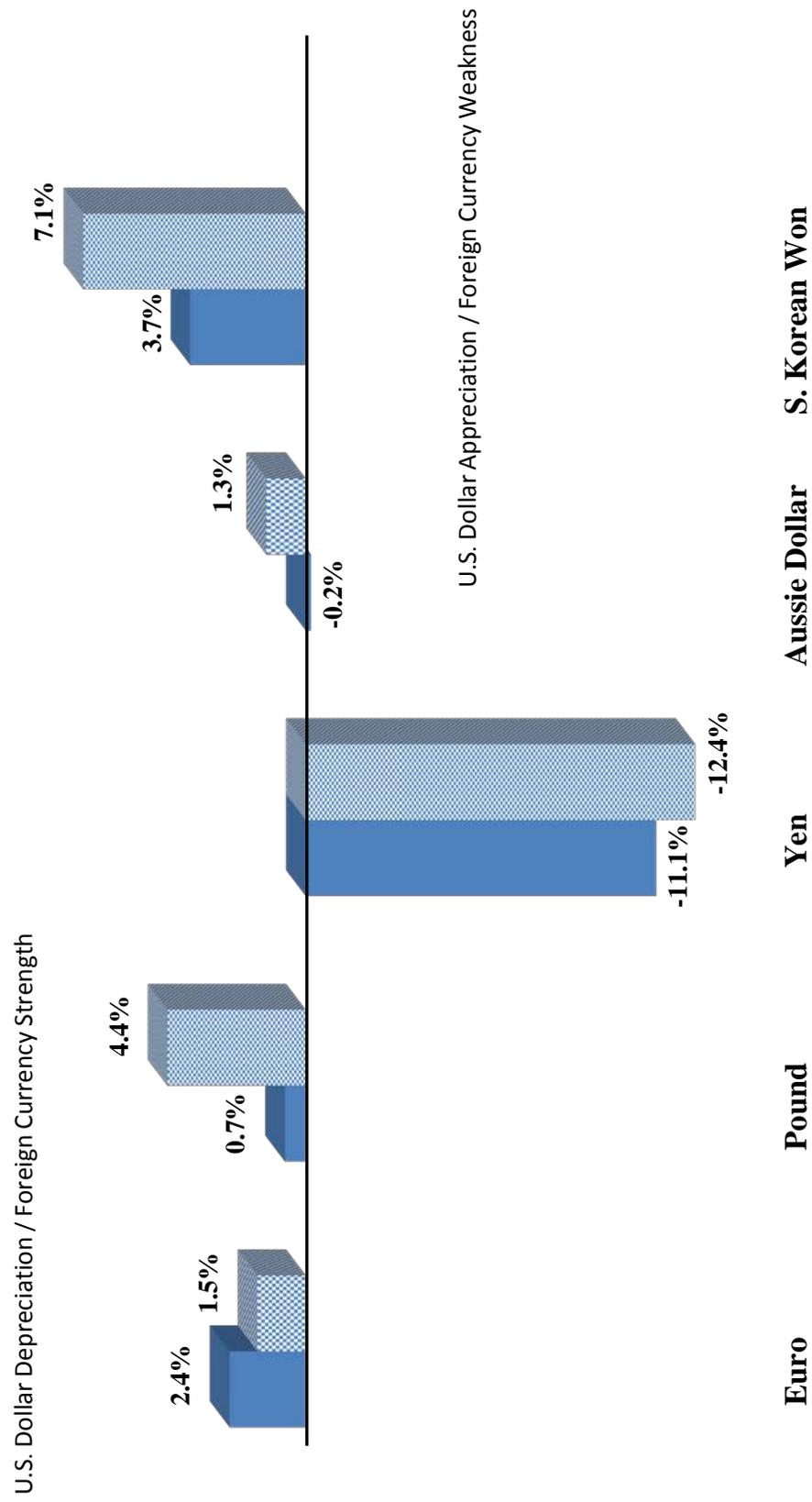
Total \$981,991,452

Notional maturing during 2013 \$981,991,452  
100%

**SMRS**  
**International Swap**  
**Fixed Income Details**  
Sorted by Issuer

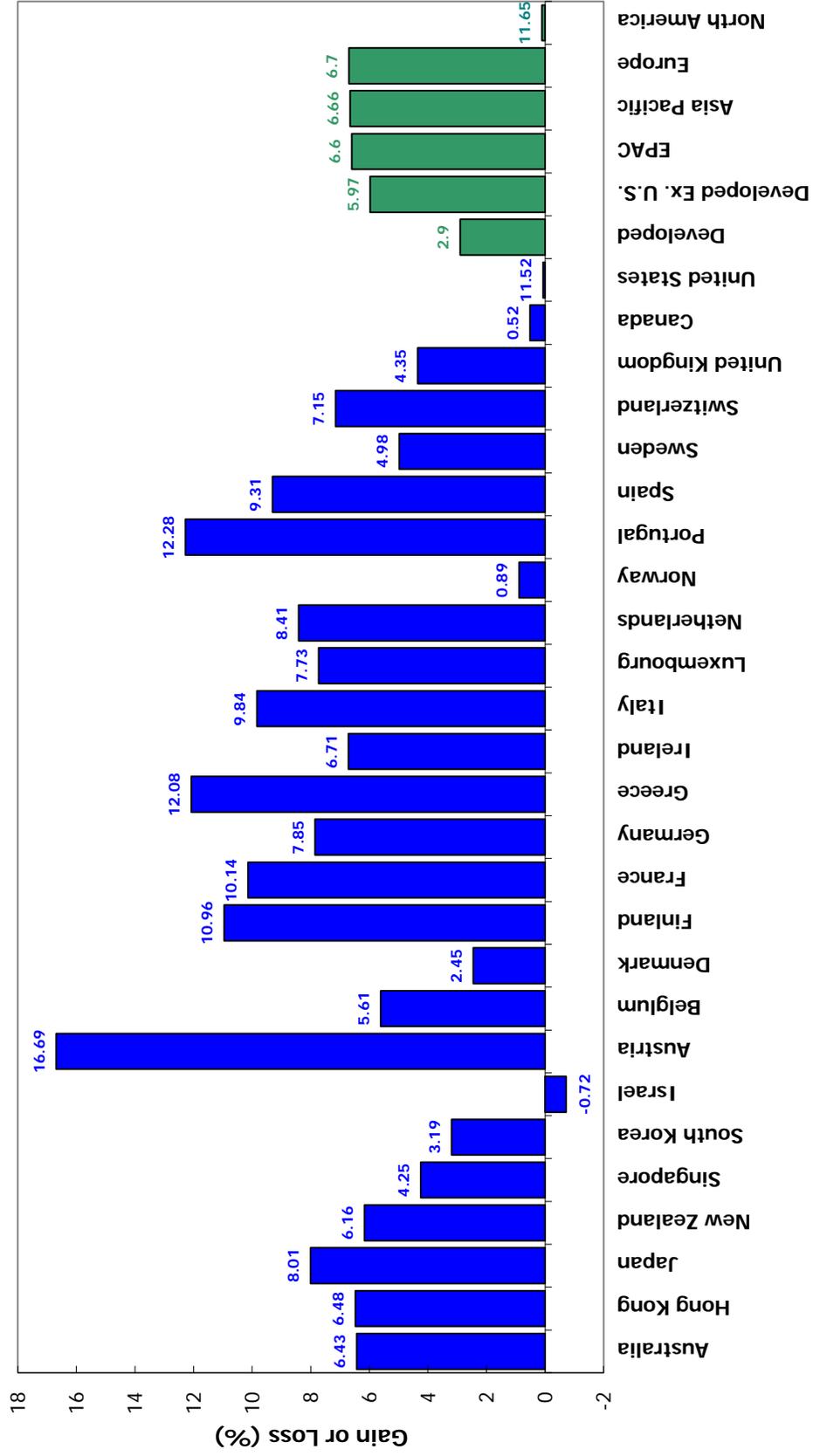
| CUSIP        | NOTE NAME                | MAT. DATE | PAR            | COST                     | MKT VALUE                | G/L                      | % G/L                  | CR. RATING | SPREAD |
|--------------|--------------------------|-----------|----------------|--------------------------|--------------------------|--------------------------|------------------------|------------|--------|
| 06406hbv0    | BANK OF NEW YORK MELLON  | 1/31/2014 | 45,000,000.00  | 45,139,836.00            | 45,110,835.00            | (29,001.00)              | -0.06%                 | Aa3        | 0.280% |
| 064159an6    | BANK OF NOVA SCOTIA      | 1/12/2015 | 50,000,000.00  | 50,946,350.00            | 50,747,500.00            | (198,850.00)             | -0.39%                 | Aa2        | 1.040% |
| 06740pr40    | BARCLAYS BANK PLC        | 1/13/2014 | 100,000,000.00 | 98,794,475.00            | 99,653,700.00            | 859,225.00               | 0.87%                  | A2         | 0.860% |
| 084664bp5    | BERKSHIRE HATHAWAY FIN   | 1/10/2014 | 55,000,000.00  | 54,998,930.00            | 55,185,625.00            | 186,695.00               | 0.34%                  | Aa2        | 0.330% |
| 13606xw87    | CANADIAN IMP BK COMM NY  | 4/12/2016 | 50,000,000.00  | 50,442,900.00            | 50,435,900.00            | (7,000.00)               | -0.01%                 | Aa3        | 0.720% |
| 172967fm8    | CITIGROUP INC            | 2/15/2013 | 40,000,000.00  | 40,044,400.00            | 40,004,000.00            | (40,400.00)              | -0.10%                 | Baa2       | 0.850% |
| 36962G2F0    | GENERAL ELEC CAP CORP    | 2/15/2017 | 200,000,000.00 | 190,484,550.60           | 194,571,000.00           | 4,086,449.40             | 2.15%                  | A1         | 0.170% |
| 78008kv83    | ROYAL BANK OF CANADA     | 3/9/2016  | 50,000,000.00  | 49,522,650.00            | 49,531,600.00            | 8,950.00                 | 0.02%                  | Aa3        | 0.500% |
| 78010jdj8    | ROYAL BK OF SCOTLAND PLC | 3/11/2014 | 50,000,000.00  | 48,707,100.00            | 50,314,513.50            | 1,607,413.50             | 3.30%                  | A2         | 1.530% |
| 89153uaa9    | TOTAL CAPITAL CANADA LTD | 1/17/2014 | 63,000,000.00  | 63,257,355.00            | 63,258,930.00            | 1,575.00                 | 0.00%                  | Aa1        | 0.380% |
| <b>TOTAL</b> |                          |           |                | <b>\$ 703,000,000.00</b> | <b>\$ 692,338,546.60</b> | <b>\$ 698,813,603.50</b> | <b>\$ 6,475,056.90</b> |            |        |

# Currency Performance vs. the U.S. Dollar

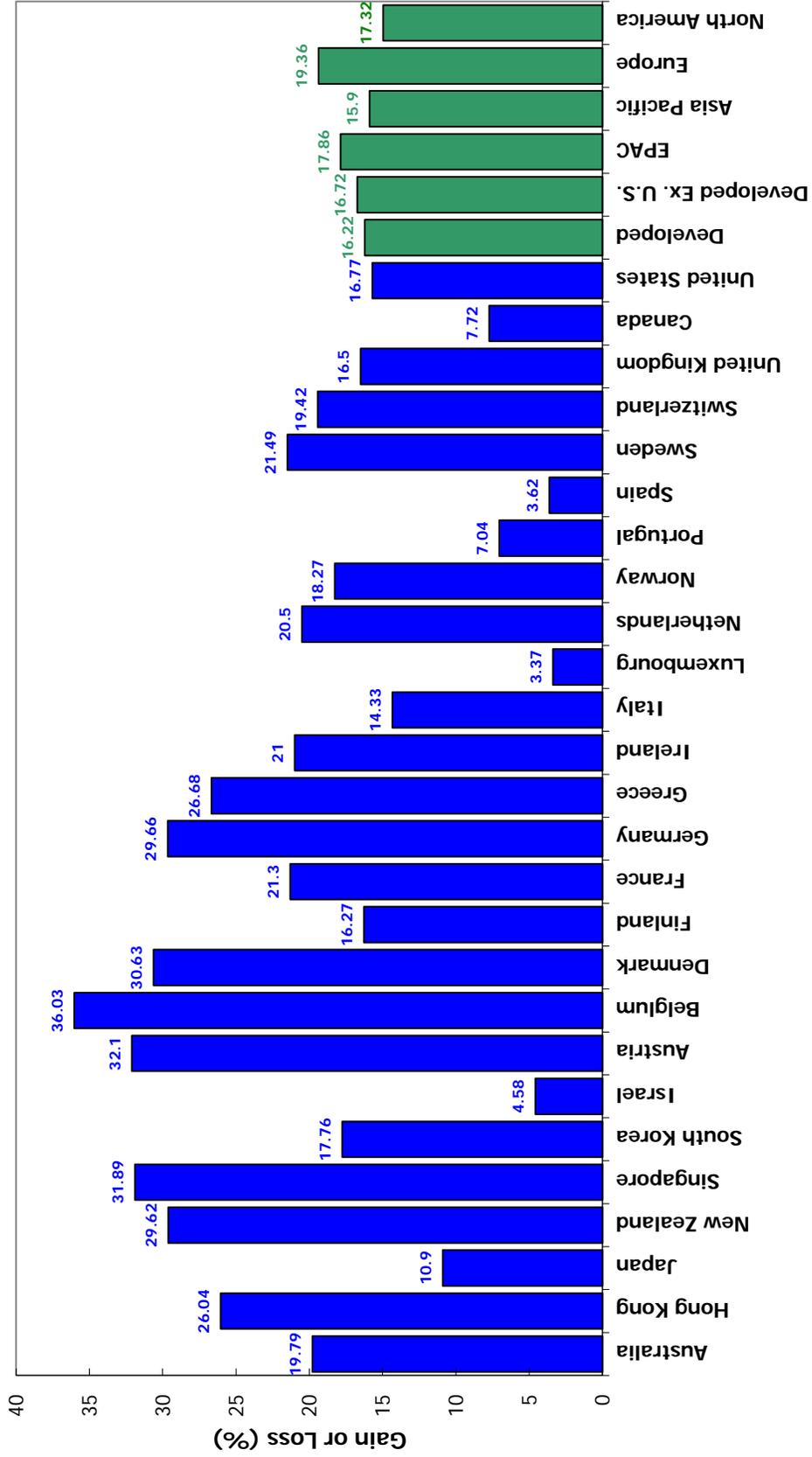


In percentage terms

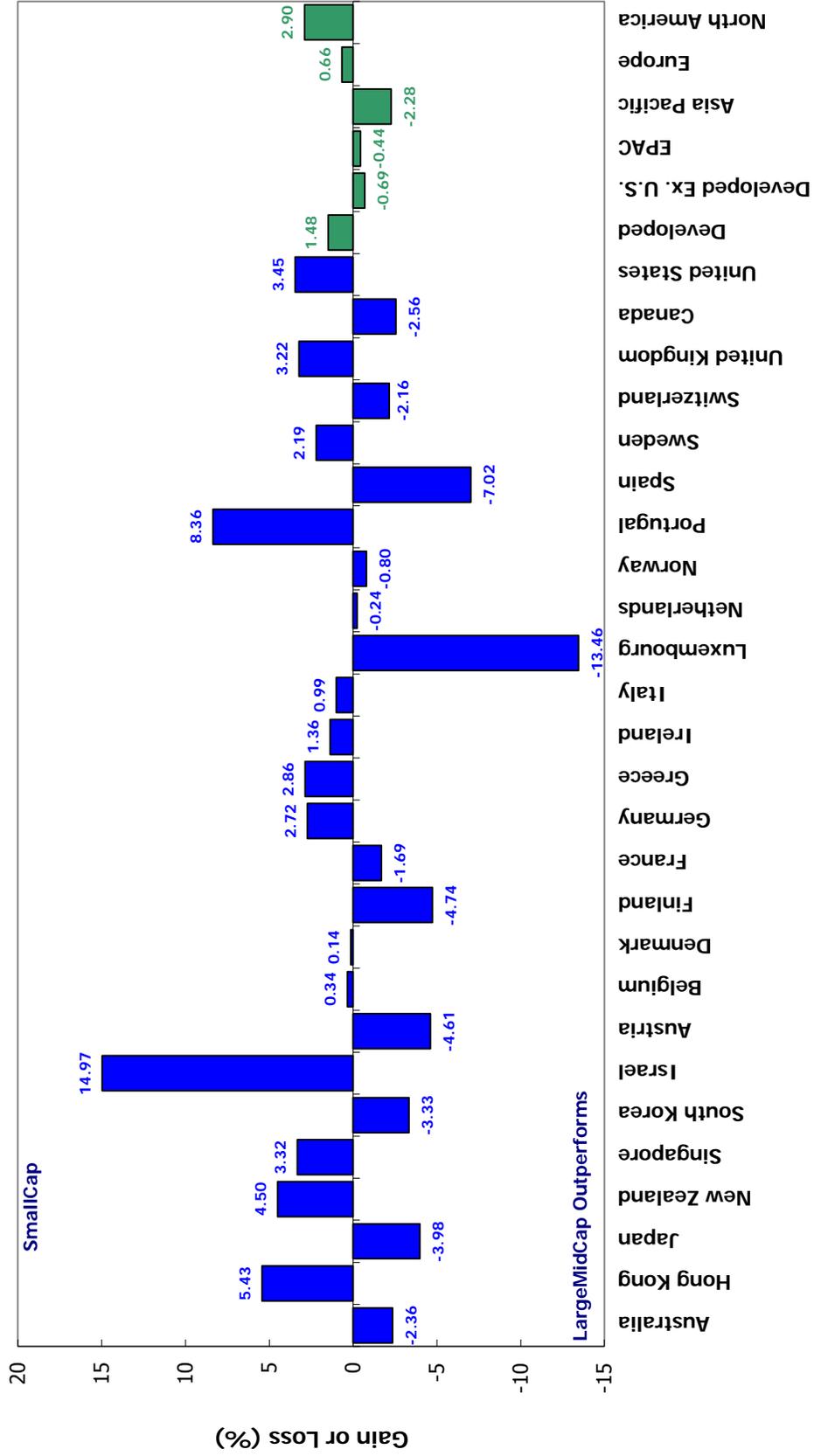
**S&P Developed Equity Index  
 BMI Performance by Country / Region  
 NET Total Rates of Return in 75% US\$ / 25% LOCAL Currency  
 4Q12 Trailing(Daily Compounding)**



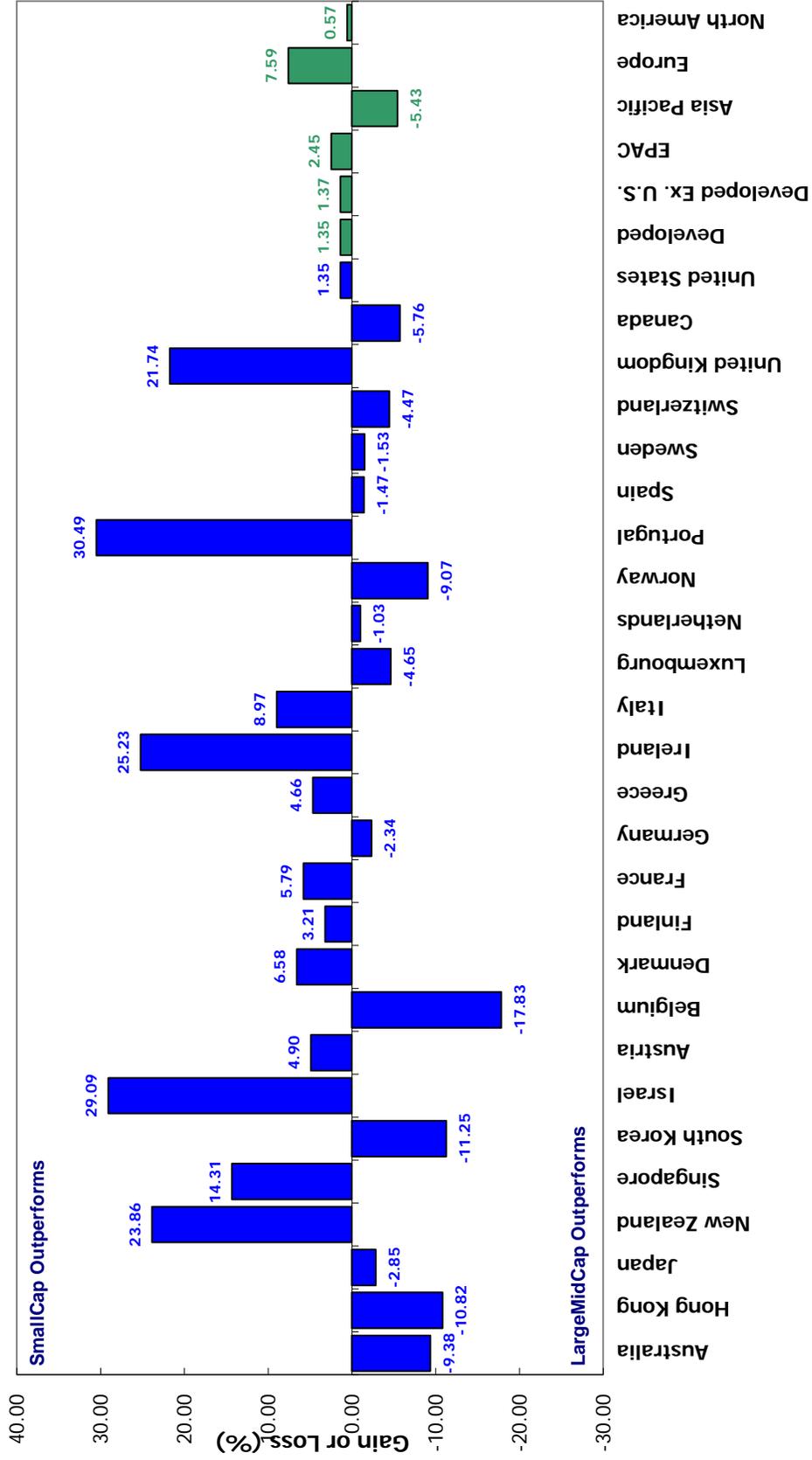
**S&P Developed Equity Index  
 BMI Performance by Country / Region  
 NET Total Rates of Return in 75% US\$ / 25% LOCAL Currency  
 4Q12 Trailing 4 Quarters (Daily Compounding)**



# S&P Developed Equity Index SmallCap minus LargeMidCap Total Rates of Return in Local Currency 4Q12 (Daily Compounding)



# S&P Developed Equity Index SmallCap minus LargeMidCap Total Rates of Return in Local Currency 4Q12 Trailing 4 Quarters (Daily Compounding)



**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**BASKET CLAUSE REVIEW**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**MARCH 7, 2013**



**Karen M. Stout, CPA, CGFM, Administrator  
Trust Accounting Division**





**Basket Clause Investments**  
**12/31/12**

The basket clause investments at December 31, 2012, were \$3.91 billion fair market value (“FMV”) or 7.7% of the total portfolio market value of \$50.97 billion.

|                                  | <u>FMV</u>             |             |
|----------------------------------|------------------------|-------------|
| Total Absolute and Real Return   | \$3,701,463,754        | 7.3%        |
| Total International Equity       | <u>\$ 208,884,332</u>  | <u>0.4%</u> |
| <b>Total investments to date</b> | <b>\$3,910,348,086</b> | <b>7.7%</b> |



# SMRS

## Section 20D Investment Holding

12/31/12

### ABSOLUTE AND REAL RETURN

### FAIR MARKET VALUE

|  |                                  |
|--|----------------------------------|
| Aetos - Sand Hill                              | \$1,069,330,570.92               |
| Apollo Credit Fund                             | 259,901,155.15                   |
| Apollo Credit Strategies Fund                  | 121,591,184.00                   |
| Apollo European Principal Finance Fund II      | 4,955,926.68                     |
| Apollo Structured Credit Recovery Fund II      | 55,872,135.00                    |
| Bain Absolute Return Capital                   | 47,711,075.00                    |
| Blackstone - Tahquamenon                       | 306,794,645.70                   |
| Brevan Howard Multi-Strategy Fund              | 103,728,540.00                   |
| Domain - Abernathy Fund I, LLC                 | 280,696,998.10                   |
| Domain - Fairfield Settlement Partners, LLC    | 66,621,918.91                    |
| Elliott International                          | 10,228,172.00                    |
| Emerald Co-invest                              | 30,777,752.14                    |
| Energy Recapitalization and Restructuring Fund | 15,838,361.61                    |
| EnTrust - White Pine                           | 260,701,175.00                   |
| Fortress MSR Opportunities                     | 100,000,000.00                   |
| FrontPoint Multi-Strategy Fund                 | 6,106,340.18                     |
| Galaxie Ave., LLC                              | 104,064,711.45                   |
| Highbridge Principal Strategies - HPS III      | 61,399,100.60                    |
| HPS Senior Loan Fund II                        | 152,890,743.33                   |
| JP Morgan Global Maritime Fund                 | 6,891,578.42                     |
| KKR Lending Partners                           | 46,751,122.27                    |
| Lakewater Fund I, LLC                          | 157,627,765.02                   |
| Lakewater Fund II, LLC                         | 57,773,538.92                    |
| Lakewater Fund III, LLC                        | 75,000,000.00                    |
| MP Securitized Credit Fund                     | 25,000,000.00                    |
| PSAM - Spartan Fund                            | 29,679,078.42                    |
| Red Kite Mining Fund                           | 26,564,361.79                    |
| SJC Direct Lending Fund I                      | 140,385,099.66                   |
| SJC Direct Lending Fund II                     | 76,580,704.28                    |
| <b>TOTAL ABSOLUTE AND REAL RETURN</b>          | <b><u>\$3,701,463,754.55</u></b> |

### INTERNATIONAL EQUITY

|                                   |                         |
|-----------------------------------|-------------------------|
| LACM Emerging Markets Fund        | <u>\$208,884,331.72</u> |
| <b>TOTAL INTERNATIONAL EQUITY</b> |                         |

### GRAND TOTAL 20D INVESTMENTS

\$3,910,348,086.27

as % of TOTAL PORTFOLIO (MKT)

\$50,972 million

7.7%

## **Disclaimer**



**This presentation was given solely for the purpose of explaining the structure, investment process, and returns for the State of Michigan Retirement Systems. It should not be interpreted in any way as financial advice.**

