

# INVESTMENT ADVISORY COMMITTEE MEETING

December 6, 2012

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

December 6, 2012

## Agenda



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

### 2013 Meeting Schedule

Thursday, March 7, 2013  
Thursday, June 6, 2013  
Thursday, September 5, 2013  
Thursday, December 5, 2013

All meetings start at 9:30 a.m.

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## **INVESTMENT ADVISORY COMMITTEE**

The Investment Advisory Committee held its quarterly meeting on Thursday, September 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  
James B. Nicholson  
Steven H. Hilfinger, LARA  
John E. Nixon, DTMB

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

Others in attendance: Becky Gratsinger, Jim Voytko, Allan Pohl, Molly Jason, Renaye Manley, Doug Johnson, Mark Guastella, Stuart Sneen, Ellen Hoekstra, June Morse, and Jason Diotte.

### **Call to Order**

Chairman Khouri called the September 6, 2012, IAC meeting to order at 9:30 a.m. He thanked everyone for taking time from their busy schedules to attend the September Investment Advisory Committee (IAC) meeting.

### **Approval of Minutes of June 14, 2012**

Chairman Khouri asked for a motion to approve the minutes of the June 14, 2012, IAC meeting. Mr. Nicholson so moved; there were no objections.

### **Opening Remarks**

Chairman Khouri briefly touched on a few ideas for changes in the way the meeting would be handled especially where the asset classes are concerned. He requested feedback from the Board members and solicited ideas for other topics of discussion for future meetings. He noted that R.V. Kuhns would be presenting an in-depth Asset Liability Study for the State Employees' Retirement System. This study explains how all of the different aspects of the Plan are linked together and also creates a guide for the actual asset allocation of the Plan. He also noted that this study will answer many questions about the Plan. Chairman Khouri turned the meeting over to Mr. Jon Braeutigam to discuss the Executive Summary.

## **Executive Summary**

Mr. Jon Braeutigam first thanked Mr. Greg Parker and staff that assisted in putting the Executive Summary together. They did a very good job. Mr. Braeutigam noted that there is a lot of good information contained in the book which will not be discussed in the meeting today. He noted that an asset liability study is foundational to how investing is done and every pension fund performs this study and then an asset allocation is completed to meet investment objectives. He discussed the return for the one-year, which was 2.6%, which happens to be about in the top quartile for public plans. He also discussed the three-year return, the five-year return which had been catching the down stock markets, and noted that the equity markets have been challenged over the past ten years.

Mr. Braeutigam indicated that over the past twelve months public equities has been reduced to 27.4% of the total fund, which is in the acceptable range, to reduce the volatility of the fund. Cash has been increased a little to ensure that benefits can be paid for about a year without creating a situation where the fund is being forced to sell stocks. He noted that the stock portfolio has been positioned with about 50% passive and 50% active. Mr. Braeutigam discussed the macro environment where stocks seem to be highly correlated and how tough it is right now for active managers to beat the S&P 500. He discussed the Capital Markets where foreign stocks remain under pressure but noted that they have been highly correlated with U.S. markets about 85% over long periods of time. In the last few years, they have decoupled. Domestic stocks have outperformed their foreign counterparts by 18.6%, 9.3%, and 4.6% annually over the past one, three, and five-year periods. There was a discussion about developed and emerging markets.

Mr. Braeutigam highlighted some of the different asset classes and their performance over the past quarter noting the improvement of the returns versus peers in the international portfolio. He discussed exposure in emerging markets and different credit funds, noting the importance of the element of timing. Regarding public funds, Mr. Braeutigam noted the difference between the top quartile and the bottom quartile is only about 80 basis points over a ten-year period. He talked about the fear and optimism in the markets. Mr. Nixon questioned where the Plan was going over the next ten years and Mr. Braeutigam explained that there are many variables and anything can happen, but the equity markets looked fairly priced compared to history. He also noted bond yields are extremely low by historical standards. There was also a discussion about, the ten-year Treasury yield, the assumed rate of return, and the ARC-based policy.

**SERS Asset Liability Study Presentation by R.V. Kuhns** – Mr. Jim Voytko, COO, Director of Research, and Senior Consultant

Mr. Voytko began his presentation noting that the purpose of an asset liability study is to examine how well alternative investment strategies address the Plan's liabilities in the context of the Plan's contribution policy. This study is the only standard analysis that

fully links all three aspects of the Plan's key financial drivers – the investment, benefit, and contribution policies. He discussed analyzing the asset liability match for a closed plan and noted that a closed plan still has a very, very long life. He provided an example of how an employee hired in 1996, before the plan was closed to new entrants, that the fund may still be providing benefits to surviving spouse 70 or 80 years from now. So, the tails on closed Plans (such as the State Employees' Defined Benefit Plan) are very long. This is a challenge to policy makers to make decisions now where the full consequences of the decisions do not come to fruition for many years.

Mr. Voytko discussed the successful wind down of a closed DB plan which is ultimately best measured by the minimization of cumulative contributions to Plan end. This requires the maximum dependence on investment income from Plan assets, cumulatively along the glide path to Plan end. He discussed achieving maximum dependence on investment income from Plan assets by means of adhering to ARC-based contribution policy and optimizing the risk/reward tradeoff along that glide path. Risk is best taken when there is a lengthy recovery period should downside emerge.

He also discussed other factors including risk preferences, liquidity, and implementation constraints. He noted the market value funded ratio, which was 55.5% for the State Employees' Plan as of September 30, 2011, is lower than the actuarial funded ratio. He explained the difference between the market value funded ratio and the actuarial funded ratio. He discussed some of the upcoming changes in the GASB standards which will require a lower assumed rate of return. This will cause the unfunded liability as reported on the state's balance sheet to get bigger even if the actual liabilities as estimated in terms of payments do not really change.

Mr. Voytko discussed a deterministic analysis is where all underlying assumptions, liabilities, contributions and most critically investment returns, are achieved precisely without variance in each and every year. A stochastic analysis is where outcomes for investment returns vary each year according to estimated volatility with contribution requirements following suit while actual contribution policy and liabilities remain in their current form.

Mr. Voytko discussed the demographics of the Plan, which he labeled as an extremely mature Plan. He noted that each year the jobs of the staff are going to get more and more difficult. There are different degrees of maturity, benefit levels, and funding statuses and there will be more pressure to create different asset allocations that are more appropriate to wherever they are on the life span or glide path. He noted that there are very few things that move as slowly as demographics, and the demographics of DB plans are not any different. People are living longer, a good thing, but this costs money.

Mr. Voytko discussed the path of the contributions noting that the amounts are relatively stable. He noted how the maturity of the plan is reflected in payments versus contributions. The payout ratio is extremely sensitive to whether or not the state adheres to the ARC-based contribution policy. Mr. Voytko noted that investing can not

solve the issue of the fund being fully funded, this would require returns over 12% each and every year, never lower, for over ten consecutive years. This is very challenging, and highly unlikely. Mr. Nixon and Mr. Voytko led a discussion regarding the actuarial assumed rate of return being 7% as opposed to 8% and the impact that would have on the fund. Also discussed were different scenarios with the possibility of a buyout. Mr. Voytko discussed potential portfolios showing different examples of being conservative and aggressive noting the expected risk and return for each scenario.

Mr. Voytko concluded his presentation noting that the State Employees' Retirement System is a mature Plan and this study suggests that the system's financial health is likely to improve over the next 20 years due to the strong contribution policy in place along with the eventual decline in members receiving benefits. These forces will push, albeit slowly, and with significant contributions, the System to an improved funding level and eventually the complete elimination of the liabilities. There was much discussion throughout the presentation about the Study with many questions asked, potential scenarios expressed, and probable outcomes.

Chairman Khouri noted that it was a great discussion and thanked Mr. Voytko and R.V. Kuhns for the presentation.

**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 IAC Meeting is scheduled for Thursday, December 6, 2012. Chairman Khouri adjourned the meeting at 11:30 a.m.

Approved:

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Nick Khouri, Chairman

## EXECUTIVE SUMMARY

September 30, 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	13.5%	9.6%	1.6%	5.3%	7.7%
Policy Return	15.8%	10.2%	2.3%	5.3%	8.1%
Rank vs. Peers	76	49	62	52	65

- For the one and three-year time periods, ending September 30, 2012, the plan beat the 8% actuarial rate of return.
- The five-year time period includes the effects of the Great Recession. The ten-year return is close to the actuarial rate of return.
- For the one-year time period, the majority of the relative underperformance against peers is due to the overweight in illiquid asset classes such as private equity and real estate as well as the underweight in domestic equity. Private equity valuations typically lag one quarter in public plan reports.
- The reason for the relative underperformance against the policy benchmark is split between tactical weighting differences (especially the domestic equity underweight and private equity overweight) and performance challenges against the stated benchmark (most especially private equity).

### Asset Allocation

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

- The systems paid out \$3.1 billion net of contributions over the past twelve months. This figure represents 6.5% of the September 30, 2011, market value. The plans used proceeds from the sales of domestic equity to fund the net payments due to the strong market returns during the period.
- The plans have outstanding commitments to fund approximately \$6.1 billion in illiquid asset classes, primarily private equity. This figure is about 12% of the September 2012 market value and is an additional liquidity consideration. By contrast, this dollar figure is roughly \$1.7 billion lower than five years ago.
- Over the past year the actual allocation to private equity decreased by 2.8% and long-term fixed income decreased by 1.7%. Short-term cash and real return / opportunistic both increased by 1.4%. Changes in market value mostly affected the asset allocation.
- With domestic equity, the percent allocated to passive strategies has increased over the past year-and-a-half from 34% to now approximately 46%. In contrast, the trend in international equity has been to increase active strategies as they have grown from 21% a year ago to now represent over 44%. Active and passive strategies seem to do well over different regimes, and **the long-term active/passive allocation target is a 50/50 split.**
- According to State Street peer universe data, MPSERS has the lowest allocation to long-term fixed at 13.3%. The peer median allocation for the asset class is 24.1%. With the 10-year U.S. Treasury



yielding 1.6% 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.

## **Capital Markets**

*Markets behaving and an eye on small-cap valuations.*

- U.S. stocks experienced a very strong year returning 30.2% outpacing foreign stocks. Domestic stocks have now out-performed their foreign counterparts by 15.1%, 9.7%, and 5.0% annually over the past one, three, and five-year periods ending September 2012 respectively.
- Excluding non-earning issues, the **U.S. stock market trades at a higher trailing Price/Earnings multiple than international markets.** At the end of September, the U.S. traded at 14.4 times, developed international traded at 12.8 times and emerging international traded at 11.4 times.
- European sovereign yields fell during the quarter. On July 24, 2012, the Spanish 10-year rate closed at a post-crisis high of 7.62%; however, by the end of September the rates were below 6%. The 10-year Treasury rate closed at a historic low of 1.39% on that July date, and finished the quarter up slightly at 1.63%.
- Inflation ticked up slightly. The year-over-year change in the CPI was 2.2%, up from 1.7% at the last reading. From the beginning of the year, through September 30, 2012, the Dow Jones-UBS Commodity index is up approximately 3%.
- 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%. **Today, the price paid for small cap stocks relative to large caps is close to the highest paid on record, going back to 1983.**

## **Economic Backdrop**

*A bounce in the economy; housing doing better but corporate profits are softer.*

- The U.S. economy continues to grow very slowly. At the end of October, the latest reading of GDP growth was 2.0%. The Institute of Supply Management's Purchasing Manger Index (PMI) measured below 50 in June, July, and August; however, the for the latest two months the figure was back above 50 suggesting slightly positive growth has resumed now after a slight summertime pause.
- The most recently announced employment statistics have come in better than what was forecast. According to the Bureau of Labor Statistics (BLS) nonfarm payrolls increased by 171,000 against expectations of an increase of 125,000. In the meantime, consumers are not necessarily doing better. Wages as a percent of corporate sector's GDP is at an all-time low. In the 1930s this measured over 60%, but has steadily decreased over time to now represent 49%. The unemployment rate is in fact lower than a year ago by almost a full percent at 7.9%; however, this improvement is largely due to a drop in the workforce participation. According to the BLS, there are roughly 4.7 million fewer workers today than at the peak four-and-a-half years ago.
- Annualized after-tax profits hit an all-time high at over \$1.6 trillion and profit margins hit an all-time high of 10.3% in the fourth quarter of 2011. The most recent quarter's profits are \$100 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 bottomed in April 2009 and over the past twelve months the year-over-year growth in starts has averaged over 25%, albeit off a very low base. The trough in

sales of existing homes occurred in July 2010 and since that time has shown consistent improvement. Finally, house values (as measured by the S&P / Case-Shiller Index) are near three-year highs, and may have bottomed in February 2012.

### **Highlighted Asset Class – Equity**

*Assets with higher returns and volatility.*

#### **Equity Returns**

<b><u>Equity Asset Class</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>	<b><u>15-Years</u></b>	<b><u>20-Years</u></b>
Domestic Equity	29.5	12.2	1.1	4.5	8.1	4.8	8.4
S&P 500	30.2	13.2	1.1	4.5	8.0	4.7	8.5
International Equity	17.4	4.2	-4.1	2.2	8.0	4.1	NA
MSCI EAFE	13.8	2.1	-5.2	2.4	8.2	3.4	5.5
Alternatives (PE)	4.0	17.4	5.8	11.9	12.7	10.8	12.8
Custom Benchmark	8.5	17.8	5.3	8.4	11.7	8.2	11.9

- Equity returns have consistently matched recognized index benchmarks over the long-term.
- Private equity has earned a liquidity premium over the S&P 50 of approximately 400 basis points over longer periods.
- Equity returns can vary dramatically over different time periods.

#### **Universe Rank**

<b><u>Equity Asset Class</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>
Domestic Equity	21	63	40	36	74
International Equity	20	50	52	70	86
Alternatives	74	8	18	16	13

- Domestic equity began to target a wider capitalization in the mid-2000s, a target more similar to peers. Since that time, returns relative to peers have been competitive.
- International equity began investing in emerging markets and began to wind-down a strategy for hedging half the currency exposure in 2009, to a target more similar to peers. Since then, returns relative to peers have improved.
- Private equity (alternatives) historically has delivered strong absolute returns as well as top-quartile returns when compared against peers. Focus is upon best in class general partners.

### **Investment Strategy**

*Gaining equity exposure*

Within publicly traded equities, the plans are allocated 66% to domestic equity and 34% to international equity. The asset allocation policy for the plan strategically over-weights U.S. equities as it represents 46% of the global equity market cap. Within publicly traded international equities, the plans are allocated 75% to developed equity markets and 25% to emerging equity markets. The plans are slightly overweight emerging markets as it represents 21% of the non-U.S. market cap.



**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**PERFORMANCE**

**FOR PERIODS ENDING  
SEPTEMBER 30, 2012**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**DECEMBER 6, 2012**



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



*Bureau of Investments*

*Mission Statement*



*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.*

# *State of Michigan Retirement Systems*

## *Goals*



*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**  
**9/30/12**

Assets % of Portfolio 09/30/12	Ten Years <sup>1</sup>		Seven Years <sup>1</sup>		Five Years <sup>1</sup>		Three Years <sup>1</sup>		One Year <sup>1</sup>		Current Quarter	
	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank
<b>TOTAL PLAN</b>	<b>7.7</b>	<b>65</b>	<b>5.3</b>	<b>52</b>	<b>1.6</b>	<b>62</b>	<b>9.6</b>	<b>49</b>	<b>13.5</b>	<b>76</b>	<b>3.8</b>	<b>82</b>
Median - Greater than \$10 Billion <sup>2</sup>	7.9		5.3		2.1		9.5		15.2		4.4	
MPSERS Total Plan Policy	8.1		5.3		2.3		10.2		15.8		3.4	
<b>DOMESTIC EQUITIES</b>	<b>8.1</b>	<b>74</b>	<b>4.5</b>	<b>36</b>	<b>1.1</b>	<b>40</b>	<b>12.2</b>	<b>63</b>	<b>29.5</b>	<b>21</b>	<b>6.6</b>	<b>32</b>
Median <sup>2</sup>	8.5		4.4		1.0		12.4		27.1		6.0	
S&P 1500 Index	8.3		4.7		1.4		13.4		30.2		6.3	
<b>Stock-Active</b>	<b>7.8</b>		<b>4.3</b>		<b>0.8</b>		<b>11.4</b>		<b>28.6</b>		<b>6.8</b>	
S&P 500 Index/ S&P 1500 Blended Index <sup>3</sup>	8.1		4.7		1.4		13.4		30.2		6.3	
<b>Stock- Large Cap Active</b>	<b>7.6</b>		<b>4.0</b>		<b>0.3</b>		<b>11.0</b>		<b>27.8</b>		<b>6.8</b>	
S&P 500 Index	8.0		4.5		1.1		13.2		30.2		6.4	
<b>Stock - Mid Cap Active</b>	<b>1.4</b>		<b>5.6</b>		<b>2.2</b>		<b>13.4</b>		<b>27.2</b>		<b>5.2</b>	
S&P 400 Mid Cap Index	1.2		6.2		3.8		14.3		28.5		5.4	
<b>Stock- Small Cap Active</b>	<b>10.8</b>		<b>6.6</b>		<b>4.2</b>		<b>11.9</b>		<b>27.5</b>		<b>4.8</b>	
S&P 600 Small Cap Index	10.7		5.4		3.3		15.1		33.4		5.4	
<b>Stock - Multicap Active</b>	<b>8.6</b>		<b>5.0</b>		<b>1.8</b>		<b>13.7</b>		<b>30.4</b>		<b>7.1</b>	
S&P 1500 Index	8.3		4.6		1.3		13.4		30.2		6.3	
<b>Stock-Passive US Equities</b>	<b>12.7</b>		<b>5.0</b>		<b>1.8</b>		<b>13.9</b>		<b>30.7</b>		<b>6.4</b>	
S&P 900 Blend <sup>4</sup>	8.3		4.6		1.3		13.3		30.1		6.3	
<b>Passive S&amp;P 500</b>	<b>8.2</b>		<b>4.8</b>		<b>1.4</b>		<b>13.7</b>		<b>30.8</b>		<b>6.5</b>	
S&P 500 Index	8.0		4.5		1.1		13.2		30.2		6.4	
<b>Passive S&amp;P Mid-Cap</b>	<b>11.4</b>		<b>7.1</b>		<b>5.0</b>		<b>15.5</b>		<b>29.7</b>		<b>5.6</b>	
S&P 400 Mid Cap Index	10.8		6.2		3.8		14.3		28.5		5.4	
<b>INTERNATIONAL EQUITIES</b>	<b>14.1</b>	<b>86</b>	<b>2.2</b>	<b>70</b>	<b>-4.1</b>	<b>52</b>	<b>4.2</b>	<b>50</b>	<b>17.3</b>	<b>20</b>	<b>7.4</b>	<b>59</b>
Median <sup>2</sup>	9.1		3.0		-4.0		4.2		16.4		7.4	
International Blended Benchmark <sup>5</sup>	7.6		1.4		-4.9		2.6		15.0		7.5	
<b>Passive International Equities</b>	<b>8.0</b>		<b>2.3</b>		<b>-3.8</b>		<b>4.3</b>		<b>15.5</b>		<b>6.6</b>	
S&P Developed BMI-EPAC net 75/25 blend <sup>6</sup>	7.6		1.5		-4.8		2.8		14.0		6.7	
<b>Active International Equities</b>	<b>4.7</b>		<b>2.3</b>		<b>-5.0</b>		<b>4.7</b>		<b>19.4</b>		<b>7.9</b>	
S&P Developed BMI Ex U.S. net	2.7		2.7		-4.3		3.2		14.1		7.6	
<b>Emerging Markets Equities</b>	<b>3.5</b>						<b>6.5</b>		<b>21.1</b>		<b>8.1</b>	
MSCI Emerging Markets Net							5.6		16.9		7.7	



# MPERS PENSION

## Time-Weighted Rates of Return 9/30/12

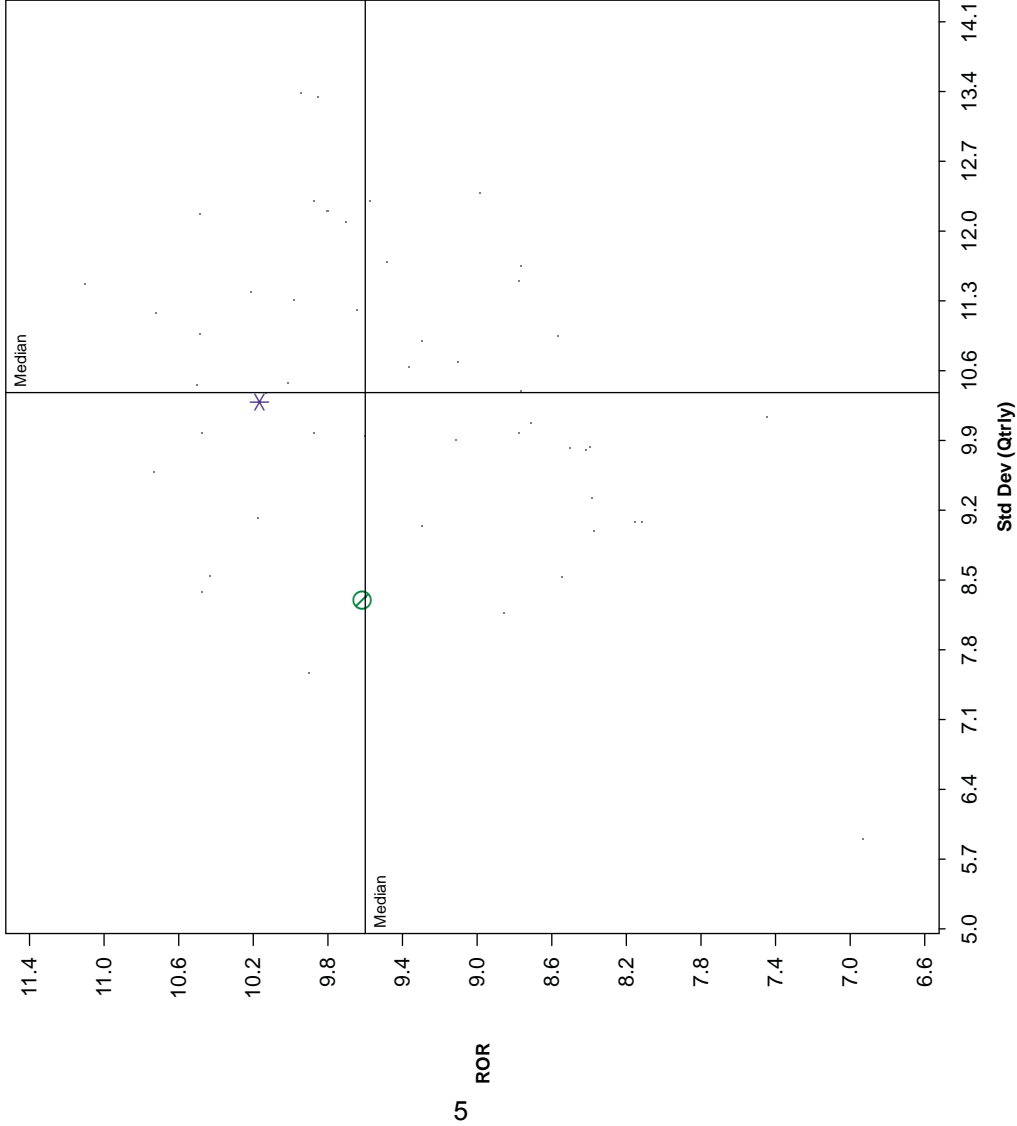
Assets % of Portfolio 09/30/12	Ten Years <sup>1</sup>		Seven Years <sup>1</sup>		Five Years <sup>1</sup>		Three Years <sup>1</sup>		One Year <sup>1</sup>		Current Quarter	
	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank
<b>ALTERNATIVE INVESTMENTS</b>	21.0	13	11.9	16	5.8	18	17.4	8	4.0	74	0.8	57
Median <sup>2</sup>			9.1		4.0		12.3		5.5		1.0	
Alternative Blended Benchmark <sup>7</sup>			8.4		5.3		17.8		8.5		-1.9	
<b>REAL ESTATE</b>	10.0	64	3.1	52	-2.9	58	1.9	83	8.4	82	2.9	48
Median <sup>2</sup>			3.1		-2.4		7.8		11.7		2.5	
NCREIF - Property Blended Index <sup>8</sup>			5.0		1.0		9.5		9.6		2.0	
NCREIF Open Fund Index Net			3.0		-2.0		11.1		10.5		2.5	
<b>INFRASTRUCTURE INVESTMENTS</b>	0.4										2.4	
<b>BONDS</b>	13.3	82	6.7	64	7.4	58	7.0	82	6.3	89	2.1	78
Median <sup>2</sup>			6.9		7.6		8.7		9.8		2.9	
Barclays Govt/Credit			5.9		6.6		6.5		5.7		1.7	
<b>Government</b>	2.7	50	5.7	57	6.0	60	5.2	52	3.3	09	0.9	
Barclays Government			5.6		6.0		5.2		3.0		0.6	
<b>Corporate</b>	7.4	62	6.8	69	7.8	69	6.9	69	5.9	20	2.0	
Barclays Credit			6.7		7.9		8.7		10.1		3.5	
<b>Fixed Income External</b>	3.2	65	6.7	67	7.4	65	8.4	62	9.3	31	3.1	
Barclays Aggregate			6.5		6.5		6.2		5.2		1.6	
<b>ABSOLUTE RETURN</b>	3.7						5.1		4.9		2.3	
HFRI FOF Cons 1 mth lagged							2.0		0.0		1.1	
<b>COMMODITY INVESTMENTS</b>	0.8								6.4		13.2	
DJ-UBS Commodity Index TR									6.0		9.7	
<b>REAL RETURN AND OPPORTUNISTIC</b>	4.0								6.4		1.1	
50% (CPI +500bp) + 50% (8% accutual rate)									7.5		2.0	
<b>CASH EQUIVALENTS</b>	5.0	17	1.7	17	0.3	03	0.5	05	0.3	03	0.1	01
1 Month T-Bill			1.7		0.5		0.1		0.0		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.  
<sup>6</sup> MSCI ACWI Ex Us Gross 10/1/2010 to present.  
<sup>7</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>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



# MPERS TOTAL PLAN UNIVERSE REPORT

Public Funds (DB) > \$1 Billion (SSE) - Risk vs. Return 3 Years  
9/30/12

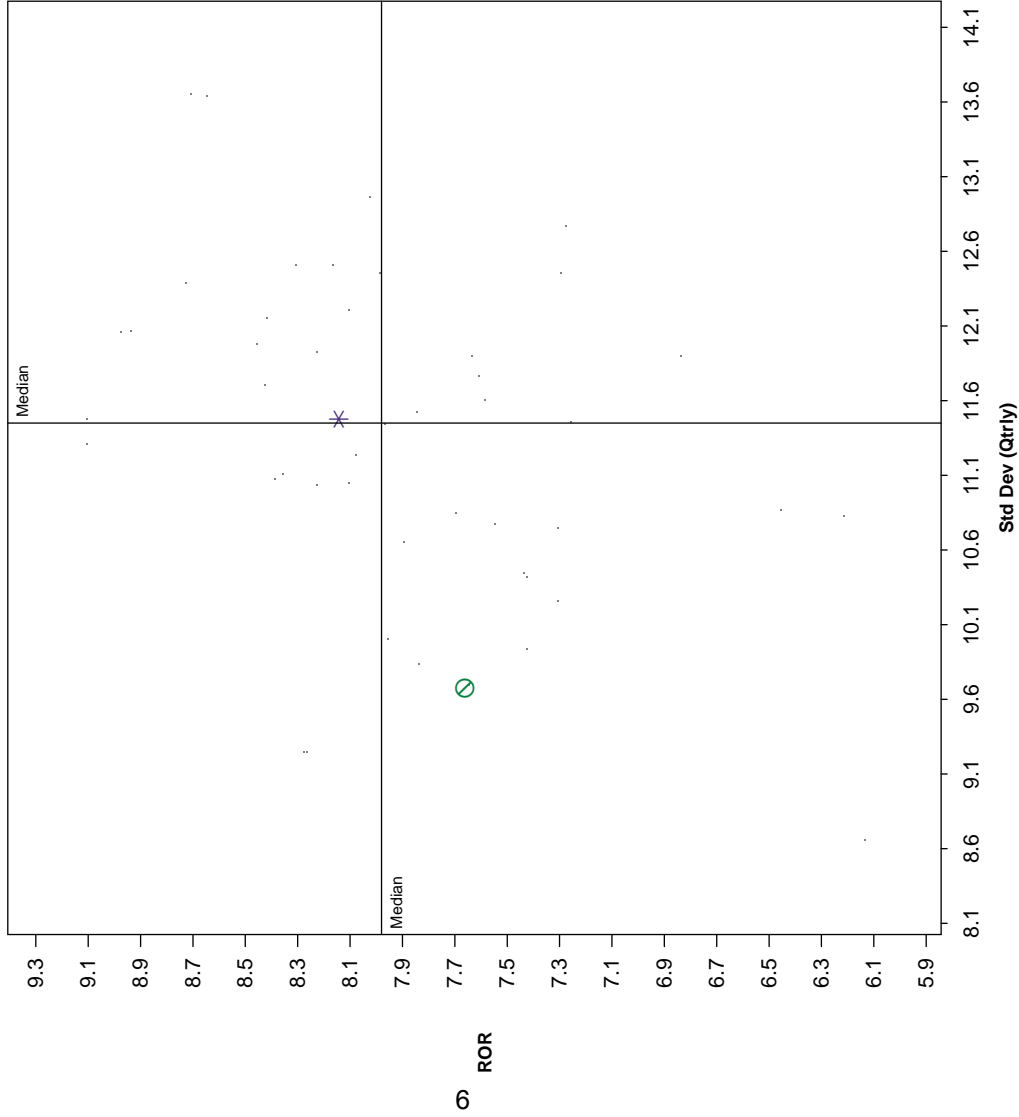


NAME	Std Dev (Qtrly) 3 Yrs	ROR 3 Yrs
5th Percentile	7.86	10.73
25th Percentile	9.21	10.08
50th Percentile	10.38	9.60
75th Percentile	11.42	8.77
95th Percentile	12.85	8.12
No. of Obs	49	50
⊙ TOTAL PUBLIC SCHOOL	8.32	7
* MPERS TOTAL PLAN POLICY	10.30	49



# MPERS TOTAL PLAN UNIVERSE REPORT

Public Funds (DB) > \$1 Billion (SSE) - Risk vs. Return 10 Years  
9/30/12



NAME	Std Dev (Qtrly) 10 Yrs	10 Yrs
5th Percentile	9.05	9.11
25th Percentile	10.70	8.37
50th Percentile	11.45	7.98
75th Percentile	12.06	7.43
95th Percentile	13.30	6.34
No. of Obs	46	47
TOTAL PUBLIC SCHOOL	9.69	8
MPERS TOTAL PLAN POLICY	11.49	54

# MPSERS

## Time-Weighted Rates of Return Public Plan Universe Comparison\* 9/30/12

	<u>Quarter</u>	<u>One Year</u>	<u>Three Year</u>	<u>Five Year</u>	<u>Ten Year</u>
<b>MPSERS</b>	<b>3.8</b>	<b>13.5</b>	<b>9.6</b>	<b>1.6</b>	<b>7.7 %</b>
Rank	88	88	51	66	64
bp Difference - Median	-95	-237	0	-49	-33
5th Percentile	5.7	19.1	10.7	3.1	9.1 %
25th Percentile	5.1	17.6	10.1	2.5	8.4 %
<b>Median</b>	<b>4.8</b>	<b>15.8</b>	<b>9.6</b>	<b>2.1</b>	<b>8.0 %</b>
75th Percentile	4.4	14.3	8.8	1.4	7.4 %
95th Percentile	3.7	12.6	8.1	0.1	6.3 %

### Five-Year Smoothing\*

	<u>2003-2008</u>	<u>2004-2009</u>	<u>2005-2010</u>	<u>2006-2011</u>	<u>2007-2012</u>
<b>MPSERS</b>	<b>8.1 %</b>	<b>4.2 %</b>	<b>3.5 %</b>	<b>2.3 %</b>	<b>1.6 %</b>
Median	7.0 %	4.2 %	3.6 %	2.0 %	2.1 %

### Return vs. Risk\*\*

	<b>ANNUALIZED RETURNS</b>		<b>STD. DEVIATIONS</b>	
	<u>Value</u>	<u>Rank</u>	<u>Value</u>	<u>Rank</u>
	<u>Five Years</u>		<u>Five Years</u>	
<b>MPSERS</b>	<b>1.6 %</b>	<b>62</b>	<b>10.0 %</b>	<b>16</b>
Median	2.1 %		11.6 %	
	<u>Ten Years</u>		<u>Ten Years</u>	
<b>MPSERS</b>	<b>7.7 %</b>	<b>65</b>	<b>8.1 %</b>	<b>12</b>
Median	7.9 %		9.6 %	

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

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

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

**Cumulative For Years Ending 9/30/12**

	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year
<b>MPSERS</b>	13.5	10.0	9.6	5.4	1.6	4.1	5.3	6.2	6.9	7.7
<b>Public Plan - Median (&gt; \$10 billion)*</b>	15.2	9.0	9.5	6.7	2.1	4.3	5.3	6.3	7.0	7.9
<b>Rank</b>	76	17	49	73	62	57	52	60	60	65
<b>bp Difference - Median</b>	-173	+101	+12	-128	-48	-19	-1	-10	-8	-29

**Consecutive For Years Ending**

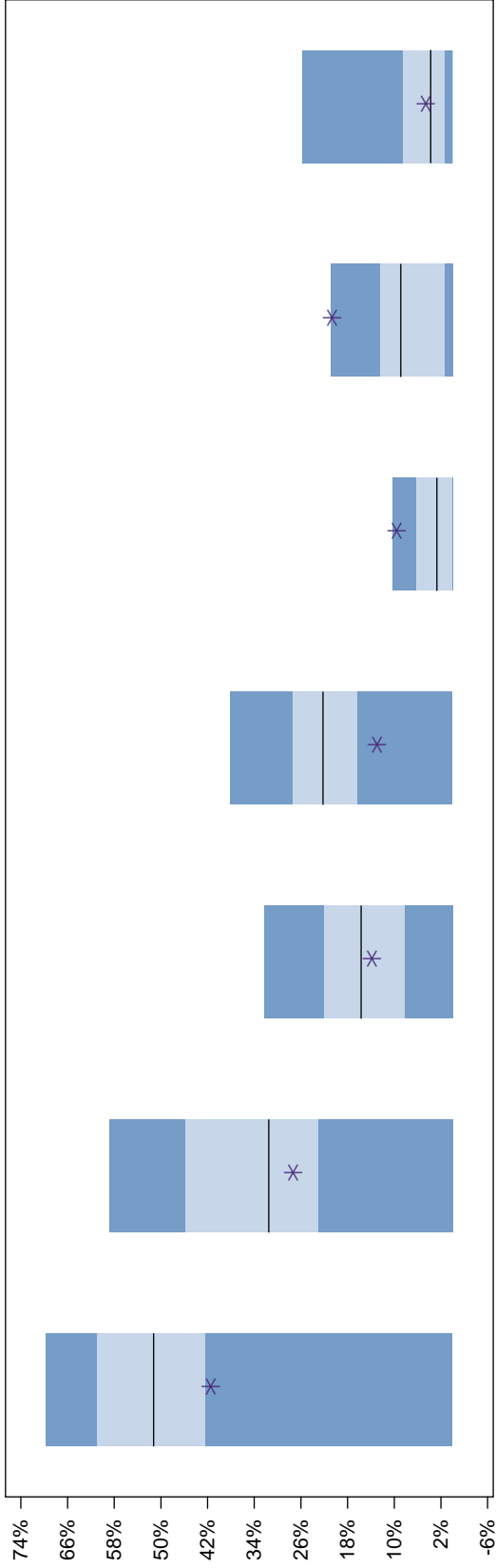
	09/12	09/11	09/10	09/09	09/08	09/07	09/06	09/05	09/04	09/03
<b>MPSERS</b>	13.5	6.6	8.8	-6.1	-12.3	17.2	12.8	12.8	12.6	14.8
<b>Public Plan - Median (&gt; \$10 billion)*</b>	15.2	2.7	10.3	0.2	-14.9	16.5	10.8	13.8	12.7	18.1
<b>Rank</b>	76	6	80	79	18	30	17	78	59	82
<b>bp Difference - Median</b>	-173	+390	-150	-630	+261	+72	+203	-95	-12	-331

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



# MPSERS TOTAL PLAN UNIVERSE REPORT

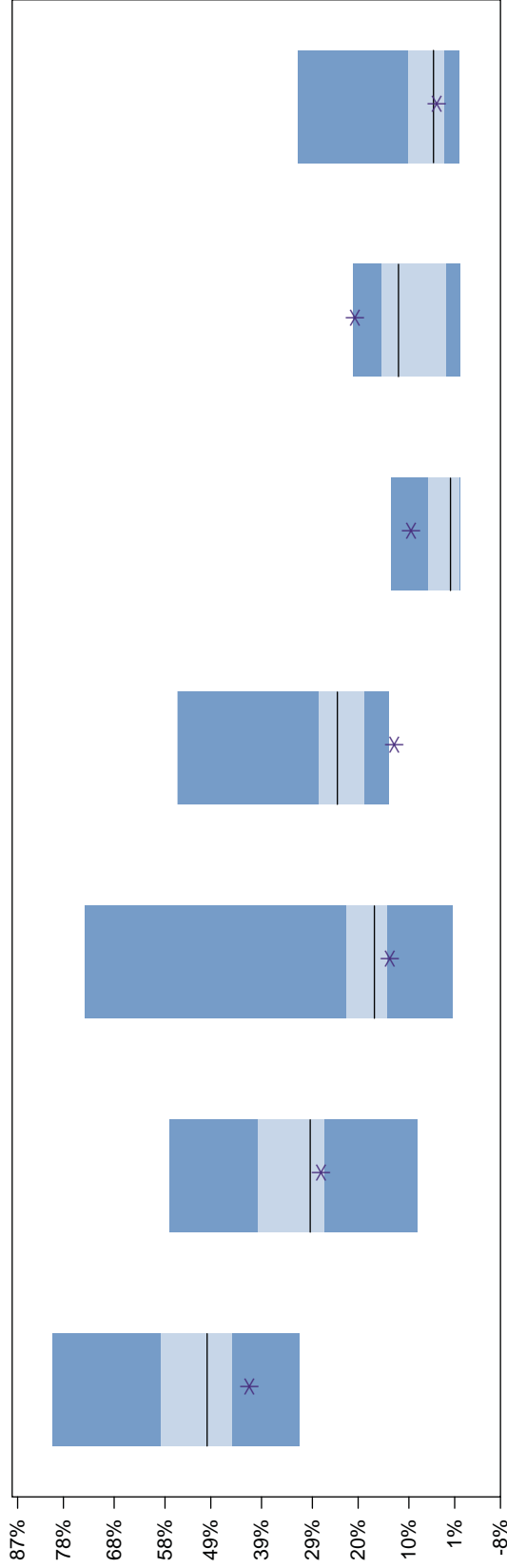
**Public Funds (DB) > \$1 Billion (SSE) - Allocation**  
**9/30/12**





# MPSERS TOTAL PLAN UNIVERSE REPORT

**Public Funds (DB) > \$10 Billion (SSE) - Allocation**  
**9/30/12**



	Equities %	Equities Domestic %	Equities Foreign %	Fixed Income %	Real Estate %	Private Equity %	Cash Equiv %
5th Percentile	80.07	57.04	73.77	55.54	13.51	21.03	31.76
25th Percentile	58.77	39.70	22.43	27.89	6.33	15.51	10.13
50th Percentile	49.73	29.43	16.81	24.10	1.82	12.07	5.16
75th Percentile	44.84	26.57	14.15	18.71	0.08	2.72	3.10
95th Percentile	31.60	8.26	1.36	13.89	0.00	0.00	0.16
No. of Obs	19	19	19	19	19	19	18
TOTAL PUBLIC SCHOOL	41.81	27.67	14.13	13.28	9.96	21.03	4.95
	92	66	77	100	16	5	58

**MSERS**  
**Time-Weighted Rates of Return**  
**Public Plan Universe Comparison\***  
**9/30/12**

	<u>Quarter</u>	<u>One Year</u>	<u>Three Year</u>	<u>Five Year</u>	<u>Ten Year</u>
<b>MSERS</b>	<b>3.8</b>	<b>13.4</b>	<b>9.4</b>	<b>1.5</b>	<b>7.5 %</b>
Rank	86	88	55	71	72
bp Difference - Median	-92	-241	-17	-65	-44
5th Percentile	5.7	19.1	10.7	3.1	9.1 %
25th Percentile	5.1	17.6	10.1	2.5	8.4 %
<b>Median</b>	<b>4.8</b>	<b>15.8</b>	<b>9.6</b>	<b>2.1</b>	<b>8.0 %</b>
75th Percentile	4.4	14.3	8.8	1.4	7.4 %
95th Percentile	3.7	12.6	8.1	0.1	6.3 %

**Five-Year Smoothing\***

	<u>2003-2008</u>	<u>2004-2009</u>	<u>2005-2010</u>	<u>2006-2011</u>	<u>2007-2012</u>
<b>MSERS</b>	<b>8.0 %</b>	<b>4.1 %</b>	<b>3.3 %</b>	<b>2.1 %</b>	<b>1.5 %</b>
Median	7.0 %	4.2 %	3.6 %	2.0 %	2.1 %

**Return vs. Risk\***

	<b>ANNUALIZED RETURNS</b>		<b>STD. DEVIATIONS</b>	
	<u>Value</u>	<u>Rank</u>	<u>Value</u>	<u>Rank</u>
	<u>Five Years</u>		<u>Five Years</u>	
<b>MSERS</b>	<b>1.5 %</b>	<b>71</b>	<b>12.2 %</b>	<b>13</b>
Median	2.1 %		14.2 %	
	<u>Ten Years</u>		<u>Ten Years</u>	
<b>MSERS</b>	<b>7.5 %</b>	<b>72</b>	<b>9.7 %</b>	<b>9</b>
Median	8.0 %		11.5 %	

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



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

**Cumulative For Years Ending 9/30/12**

	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year
MSERS	13.4	9.9	9.4	5.3	1.5	3.9	5.2	6.1	6.8	7.5
Public Plan - Median (> \$1 billion)*	15.8	9.1	9.6	6.7	2.1	4.3	5.2	6.2	6.9	8.0
Rank	88	12	55	82	71	68	52	62	61	72
bp Difference - Median	-241	+80	-17	-139	-65	-32	-1	-11	-12	-44

**Consecutive For Years Ending**

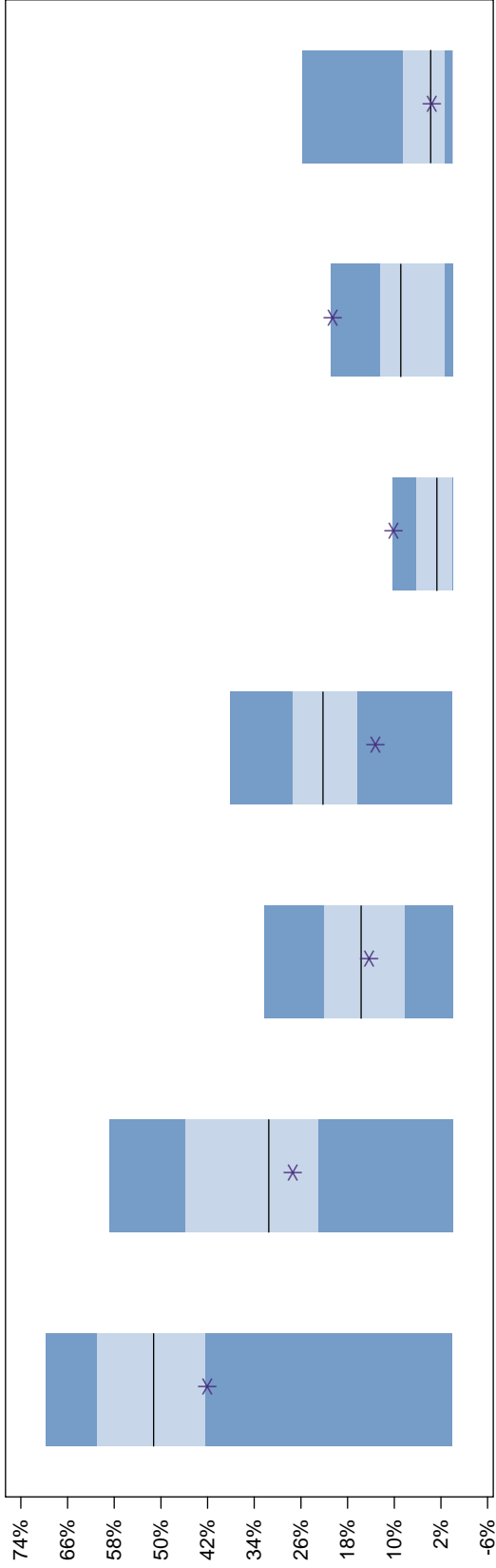
	09/12	09/11	09/10	09/09	09/08	09/07	09/06	09/05	09/04	09/03
MSERS	13.4	6.5	8.5	-6.3	-12.4	17.2	12.8	12.8	12.4	14.7
Public Plan - Median (> \$1 billion)*	15.8	2.3	10.5	0.2	-15.2	16.1	10.8	13.7	12.5	18.6
Rank	88	6	95	88	23	32	8	83	56	95
bp Difference - Median	-241	+413	-194	-644	+278	+106	+203	-91	-17	-389

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



# MSERS TOTAL PLAN UNIVERSE REPORT

## Public Funds (DB) > \$1 Billion (SSE) - Allocation 9/30/12



	Equities %	Equities Domestic %	Equities Foreign %	Fixed Income %	Real Estate %	Private Equity %	Cash Equiv %
5th Percentile	69.67	58.72	32.22	38.10	10.25	20.90	25.77
25th Percentile	60.97	45.84	22.02	27.36	6.31	12.53	8.53
50th Percentile	51.26	31.52	15.68	22.21	2.70	8.88	3.77
75th Percentile	42.30	23.04	8.24	16.29	0.03	1.41	1.31
95th Percentile	0.00	0.00	0.00	0.00	0.00	0.00	0.00
No. of Obs	53	53	53	53	53	53	52
TOTAL EMPLOYEES	42.37	27.74	14.63	13.56	10.46	20.87	3.89
	75	63	54	80	4	6	48

**MSPRS**  
**Time-Weighted Rates of Return**  
**Public Plan Universe Comparison\***  
**9/30/12**

	<u>Quarter</u>	<u>One Year</u>	<u>Three Year</u>	<u>Five Year</u>	<u>Ten Year</u>
<b>MSPRS</b>	<b>3.8</b>	<b>13.3</b>	<b>9.5</b>	<b>1.5</b>	<b>7.6 %</b>
Rank	93	91	54	70	70
bp Difference - Median	-99	-253	-13	-62	-40
5th Percentile	5.7	19.1	10.7	3.1	9.1 %
25th Percentile	5.1	17.6	10.1	2.5	8.4 %
<b>Median</b>	<b>4.8</b>	<b>15.8</b>	<b>9.6</b>	<b>2.1</b>	<b>8.0 %</b>
75th Percentile	4.4	14.3	8.8	1.4	7.4 %
95th Percentile	3.7	12.6	8.1	0.1	6.3 %

**Five-Year Smoothing\***

	<u>2003-2008</u>	<u>2004-2009</u>	<u>2005-2010</u>	<u>2006-2011</u>	<u>2007-2012</u>
<b>MSPRS</b>	<b>8.1 %</b>	<b>4.2 %</b>	<b>3.4 %</b>	<b>2.2 %</b>	<b>1.5 %</b>
Median	7.0 %	4.2 %	3.6 %	2.0 %	2.1 %

**Return vs. Risk\***

	<b>ANNUALIZED RETURNS</b>		<b>STD. DEVIATIONS</b>	
	<u>Value</u>	<u>Rank</u>	<u>Value</u>	<u>Rank</u>
	<u>Five Years</u>		<u>Five Years</u>	
<b>MSPRS</b>	<b>1.5 %</b>	<b>70</b>	<b>12.1 %</b>	<b>9</b>
Median	2.1 %		14.2 %	
	<u>Ten Years</u>		<u>Ten Years</u>	
<b>MSPRS</b>	<b>7.6 %</b>	<b>70</b>	<b>9.7 %</b>	<b>8</b>
Median	8.0 %		11.5 %	

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

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

**Cumulative For Years Ending 9/30/12**

	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year
MSPRS	13.3	10.0	9.5	5.2	1.5	4.0	5.2	6.1	6.8	7.6
Public Plan - Median (> \$1 billion)*	15.8	9.1	9.6	6.7	2.1	4.3	5.2	6.2	6.9	8.0
Rank	91	11	54	83	70	67	47	61	56	70
bp Difference - Median	-253	+87	-13	-142	-62	-27	+4	-6	-8	-40

**Consecutive For Years Ending**

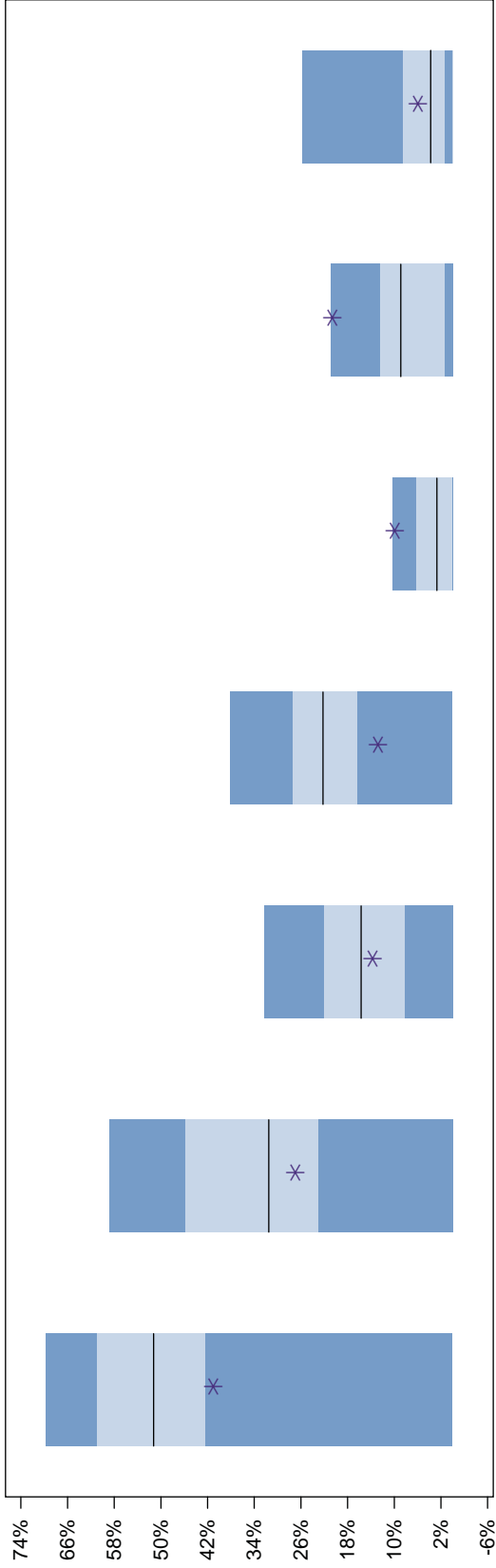
	09/12	09/11	09/10	09/09	09/08	09/07	09/06	09/05	09/04	09/03
MSPRS	13.3	6.7	8.5	-6.5	-12.2	17.4	12.9	12.9	12.3	14.8
Public Plan - Median (> \$1 billion)*	15.8	2.3	10.5	0.2	-15.2	16.1	10.8	13.7	12.5	18.6
Rank	91	4	95	90	13	28	7	83	56	95
bp Difference - Median	-253	+439	-195	-666	+302	+122	+211	-86	-18	-382

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



# MSPRS TOTAL PLAN UNIVERSE REPORT

## Public Funds (DB) > \$1 Billion (SSE) - Allocation 9/30/12



	Equities %	Equities Domestic %	Equities Foreign %	Fixed Income %	Real Estate %	Private Equity %	Cash Equiv %
5th Percentile	69.67	58.72	32.22	38.10	10.25	20.90	25.77
25th Percentile	60.97	45.84	22.02	27.36	6.31	12.53	8.53
50th Percentile	51.26	31.52	15.68	22.21	2.70	8.88	3.77
75th Percentile	42.30	23.04	8.24	16.29	0.03	1.41	1.31
95th Percentile	0.00	0.00	0.00	0.00	0.00	0.00	0.00
No. of Obs	53	53	53	53	53	53	52
TOTAL POLICE	41.36	27.30	14.06	13.13	10.24	20.93	6.29

**MJRS**  
**Time-Weighted Rates of Return**  
**Public Plan Universe Comparison\***  
**9/30/12**

	<u>Quarter</u>	<u>One Year</u>	<u>Three Year</u>	<u>Five Year</u>	<u>Ten Year</u>
<b>MJRS</b>	<b>4.0</b>	<b>13.9</b>	<b>9.0</b>	<b>1.4</b>	<b>7.3 %</b>
Rank	84	82	66	78	87
bp Difference - Median	-72	-188	-64	-75	-69
5th Percentile	5.7	19.1	10.7	3.1	9.1 %
25th Percentile	5.1	17.6	10.1	2.5	8.4 %
<b>Median</b>	<b>4.8</b>	<b>15.8</b>	<b>9.6</b>	<b>2.1</b>	<b>8.0 %</b>
75th Percentile	4.4	14.3	8.8	1.4	7.4 %
95th Percentile	3.7	12.6	8.1	0.1	6.3 %

**Five-Year Smoothing\***

	<u>2003-2008</u>	<u>2004-2009</u>	<u>2005-2010</u>	<u>2006-2011</u>	<u>2007-2012</u>
<b>MJRS</b>	<b>7.8 %</b>	<b>4.1 %</b>	<b>3.1 %</b>	<b>1.9 %</b>	<b>1.4 %</b>
Median	7.0 %	4.2 %	3.6 %	2.0 %	2.1 %

**Return vs. Risk\***

	<b>ANNUALIZED RETURNS</b>		<b>STD. DEVIATIONS</b>	
	<u>Value</u>	<u>Rank</u>	<u>Value</u>	<u>Rank</u>
	<u>Five Years</u>		<u>Five Years</u>	
<b>MJRS</b>	<b>1.4 %</b>	<b>78</b>	<b>12.0 %</b>	<b>8</b>
Median	2.1 %		14.2 %	
	<u>Ten Years</u>		<u>Ten Years</u>	
<b>MJRS</b>	<b>7.3 %</b>	<b>87</b>	<b>9.6 %</b>	<b>8</b>
Median	8.0 %		11.5 %	

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

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

**Cumulative For Years Ending 9/30/12**

	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year
MJRS	13.9	9.9	9.0	4.9	1.4	3.8	5.0	5.9	6.5	7.3
Public Plan - Median (> \$1 billion)*	15.8	9.1	9.6	6.7	2.1	4.3	5.2	6.2	6.9	8.0
Rank	82	11	66	85	78	70	61	74	72	87
bp Difference - Median	-188	+85	-64	-175	-75	-45	-15	-31	-40	-69

**Consecutive For Years Ending**

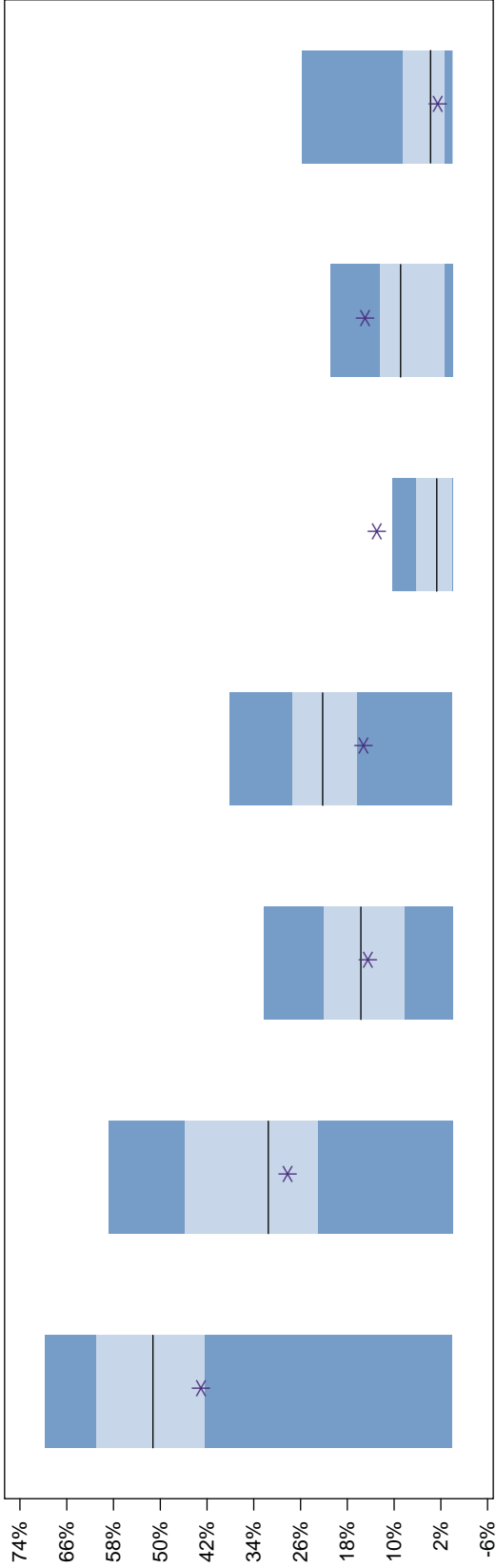
	09/12	09/11	09/10	09/09	09/08	09/07	09/06	09/05	09/04	09/03
MJRS	13.9	6.1	7.0	-6.4	-11.7	17.0	12.5	12.3	11.4	14.8
Public Plan - Median (> \$1 billion)*	15.8	2.3	10.5	0.2	-15.2	16.1	10.8	13.7	12.5	18.6
Rank	82	9	100	89	7	35	10	91	78	95
bp Difference - Median	-188	+374	-343	-652	+352	+83	+176	-149	-110	-382

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



# MJRS TOTAL PLAN UNIVERSE REPORT

## Public Funds (DB) > \$1 Billion (SSE) - Allocation 9/30/12



	Equities %	Equities Domestic %	Equities Foreign %	Fixed Income %	Real Estate %	Private Equity %	Cash Equiv %
5th Percentile	69.67	58.72	32.22	38.10	10.25	20.90	25.77
25th Percentile	60.97	45.84	22.02	27.36	6.31	12.53	8.53
50th Percentile	51.26	31.52	15.68	22.21	2.70	8.88	3.77
75th Percentile	42.30	23.04	8.24	16.29	0.03	1.41	1.31
95th Percentile	0.00	0.00	0.00	0.00	0.00	0.00	0.00
No. of Obs	53	53	53	53	53	53	52
TOTAL JUDGES	43.35	28.55	14.81	15.59	13.28	15.29	2.84
	71	60	53	79	3	13	54





**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**ASSET ALLOCATION REVIEW**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**DECEMBER 6, 2012**



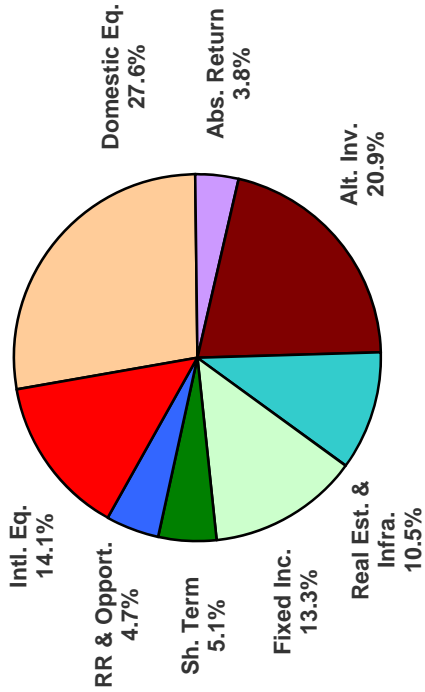
**Jon M. Braeutigam  
Chief Investment Officer  
Bureau of Investments**



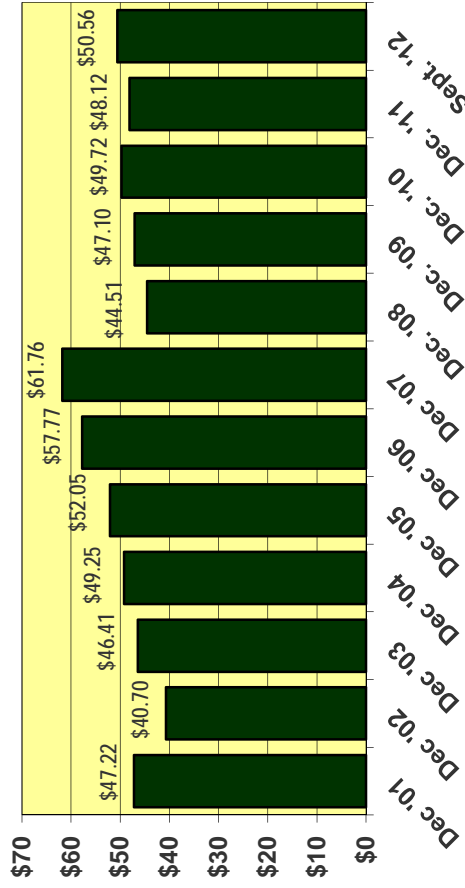


# STATE OF MICHIGAN RETIREMENT SYSTEMS PROFILE - SEPTEMBER 2012

## Asset Allocation 9/30/12



## Market Value\* 12/01 - 9/12 (Billions of Dollars)



## Asset Allocation By Market Value (In Millions)

Investment Strategies	9/30/2012	6/30/2012
Domestic Equity	\$13,959	\$13,848
Alternative Investments	10,575	10,860
International Equity	7,147	7,003
Fixed Income	6,729	6,590
Real Estate & Infra.	5,292	5,251
Short Term**	2,575	2,252
Real Return & Opport.	2,381	1,923
Absolute Return	1,905	1,854
<b>TOTAL</b>	<b>\$50,563</b>	<b>\$49,581</b>

## Short Term Equivalents

Short Term Strategy**	\$2.6
Short Term in Other Inv. Strategies	0.8
<b>TOTAL SHORT TERM</b>	<b>\$3.4</b>

6.7% of Total Funds

## Market Value By Plan 9/30/2012

	Market Value (In Millions)	%
Public School Employees	\$39,586	78.3%
State Employees	9,638	19.0%
State Police	1,094	2.2%
Judges	245	0.5%
<b>TOTAL</b>	<b>\$50,563</b>	<b>100.0%</b>



17th Largest DB Public Pension Fund in the U.S.  
20th Largest DB Pension Fund in the U.S.



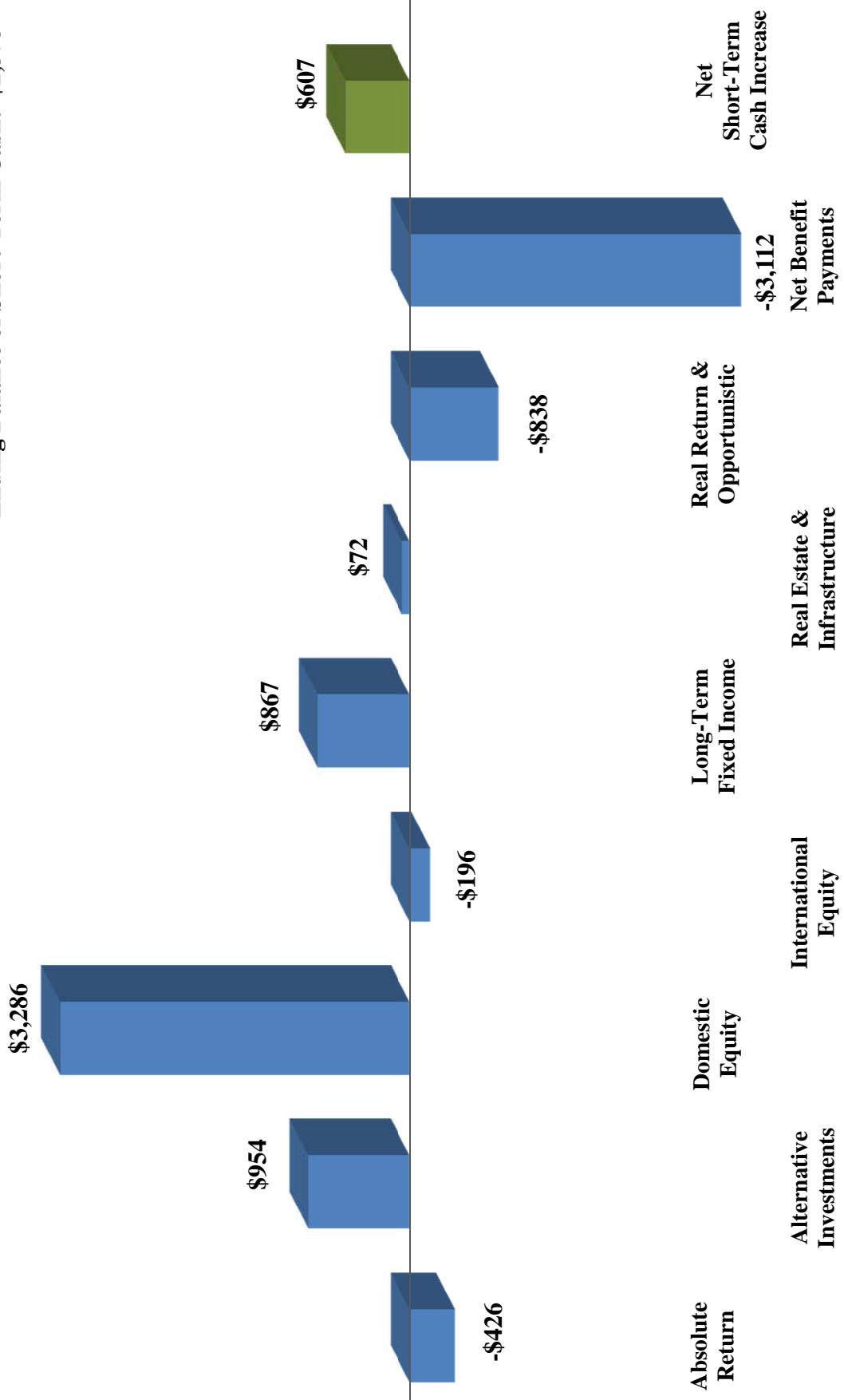
Pensions & Investments Survey - February 6, 2012 Issue

\*The retirement systems annually pay out approximately \$2.9 billion to beneficiaries in excess of contributions (FY2011).

# Sources and Uses of Cash September 2011 ~ September 2012

Beginning Balance of Short-Term Cash: \$1,771

Ending Balance of Short-Term Cash: \$2,378



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 9/30/12	Target 9/30/12	Target* 9/30/13	Actual 9/30/12	Target 9/30/12	Target* 9/30/13	Actual 9/30/12	Target 9/30/12	Target* 9/30/13	Actual 9/30/12	Target 9/30/12	Target* 9/30/13	Ranges
Broad U.S. Equity	27.7%	30.0%	31.0%	27.7%	30.0%	31.0%	27.3%	30.0%	31.0%	28.5%	30.0%	29.0%	20% - 50%
Alternative Invest.	21.0%	18.0%	16.0%	20.9%	18.0%	16.0%	20.9%	18.0%	16.0%	15.3%	15.5%	14.0%	10% - 25%
Broad Int'l Equity	14.1%	14.5%	16.0%	14.6%	14.5%	16.0%	14.1%	14.5%	16.0%	14.8%	14.0%	15.0%	10% - 20%
U.S. Fixed Income Core	13.3%	16.0%	15.0%	13.6%	16.0%	15.0%	13.1%	16.0%	15.0%	15.6%	17.5%	19.0%	10% - 25%
Real Estate Core	10.0%	9.0%	6.0%	10.5%	9.0%	6.0%	10.2%	9.0%	6.0%	13.3%	10.0%	7.0%	5% - 15%
Real Return / Opportunistic	4.8%	4.0%	5.0%	4.5%	4.0%	5.0%	3.9%	4.0%	5.0%	5.2%	4.0%	5.0%	0% - 10%
Absolute Return	3.8%	3.0%	4.0%	3.9%	3.0%	4.0%	3.8%	3.0%	4.0%	3.9%	3.0%	4.0%	0% - 12%
Cash	4.9%	4.5%	4.0%	3.9%	4.5%	4.0%	6.3%	4.5%	4.0%	2.8%	5.0%	4.0%	1% - 9%
Infrastructure	0.4%	1.0%	3.0%	0.4%	1.0%	3.0%	0.4%	1.0%	3.0%	0.6%	1.0%	3.0%	0% - 5%
TOTAL	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**

**DECEMBER 6, 2012**



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





# CAPITAL MARKETS

September 30, 2012

## Return and Risk Assumptions, Benchmark and Outlook

*A starting point.*

<u>MPSERS Plan</u>	<u>Assumed Return*</u> <u>(Arithmetic)</u>	<u>Standard Deviation*</u>	<u>Trailing 10-Year</u> <u>(Benchmark**)</u>	<u>Tactical (Short Term)</u> <u>Expectations***</u>
Private Equity	11.8%	30.3%	8.3%	Trim
International Equity	8.7%	20.8%	10.3%	Trim
Domestic Equity	7.9%	18.0%	8.3%	Trim
Infrastructure	7.4%	13.8%	6.4%	Add
Real Estate (Core)	7.0%	12.5%	7.0%	Trim
Real Ret/Oppportunistic	6.2%	11.4%	7.5%	Add
Absolute Return	7.0%	9.5%	0.8%	Hold
Long-Term Fixed	4.3%	5.8%	5.4%	Trim
Short-Term	2.3%	3.0%	1.6%	Hold

\*RV Kuhns 2012 Long Term Return/Risk assumptions

\*\*2012 Investment policy statement; annualized returns

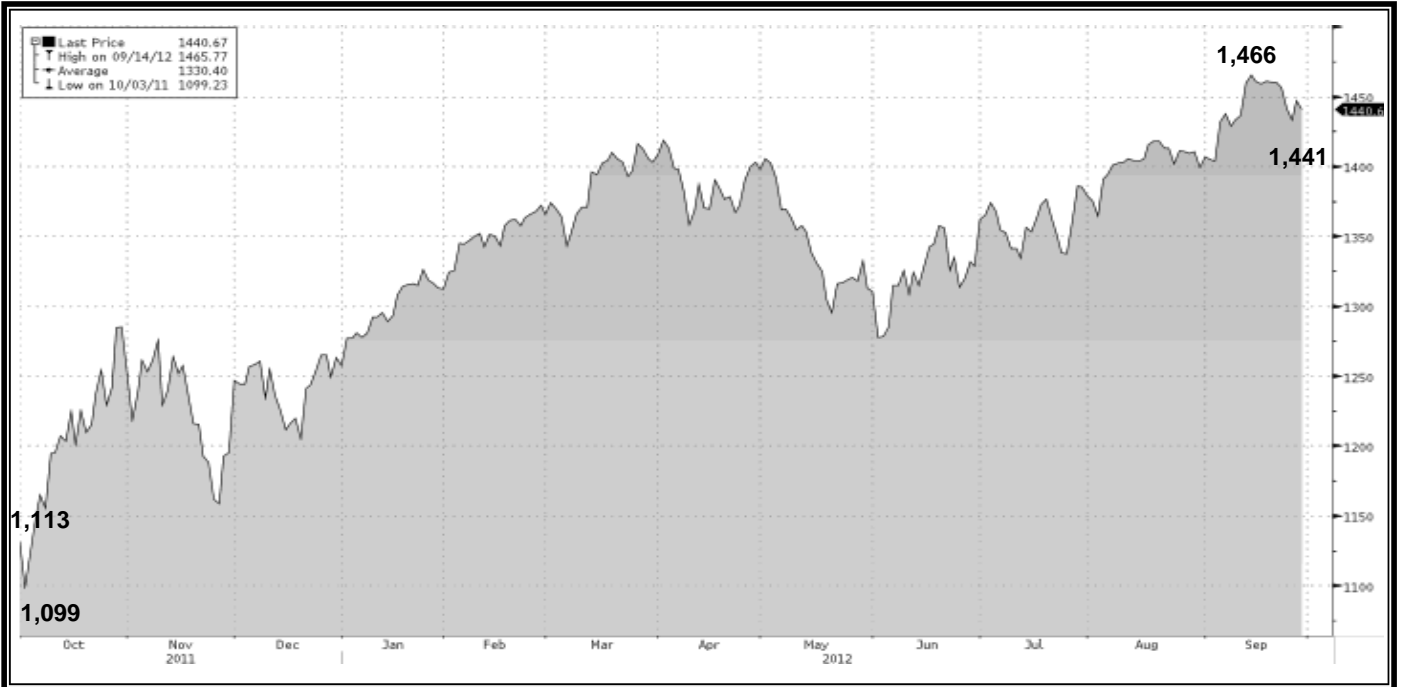
\*\*\*Actual investments may differ due to changing conditions and the availability of new information

## Overview

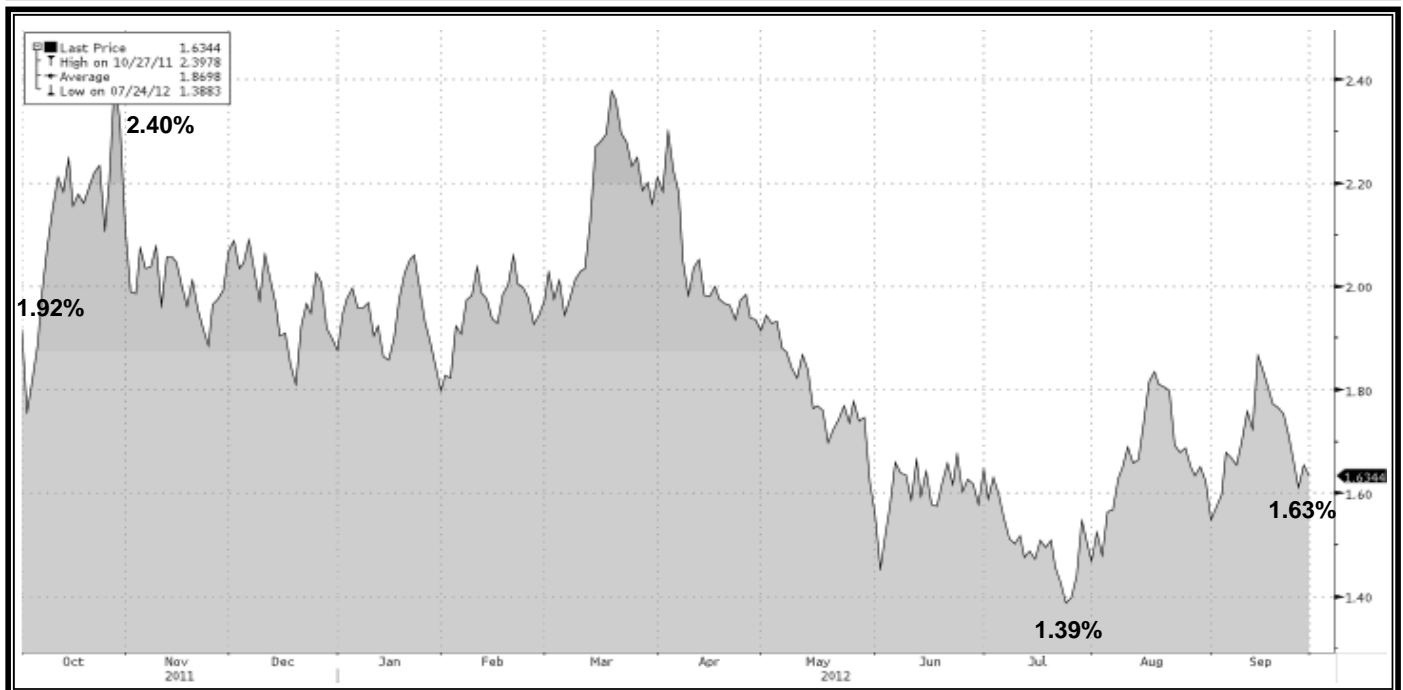
*Price volatility risks with equities, low yields, and selectivity strategies challenged.*

- Various equity asset classes have highest long-term rates of returns expectations; however, **equity returns are volatile, have a high sensitivity to changes in the macro-economy, and increasingly becoming more correlated amongst one another.**
- Within publicly traded equities, the U.S. continues to outperform international, as it is seen as a safer market and not excessively priced. Emerging markets continue to be a growth story at reasonable valuations, especially the burgeoning middle-class consumer. Developed international offers value; however, growth prospects and demographics are poor.
- Income or yield oriented, especially publicly traded, assets have been bid up and future returns are expected to moderate. In the examples of fixed income (short and long-term) yields are below the rate of inflation. **Over the past few years, the Plan has shifted allocation towards non-publicly traded, credit oriented strategies.** The advantages of these strategies are good cash flows, better than 8% expected returns, and diversification away from volatile equities. Because of low cap-rates, the Plan is beginning to look towards real estate as a source of liquidity.
- Strategies relying on selectivity to generate returns have performed poorly. Hedge funds, for example have posted unusually poor returns, underperforming stock and bonds. When comparing a simple 60/40% stocks and bonds portfolio with the HFRI Fund-of-Funds Conservative index, it is noticeable that **hedge funds have underperformed by -17.3%, -9.1%, -4.9%, and -4.4% 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 4.9% and 2.9% 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 reading on the year-over-year change in CPI is 2.2%. Because of this fact, inflation oriented strategies (such as real return, commodities, infrastructure, etc.) will be targeted selectively.

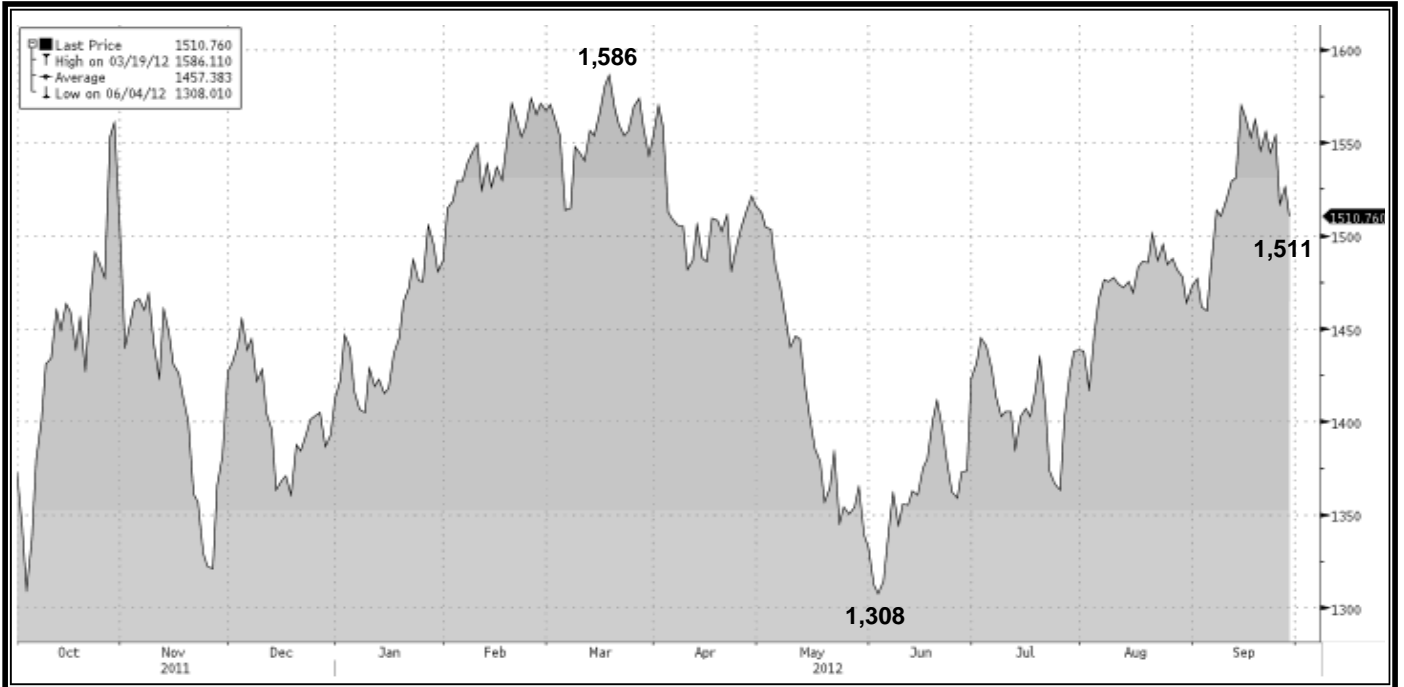
## S&P 500 INDEX ONE YEAR ENDING 9/30/12



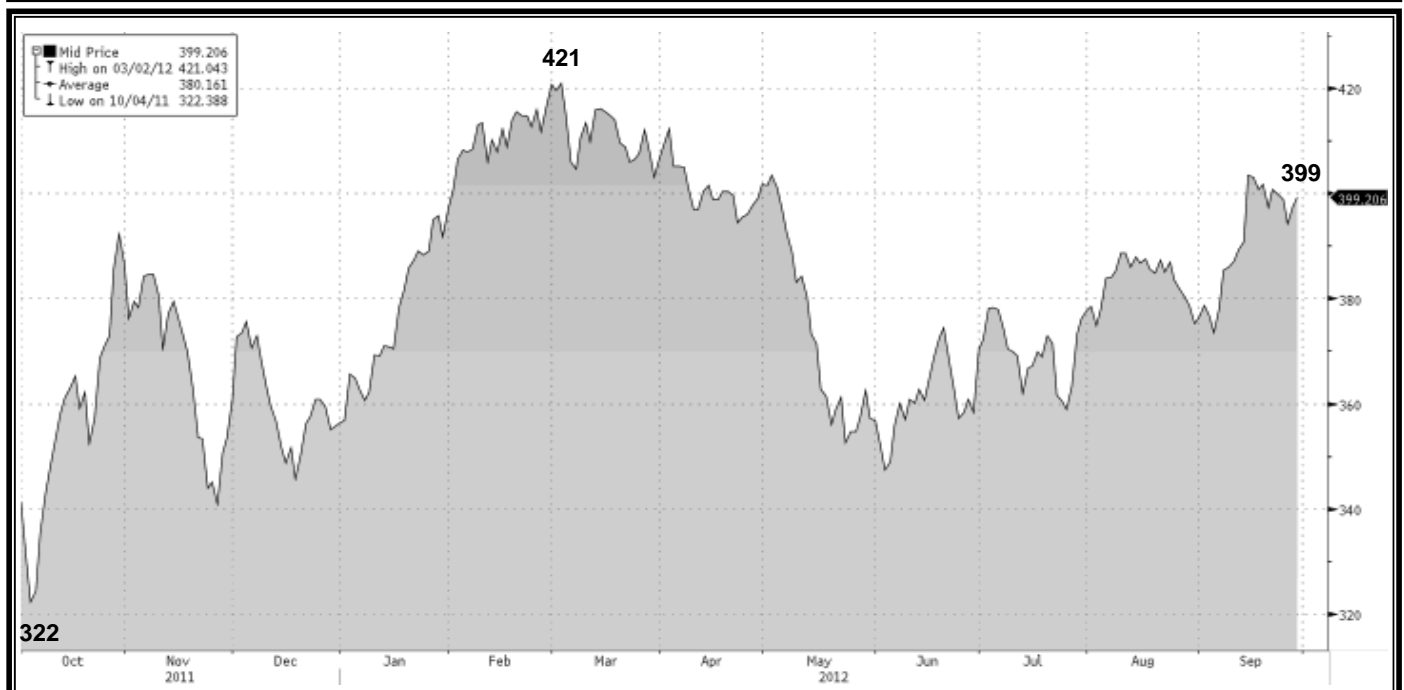
## TEN-YEAR U.S. TREASURY NOTE YIELDS ONE YEAR ENDING 9/30/12



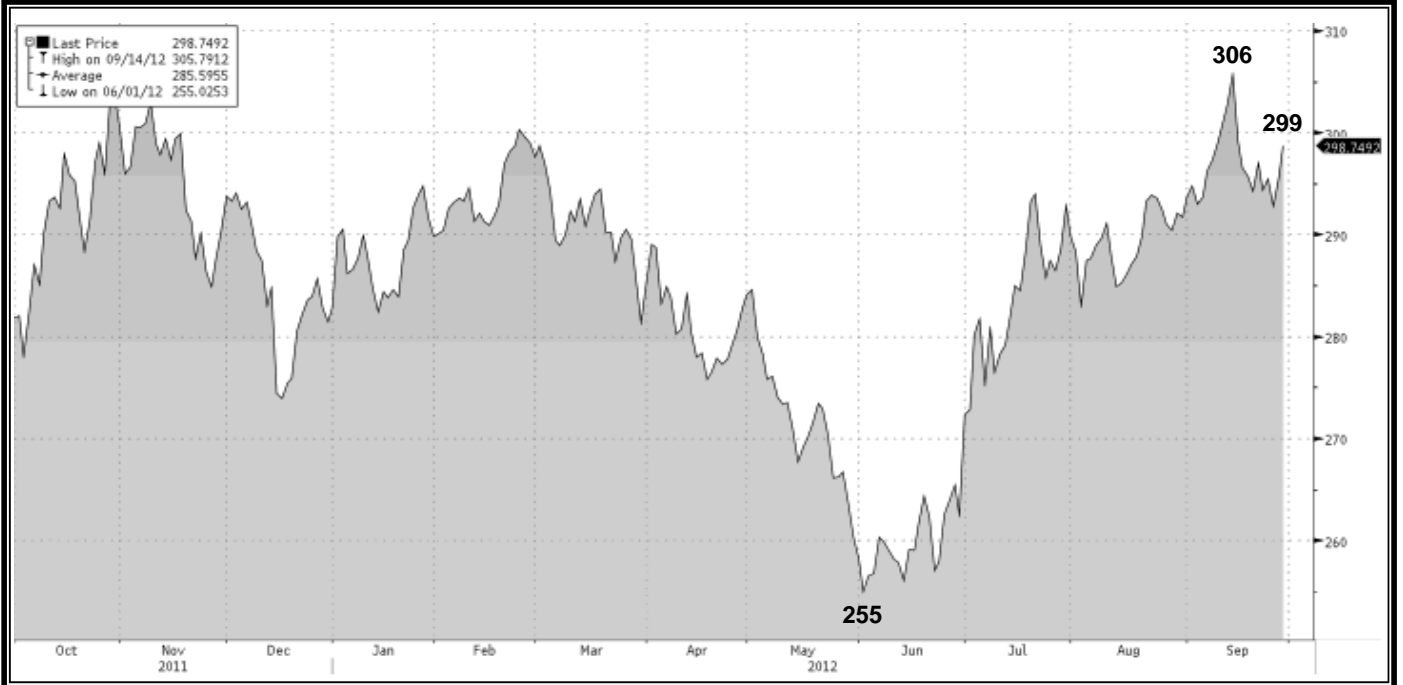
## MSCI EAFE INDEX ONE YEAR ENDING 9/30/12



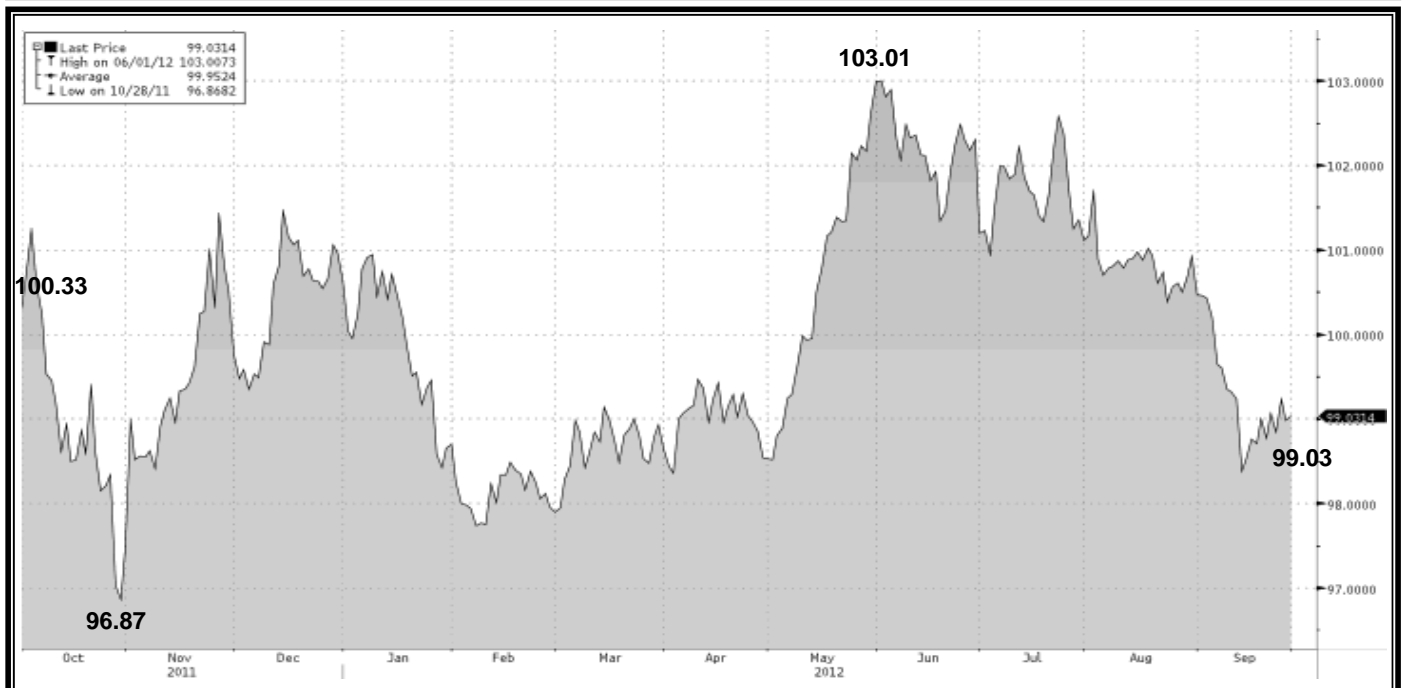
## MSCI EMERGING ONE YEAR ENDING 9/30/12



## DOW JONES UBS COMMODITY INDEX T.R. ONE YEAR ENDING 9/30/12



## U.S. DOLLAR TRADE-WEIGHTED INDEX ONE YEAR ENDING 9/30/12



## Domestic Equity

*Better than bonds, but is that enough? Prefer larger over smaller.*

- The returns in Domestic Equities recently have been very strong. The broad domestic market index, S&P 1500, returned 30.2% for the year and 13.4% over the past three years. Longer term, **over the past ten years the domestic equity index produced an annualized rate of return of 8.4%**.
- 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. The macroeconomic backdrop, especially the U.S. fiscal cliff, the European economic recession, and the Chinese economic growth rate will greatly influence the direction of the market in the coming months.
- 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 3.2%, 1.9%, 2.2%, and 2.7% respectively. However, the run in small cap outperformance may be coming to an end. At the end of September, large caps broadly sold at a price to trailing operating earnings multiple of 14.1 times. Small caps, in contrast, sold at a multiple of 16.1 times, or for a premium of 14%. **Today, the price paid for small cap stocks relative to large caps is close to the highest paid on record, going back to 1983.** The plan is under weighted U.S. small cap stocks.
- The S&P 500 growth index trailed the value index by -0.9% over the past year. This is a reversal in the three and five year trend where growth has outperformed value by 3.2% and 5.2% on an annualized basis. Longer term, over the past ten years, the difference is negligible with growth beating value by 0.2% annualized. The plan currently is not using style as a valued added tool, finding opportunities in both growth and value indexes.

## International Equity

*Developed and Emerging both have something to prove.*

- The returns in International Equities recently have been good, though trailing domestic equities. The broad international market index, MSCI ACWI Ex-USA, returned 15.0% for the year and 3.6% over the past three years. Longer term, **over the past ten years the international equity index produced an annualized rate of return of 10.3%**.
- The strength in the ten-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 17% annualized, nearly a fivefold increase in value over the period. Over the past one, three, five, and ten years emerging markets have annually developed markets by 2.8%, 3.4%, 4.2%, and 8.1% respectively.
- International equity is priced at a discount relative to domestic equity. Excluding non-earning companies, **relative to the S&P 500 developed markets trade at an 11% discount** price to trailing earnings multiple of 12.8 times. However, the valuation discount may in fact be warranted due to the poor economic backdrop for the major developed markets and the slower earnings growth prospects of the companies. By comparison, **emerging markets trade at a 21% 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 some room to run and still stay within their sideways price channel while emerging markets, on the other hand, are stuck in a downward sloping price channel and until that breaks the near term expectation is for the markets to continue to trickle down.
- The plan is underweight international equities relative to the strategic policy as well as to a global benchmark. Within international equities, the plan is market weighted with respect to developed and emerging markets.

## Interest Rates

*New ways to lower rates.*

- Interest rates were lower at the end of September than they were one year prior. This is especially true at the middle of the rate curve. At the end of September, the 10-year Treasury rate was 1.63%, less than half the 3.3% September 2009 rate. Fed funds short-term rates are less than 0.25%. Both rates are below the latest year-over-year inflation rate of 2.2%, meaning negative real interest rates. **Investors of U.S. 10-year (or shorter dated) bonds stand a high probability of losing purchasing power if investments are 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 third in terms of steepness since 1977.
- U.S. investment grade corporate rates continue to tighten. These rates are near historic medians as they are as tight as they have been in the past five years.
- On September 13, 2012, the Federal Reserve announce a new \$40 billion a month quantitative easing (QE3) strategy. The program is open-ended, meaning unlike other similarly announced programs where the total dollar amount and time line were given, this program will continue until the Federal Reserve votes to end it. The program specifically targets agency mortgage-backed securities. In addition to announcing the security purchase program, the board announced their intention to leave short-term rates extremely low until at least mid-2015.
- On September 26, **in response to QE3 the difference between a U.S. 30-year MBS yield and the 10-year Treasury yield was only 5 basis points.** Since that day the spreads have normalized a bit, though at the end of October the spread was still 59 basis points tighter than the past ten-year average.

## 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 32.2%, 20.4%, 2.1%, and 11.4% 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, it is expected that the Plan's real estate returns will be in the high single low double digit kinds of total returns over the next year.
- 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.

## Inflation

*Not much, but on alert.*

- Although there are concerns that the various QE strategies will lead to high inflation, CPI is only at 2.2%. **Crude oil futures were priced at \$86.24 at the end of October, down almost \$7 from the year prior.**
- Commodities broadly have been trending down since 2007. On the other hand, food prices have steadily increased over the past decade, and remain at the high end of the price channel. Some have concerns that the increase in wealth in emerging markets, specifically the increase in demand for foods that are associated with wealth, will outstrip supply leading to increased prices. Furthermore, not all emerging economies are poised for increased wealth and food inflation could lead to political instability.

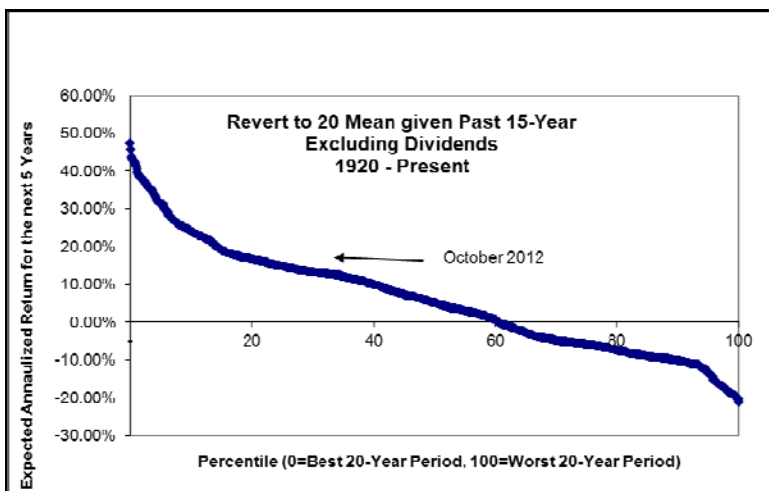
# Domestic Equities

## S&P 500 – 12/31/08 – 10/31/12



- At the beginning of 2012, the S&P 500 price broke out above the 200-day moving average.
- The market hit its 52-week high 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 179.9% or 5.3% annualized.
- The S&P 500 has increased by 48.5% over the past 15 years.
- Using the 20-year median price return as a projection, there is a 50% chance that the annualized price return for the S&P 500 will be 13.5% over the next 5 years.

## Earnings Based Outlook

<u>Scenario</u>	<u>Price Return Estimate</u>	<u>Total Return Estimate</u>	
Super Bull	21.2%	24.8%	
Bull	10.2%	14.5%	High
Base	2.7%	6.4%	Mid
Bear	-7.7%	-4.9%	Low
Super Bear	-15.5%	-12.9%	

## Assumptions

<u>2017 Earnings</u>	<u>2017 P/E Ratio</u>	<u>Dividend Payout</u>
\$148	25.0	62%
\$104	15.5	54%
\$61	10.0	42%

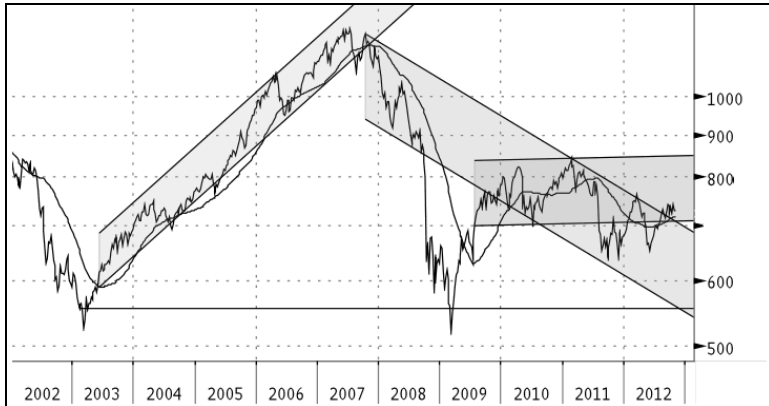
Based on Robert Shiller data



# International Equities

## Developed Markets

### MSCI EAFE – 12/31/01 – 10/31/12



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

## Emerging Markets

### MSCI Emerging Markets – 12/31/01 – 7/31/12



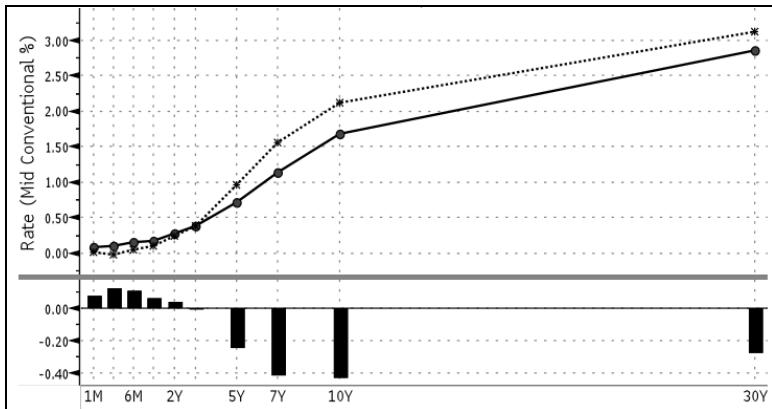
- The “V-shaped” recovery in emerging markets began in 2008. However, the rate of appreciation has slowed since late 2009.
- The upward sloping price trend established in 2002 is still intact.
- However, the price trend since 2007 has been weakness.

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

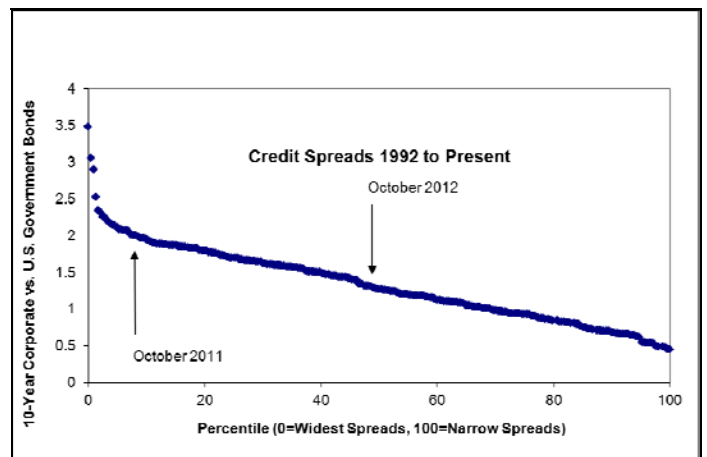
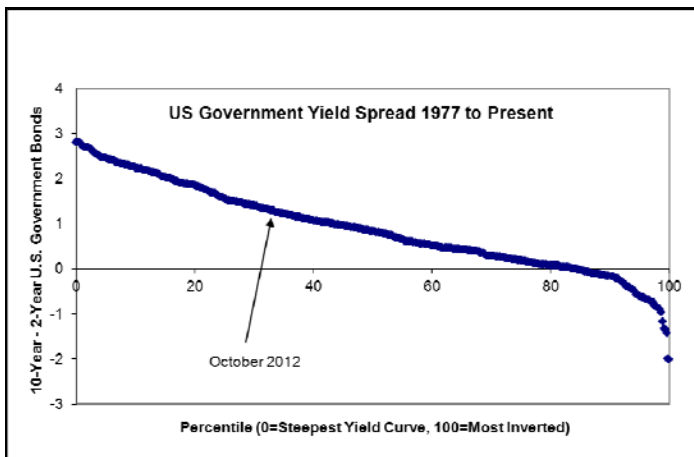
	<u>Developed</u>	<u>Emerging</u>
October 31, 2012	2	7
December 31, 2011	5	2
December 31, 2010	5	2

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

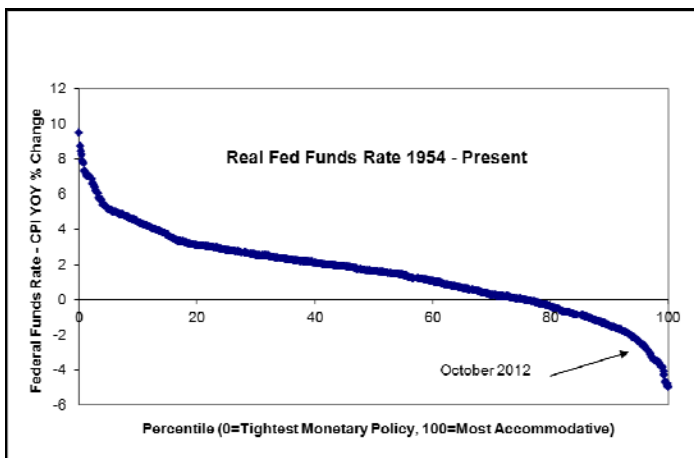


- Over the past year, mid and long rates have decreased.
- Rates at the short end are still very low.



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

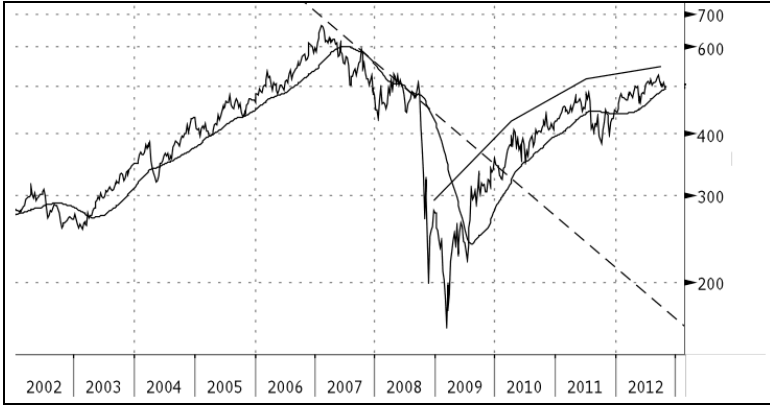
- Credit spreads have compressed.
- Credit spreads are now average.



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

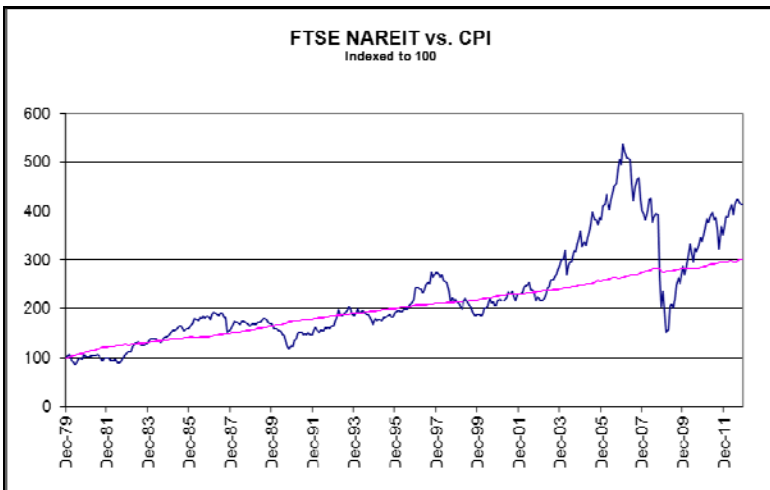
# U. S. Real Estate

## FTSE NAREIT Index – 12/31/05 – 7/31/12

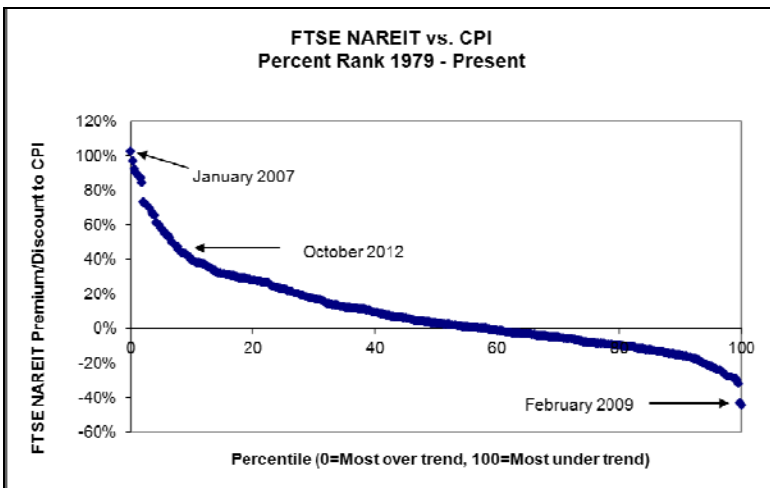


- Commercial real estate represented by the FTSE NAREIT Index has rebounded strongly since the first quarter of 2009 and has been trending up.
- The trend rate of acceleration appears to have topped.
- The index price is above its 200-day moving average.

## Return Outlook

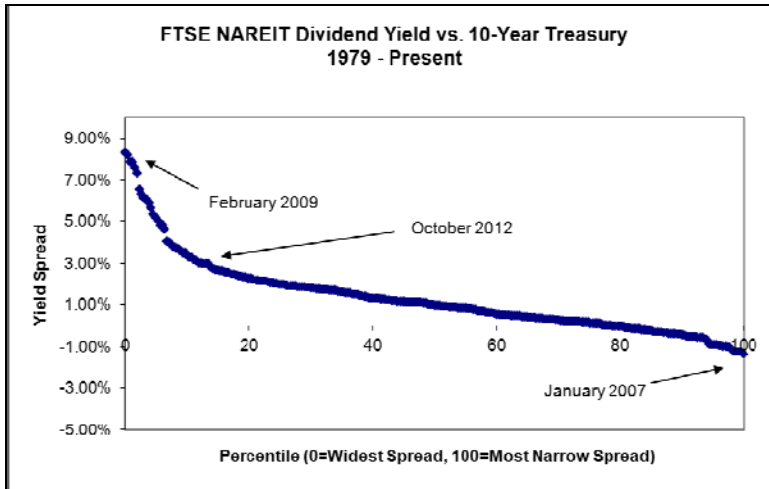


- REITs prices have trended around CPI.

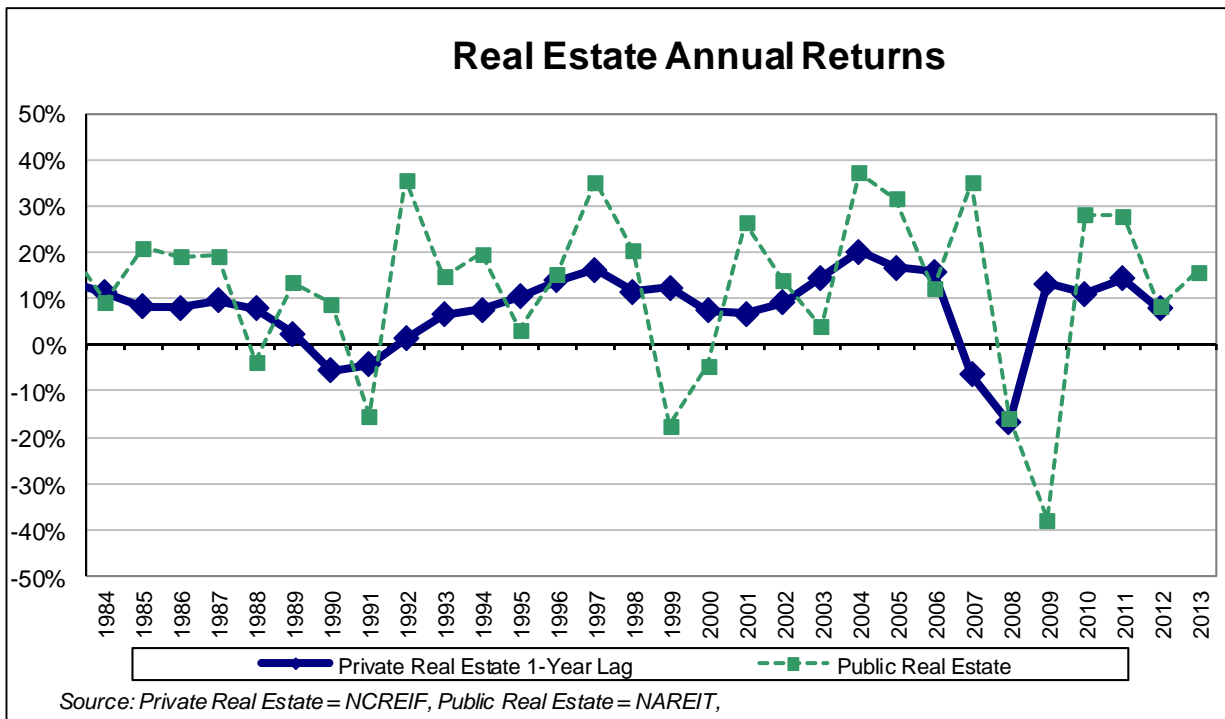


- REITs have priced lower ~ 90% of the time.
- REITs are very expensive when compared to the CPI.

## U.S. Real Estate - Continued



- The Index normally yields 0.96% more than 10-Year Treasuries.
- Current dividend yield is at 4.2%.
- When compared against the 10-Year Treasury, REITs are inexpensively priced.



- Private real estate returns historically have followed public real estate (REIT) returns.
- Using the public REIT market as a guide, private real estate returns could return high-single, low-double digit positive returns over the next few years.

# Commodities

## CRB Index – 12/31/01 – 7/31/12



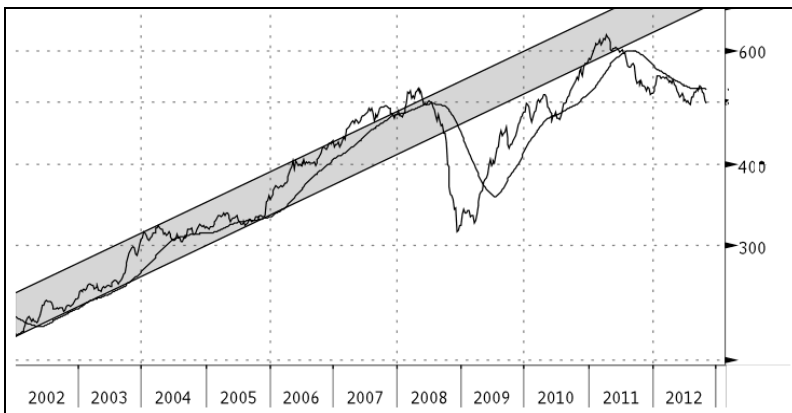
- Commodity prices, as measured by the ThompsonReuters / Jeffries CRB Index, continue the down-ward sloping price trend.
- Inflation does not appear to be a 2013 concern.

## CRB Food Index – 12/31/01 – 7/31/12



- CRB Food index remains elevated.
- Index price break-out in late 2010.
- Price increase trend has moderated.

## CRB Raw Industrials Index – 12/31/01 – 7/31/12



- CRB Raw Industrials index trend has rolled over.
- Price trend is falling.





**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**ECONOMIC AND MARKET REVIEW  
AND OUTLOOK**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**DECEMBER 6, 2012**



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



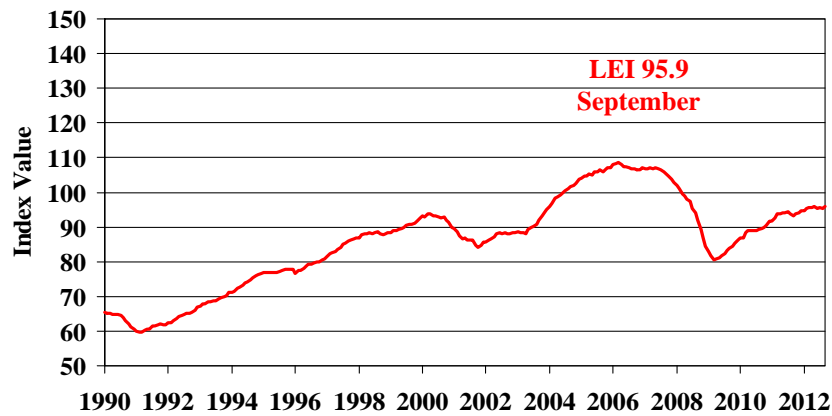


# Economic Outlook Summary

- With only modest economic growth, the jobs market is stagnant.
- Corporations are very healthy earning record profits, record margins, and low borrowing costs.
- Foreclosures remain a concern for housing.
- Households continue to deleverage with no real gain in personal incomes.
- Interest rates are very low and are expected to slowly rise.

IAC 12-6-12

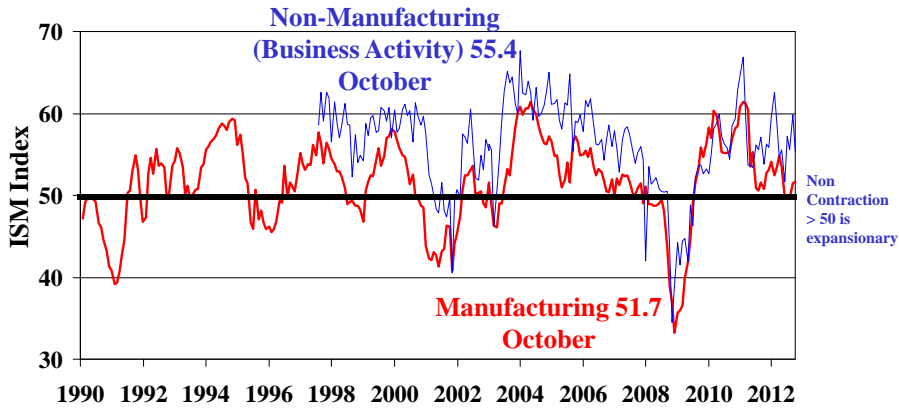
## U.S. Leading Economic Indicators Continued Growth At A Slow Rate



Source: Bloomberg

IAC 12-6-12

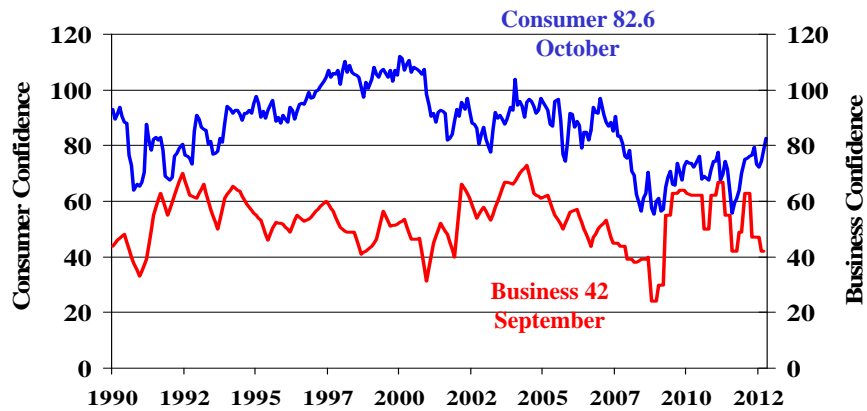
## Manufacturing/Non-Manufacturing Still In Expansion Mode



Source: Institute for Supply Management

IAC 12-6-12

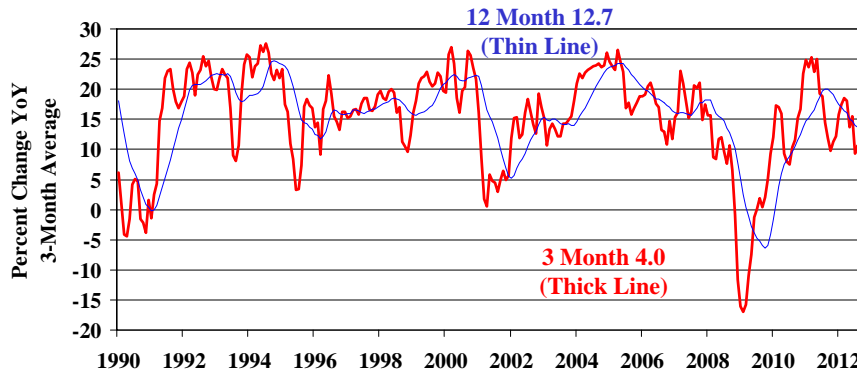
## CEO Confidence Remains Pessimistic Consumers Optimistic



Sources: University of Michigan, Survey Research Center and The Conference Board

IAC 12-6-12

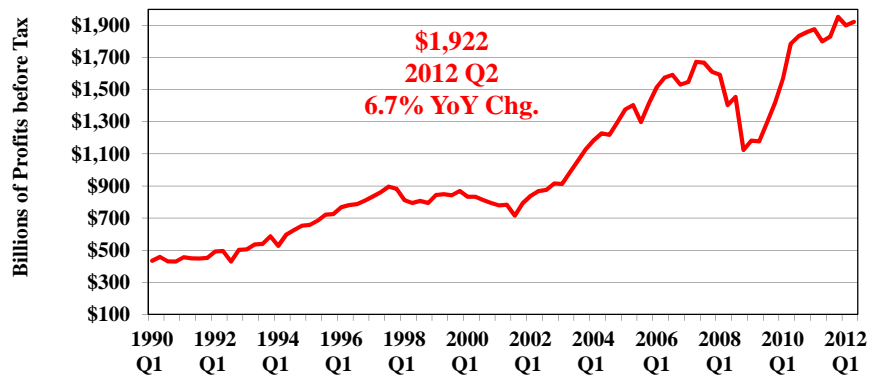
# Capital Spending Expectations Down



Source: Philadelphia Federal Reserve Bank

IAC 12-6-12

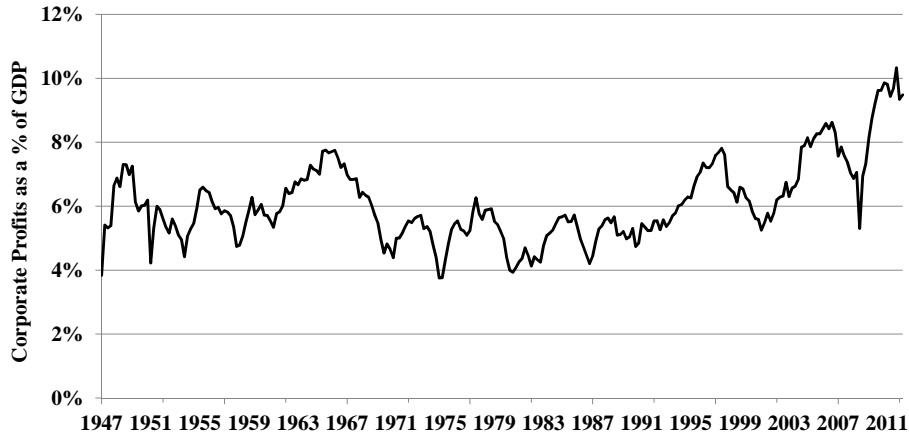
# Corporate Profits Plateau



Source: U.S. Department of Commerce, Bureau of Economic Analysis

IAC 12-6-12

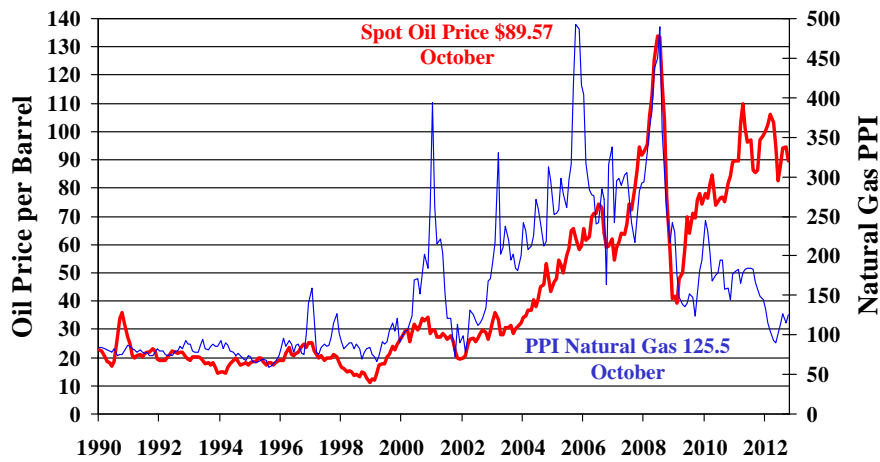
# U.S. Corporate Profits as a Percent of GDP



Source: U.S. Department of Commerce, Bureau of Economic Analysis

IAC 12-6-12

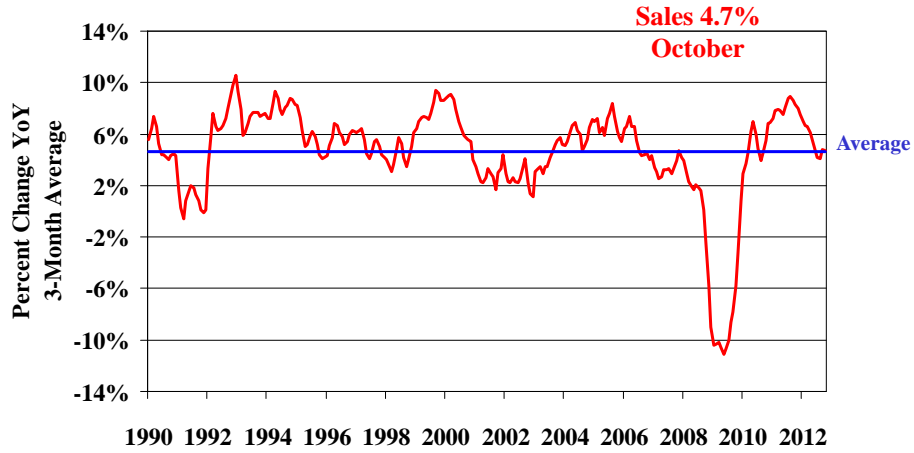
# Natural Gas Increasing Oil Prices Decreasing



Sources: Dow Jones & Company, Wall Street Journal; U.S. Department of Labor, Bureau of Labor Statistics, Federal Reserve Bank of St. Louis

IAC 12-6-12

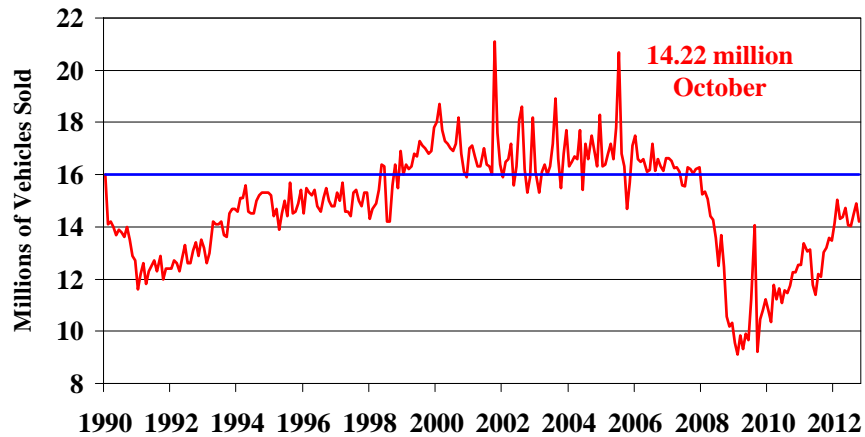
## Retail Sales Remain Weak



Source: U.S. Department of Commerce, Bureau of Economic Analysis

IAC 12-6-12

## U.S. Light Vehicle Sales Contracting

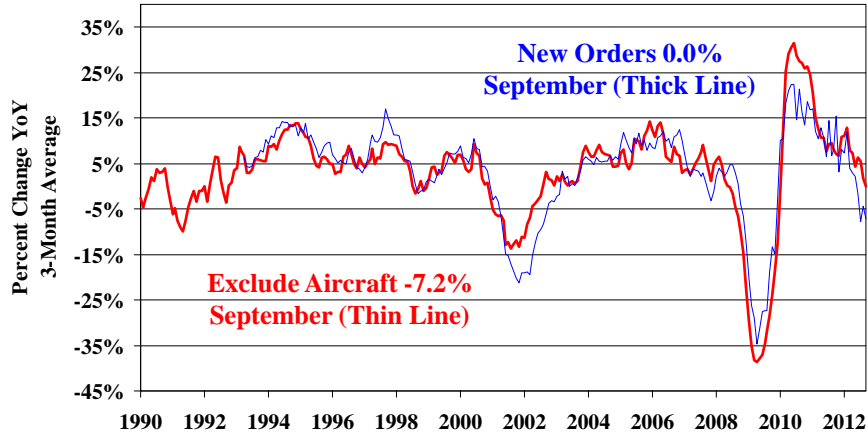


Source: U.S. Department of Commerce, Bureau of Economic Analysis, and Bloomberg

IAC 12-6-12

# Capital Spending Decreasing

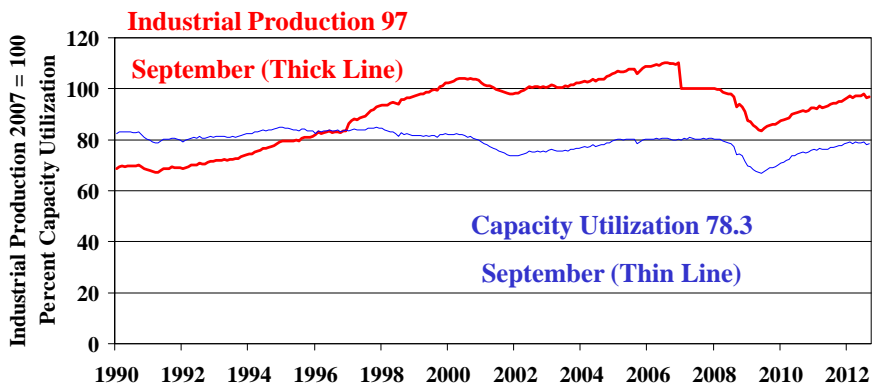
New Orders for Durable Goods (Excluding Aircraft and Defense)



Source: U.S. Department of Commerce, Bureau of Economic Analysis

IAC 12-6-12

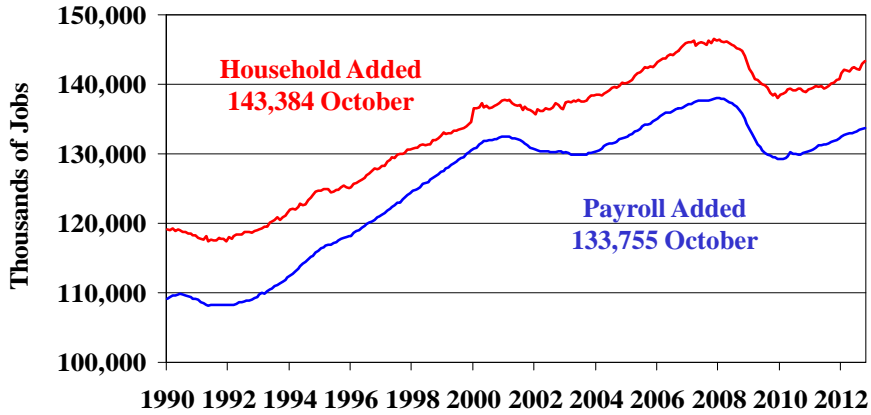
# Industrial Production and Capacity Utilization Decreasing Slightly



Source: U.S. Federal Reserve Bank

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## Modest Job Market Growth



Source: U.S. Department of Labor, Bureau of Labor Statistics

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## Initial Unemployment Claims Trending Down

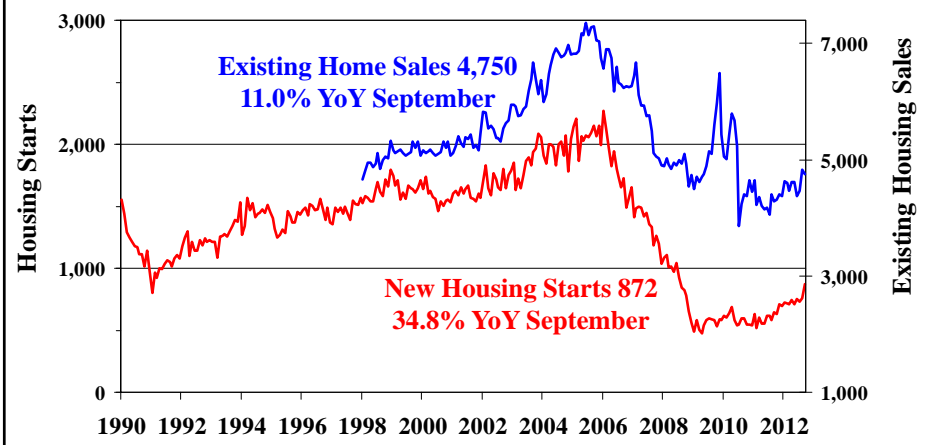


Source: U.S. Department of Labor, Employment and Training Administration

IAC 12-6-12



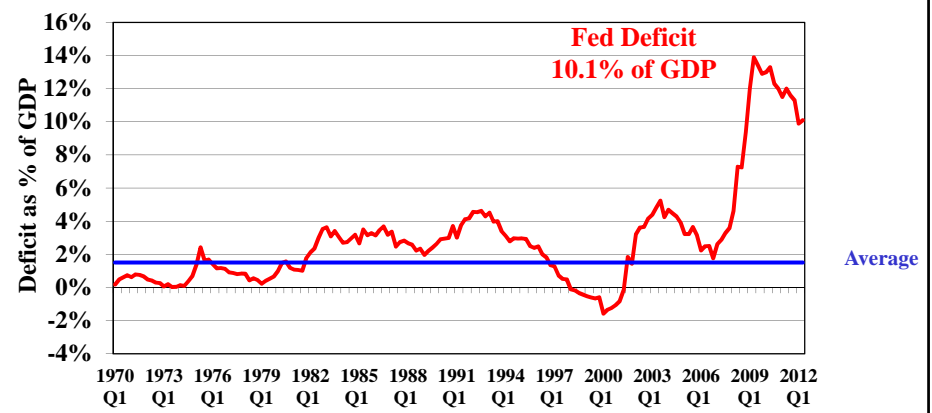
## Existing Home Sales and Housing Starts Improving



Source: U.S. Department of Commerce, Bureau of Economic Analysis  
National Association of Realtors

IAC 12-6-12

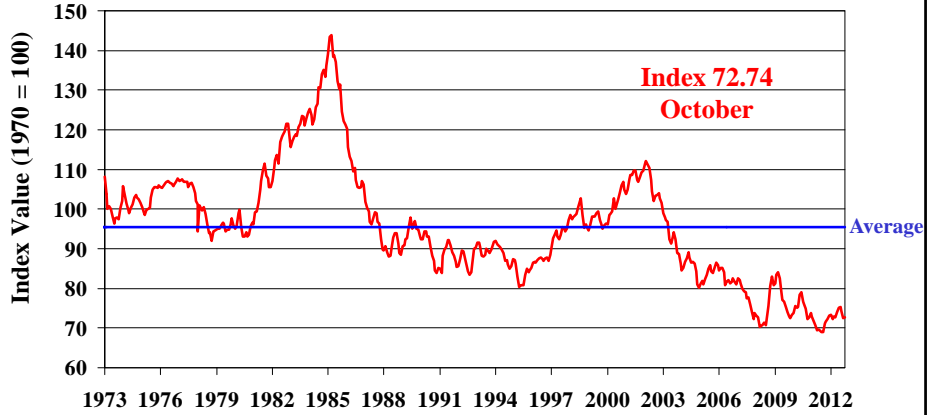
## Deficit Growing



Source: U.S. Department of Commerce, Bureau of Economic Analysis

IAC 12-6-12

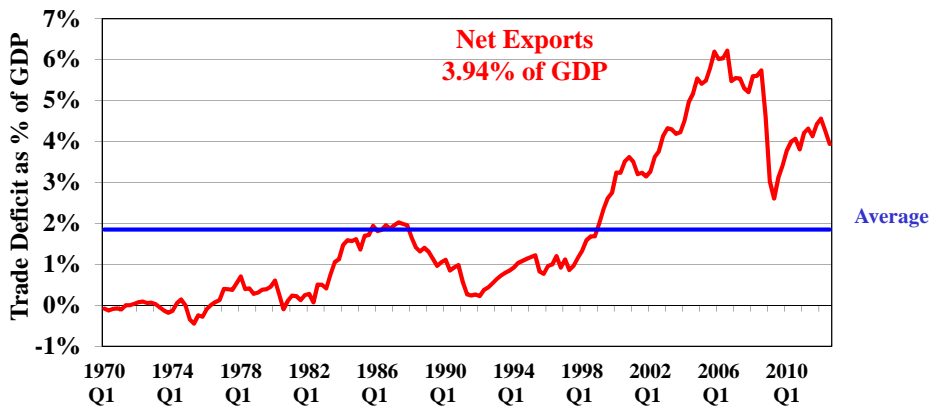
## Trade Weighted U.S. Dollar Strengthening



Source: Federal Reserve Board

IAC 12-6-12

## U.S. Foreign Trade Deficit Decreasing



Source: U.S. Department of Commerce, Bureau of Economic Analysis

IAC 12-6-12

# Consumers Remain Focused On Paying Off Debt

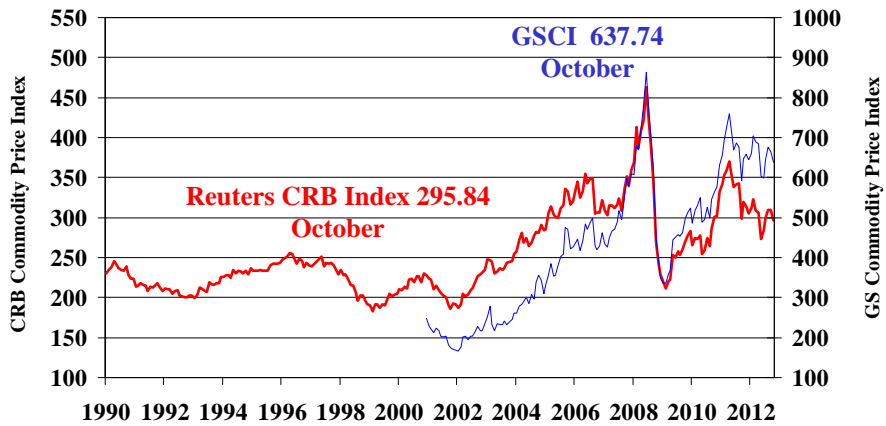
Financial Obligations as Percent of Disposable Income



Source: U.S. Department of Commerce, Bureau of Economic Analysis

IAC 12-6-12

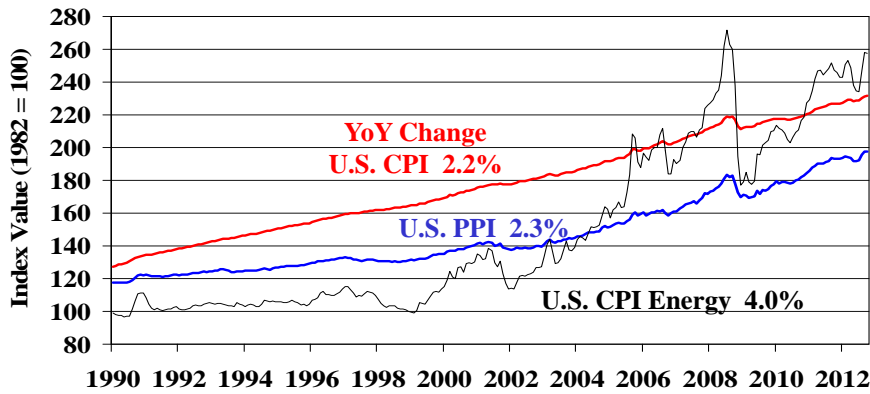
# Commodity & Energy Index Prices Decreasing



Sources: Reuters, Goldman Sachs, Bloomberg

IAC 12-6-12

## Consumer and Producer Prices Strengthening

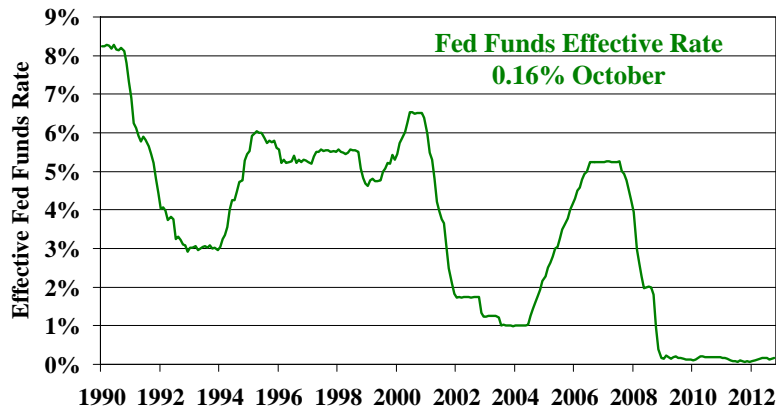


Note: Rates are year over year for latest month, seasonally adjusted.

Source: U.S. Department of Labor, Bureau of Labor Statistics

IAC 12-6-12

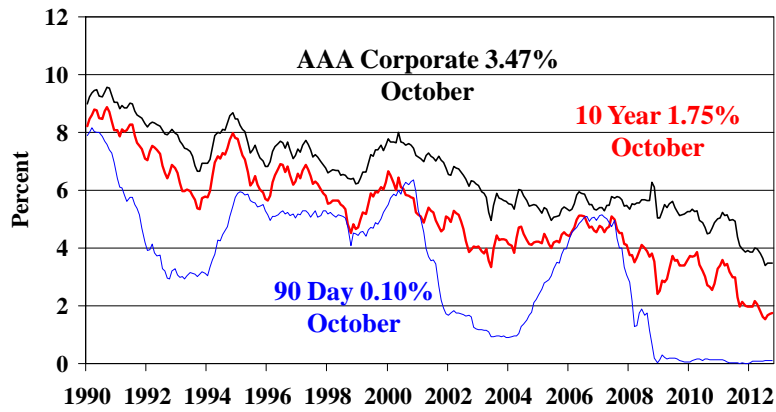
## Federal Open Market Committee Fed Funds Rate Slowly Increases



Source: Federal Reserve Board

IAC 12-6-12

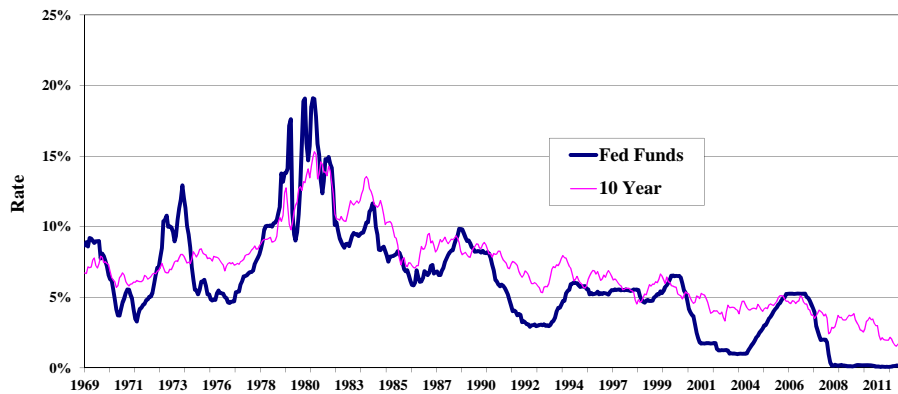
## Corporate Interest Rates Remain Low



Source: Federal Reserve Board

IAC 12-6-12

## Interest Rates Remain Historically Low



Source: Federal Reserve Board, National Bureau of Economic Research

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## U.S. Economic Forecast Comparisons

<b><u>Real GDP Growth</u></b>	<b><u>2012</u></b>	<b><u>2013</u></b>
Univ. of Michigan	2.2%	2.1%
Blue Chip	2.2%	2.0%
IHS Global Insight	2.1%	1.9%

IAC 12-6-12

## Likelihood of 2012 Economic Outlook

### **2012-2013 Forecasts**

<b><u>Scenario</u></b>	<b><u>Nov</u></b>	<b><u>Feb</u></b>	<b><u>May</u></b>	<b><u>Aug</u></b>	<b><u>Nov</u></b>
Stronger Growth	10%	10%	15%	15%	10%
Moderate Growth	75%	75%	75%	75%	75%
Slowdown	15%	15%	10%	10%	15%

IAC 12-6-12



**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**DOMESTIC EQUITY REVIEW**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**DECEMBER 6, 2012**



**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	29.5%	12.2%	1.1%	4.5%	8.1%
S&P 1500	30.2%	13.4%	1.4%	4.7%	8.3%
Rank vs. Peers	21	63	40	36	74

<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	29.5%	12.0%	0.9%
S&P 1500	30.2%	13.4%	1.4%
Morningstar Cap-Weighted Average	27.1%	10.9%	0.2%

<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	28.2%	11.2%	0.6%
S&P 1500	30.2%	13.4%	1.4%
Morningstar Cap-Weighted Average	27.1%	10.9%	0.2%

- Domestic equities delivered a .9% return net of fees during the past five years, underperforming the S&P 1500 but modestly outperforming its peer group. Similarly, Active Equities underperformed the S&P 1500, but outperformed a cap-weighted blend of Morningstar large-cap, mid-cap and small-cap average peer returns, net of fees.
- 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 basis points (bp), partially as a result of standout performance in the mid-cap space.
  - The internal large-cap active fund composite underperformed the S&P 500 by 64 bp while outperforming its Morningstar peer group by 50 bp.
  - The external large-cap manager composite underperformed the S&P 500 by 332 bp since its inception in 2009, as well as its Morningstar peer group by 72 bp during the past three years.
  - The external mid-cap manager portfolio underperformed the S&P 400 by 225 bp, while outperforming its Morningstar peer group by 64 bp.
  - The external small-cap value composite outperformed both the S&P 600 and its Morningstar peer group by 17 bp and 222 bp respectively.
- 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 \$800 million and \$3.3 billion during the past quarter and twelve months respectively.
- Domestic equity's external manager portfolio underwent a significant restructuring in the third quarter, with the number of funds in the portfolio dropping from 24 to 16. This will better enable SMRS to both focus its time and resources on high conviction managers and to extract better terms. Terminations were made not based on historical performance, but rather on assessments of manager skill, staff analysis of manager's existing stock holdings and portfolio diversification considerations.
- As a result of SMRS' external manager restructuring, as of October 31, 2012, the portfolio has tilted more towards the large-cap space than previously, with 93% of portfolio exposure now primarily large-cap and 7% of portfolio exposure primarily mid-cap. SMRS does still have ~\$400M invested with small-cap managers, but has hedged away the resulting small-cap exposure.
- Domestic equity remains overweight the financials and healthcare sectors by 160 bp and 190 bp respectively. The healthcare sector provides stability and a yield substitute for bond 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 internal active equity portfolio is trading at 12.7X normalized earnings versus the S&P 500 at 14.5X normalized earnings, with less exposure to market volatility and better growth prospects going forward. If the internal portfolio's normalized PE converges with the S&P 500, this would imply outperformance of 14% versus the benchmark.

## **Market Environment and Outlook**

- Despite significant risks to the economic environment, equity markets continue to look reasonably priced, with the S&P 500 poised to return an estimated 9.6% over the long-term. This compares to 30-year Treasuries at 2.8% and a historical average return of 9.2%. Active equity's S&P 500 forecast assumptions are composed of a 4.6% normalized dividend yield (including stock buybacks) and 5.0% long-term expected earnings growth.
- Within equities, large-cap stocks look attractive relative to small and mid-cap, particularly on a risk adjusted basis. The trailing twelve-month PE for the S&P 500 is 14X versus the S&P 600 at 21X, while the trailing twelve-month dividend yield for S&P 500 (including buybacks) is 4.0% versus the S&P 600 at 1.9%. In addition, S&P 500 companies are less exposed to second-order effects from a systemic shock than are S&P 600 companies.
- Certain defensive sectors such as healthcare and consumer staples remain valuable in today's volatile, 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 a similar long-term expected return as the S&P 500, but less downside risk.
- 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 value stock tilt.

### Five-Year Performance by Style and Market Cap

	<u>Value</u>	<u>Core</u>	<u>Growth</u>
S&P 500 Large-Cap	-1.6%	1.1%	3.6%
S&P 400 Mid-Cap	2.5%	3.8%	5.2%
S&P 600 Small-Cap	2.6%	3.3%	4.0%

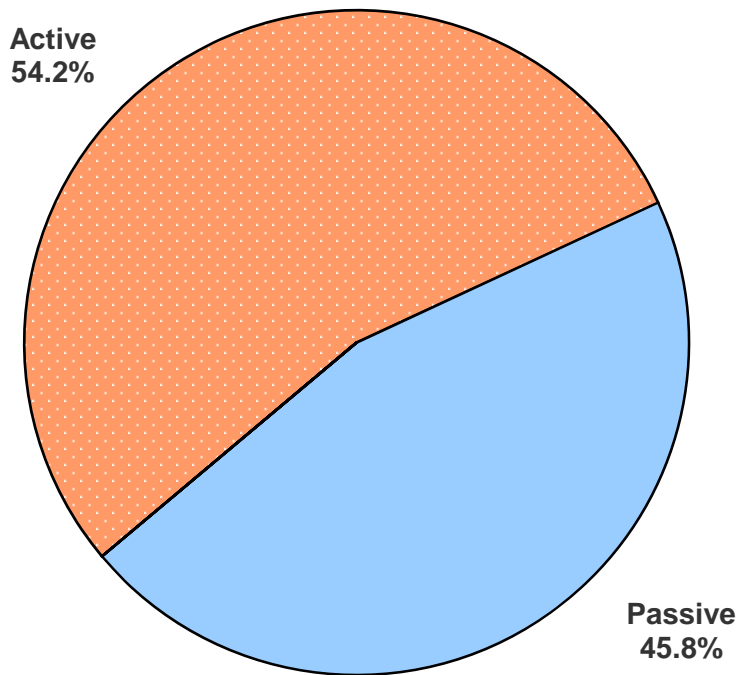
### Philosophy

- 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 give too much weight to historical three and five-year performance for the purpose of making hiring, firing or allocation decisions. According to research by RV Kuhns and Associates, 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 the 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. A long-term focus is essential for long-term outperformance.



# SMRS

## Domestic Equity Holdings By Category 9/30/12

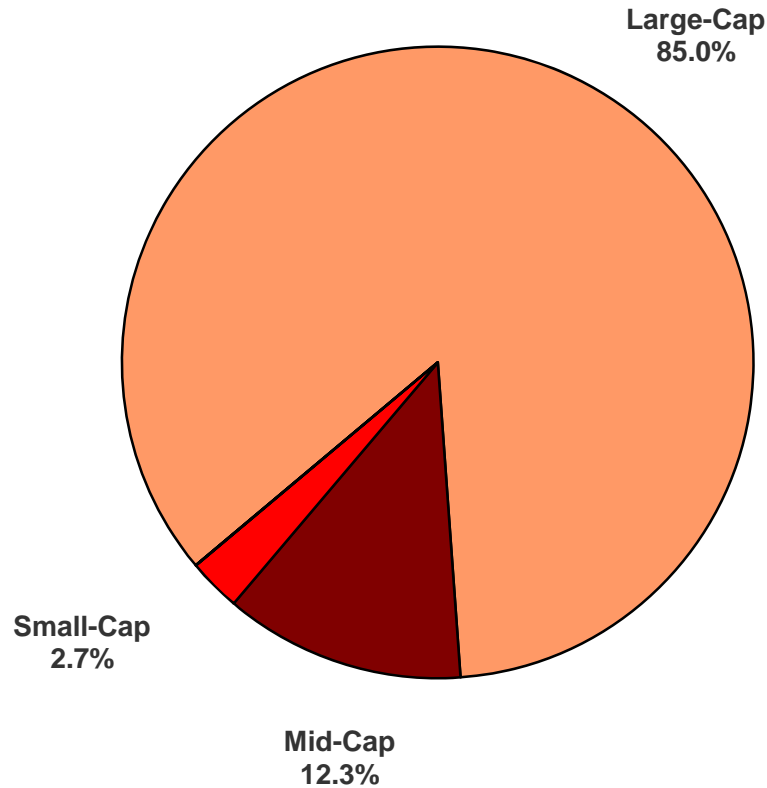


<b>Market Value in Millions</b>				
	<u>9/30/2012</u>		<u>6/30/2012</u>	
Active	\$7,562	54.2%	\$7,384	53.3%
Passive	6,397	45.8%	6,464	46.7%
<b>Total Domestic Equity</b>	<b>\$13,959</b>	<b>100.0%</b>	<b>\$13,848</b>	<b>100.0%</b>



# SMRS

## Domestic Equity Holdings By Market Cap 9/30/12

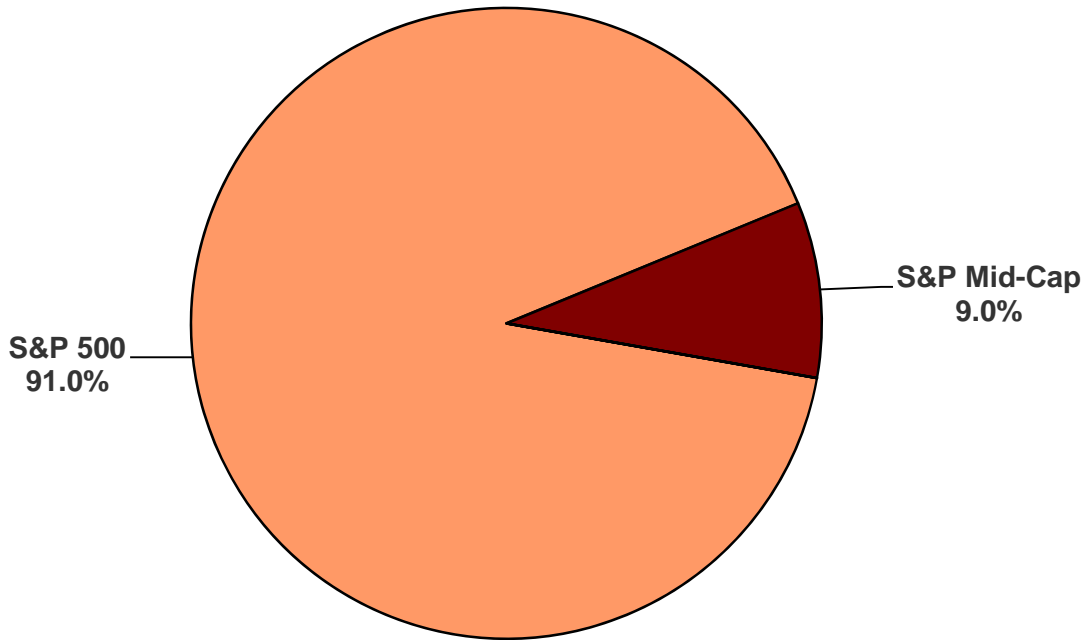


<b>Market Value in Millions</b>			
	<u>9/30/2012</u>		<u>S&amp;P 1500</u>
Large-Cap (>\$7B)	\$11,860	85.0%	85.4%
Mid-Cap (>\$2 <\$7B)	1,721	12.3%	10.4%
Small-Cap (<\$2B)	378	2.7%	4.2%
<b>Total Domestic Equity</b>	<b>\$13,959</b>	<b>100.0%</b>	<b>100.0%</b>



# SMRS

## Domestic Passive Equity Investments 9/30/12



<b>Market Value in Millions</b>			
	<u>9/30/2012</u>		<u>Benchmark</u>
S&P 500	\$5,820	91.0%	91.7%
S&P Mid-Cap	577	9.0%	8.3%
<b>Total</b>	<b>\$6,397</b>	<b>100.0%</b>	<b>100.0%</b>

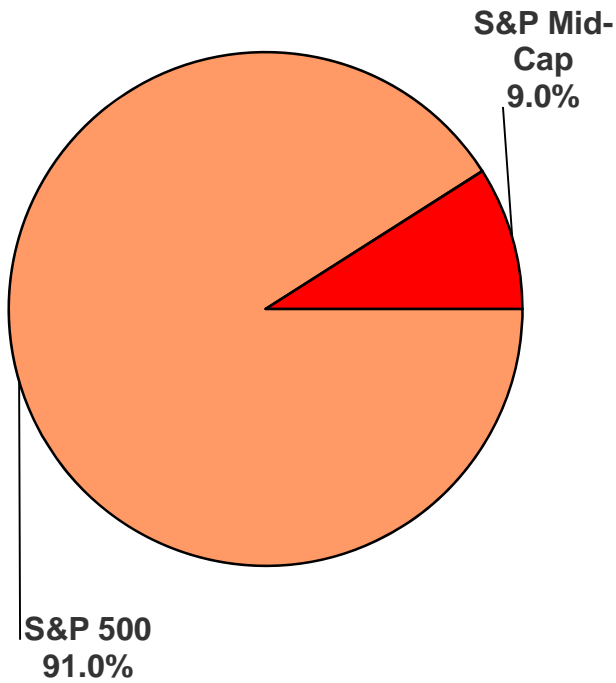


# SMRS

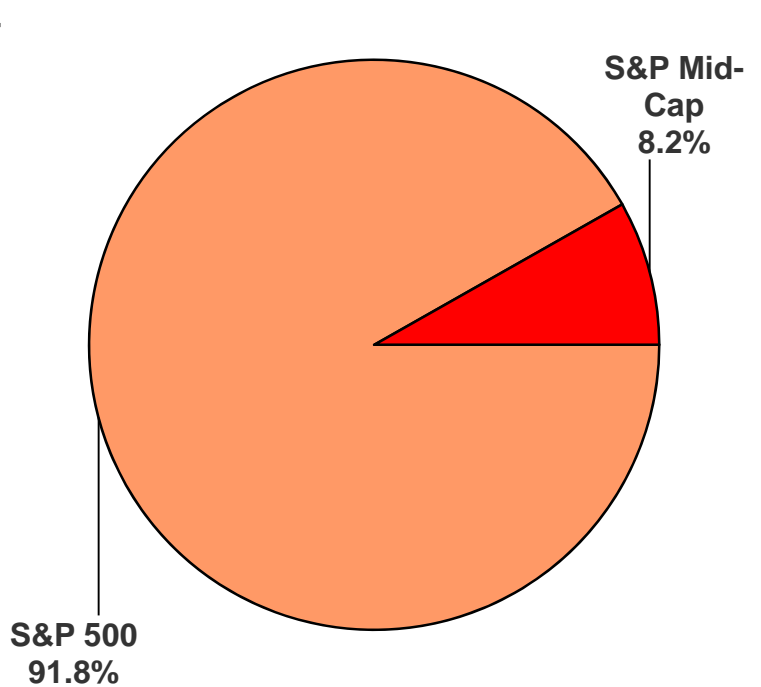
## Passive U.S. Equity Holdings

### 9/30/12

**SMRS Actual**



**Standard & Poor's 900**



<b>Market Value in Millions</b>					
	<u>9/30/2012</u>			<u>6/30/2012</u>	
	<u>Assets</u>	<u>Percent</u>	<u>Benchmark</u>	<u>Assets</u>	<u>Percent</u>
S&P 500	\$5,820	91.0%	91.8%	\$5,859	90.6%
S&P Mid-Cap	577	9.0%	8.2%	606	9.4%
<b>Total</b>	<b>\$6,397</b>	<b>100.0%</b>	<b>100.0%</b>	<b>\$6,465</b>	<b>100.0%</b>

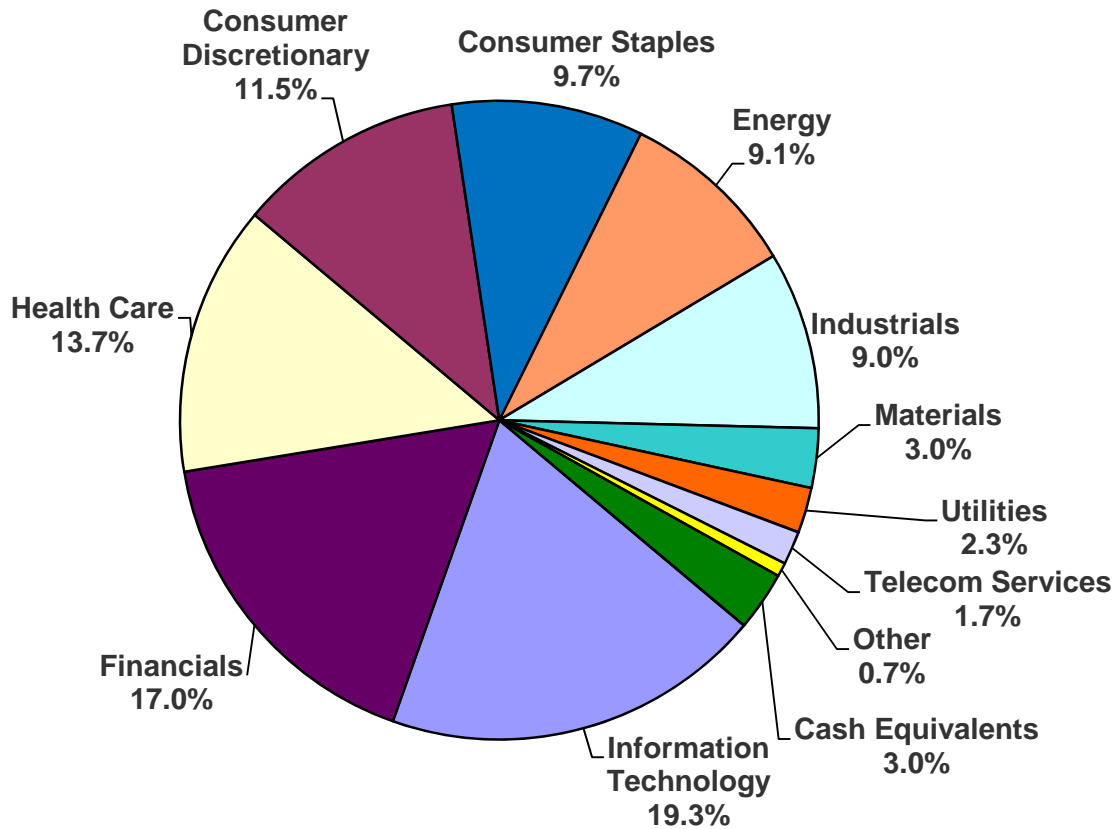




# SMRS

## All Domestic Equity Holdings By Category

### 9/30/12



	<b>Market Value in Millions</b>					
	<u>9/30/2012</u>			<u>6/30/2012</u>		
	<u>Assets</u>	<u>Percent</u>	<u>Benchmark</u>	<u>Assets</u>	<u>Percent</u>	
Information Technology	\$2,688	19.3%	19.7%	\$2,552	18.4%	
Financials	2,376	17.0%	15.4%	2,280	16.5%	
Health Care	1,906	13.7%	11.8%	1,867	13.5%	
Consumer Discretionary	1,605	11.5%	11.4%	1,634	11.8%	
Consumer Staples	1,354	9.7%	10.0%	1,371	9.9%	
Energy	1,266	9.1%	10.6%	1,235	8.9%	
Industrials	1,259	9.0%	10.5%	1,317	9.5%	
Materials	423	3.0%	3.9%	416	3.0%	
Utilities	325	2.3%	3.7%	346	2.5%	
Telecom Services	237	1.7%	3.0%	236	1.7%	
Other	95	0.7%	0.0%	455	3.3%	
<b>Total Investments</b>	<b>\$13,534</b>	<b>97.0%</b>	<b>100.0%</b>	<b>\$13,709</b>	<b>99.0%</b>	
Cash Equivalents	425	3.0%	0.0%	140	1.0%	
<b>Total</b>	<b>\$13,959</b>	<b>100.0%</b>	<b>100.0%</b>	<b>\$13,849</b>	<b>100.0%</b>	



# SMRS

## All Domestic Equities Composite 9/30/12

<b>Date:</b>	<u>9/30/12</u>	<u>6/30/12</u>	<u>3/31/12</u>	<u>12/31/11</u>
Assets (\$million):	\$13,959	\$13,849	\$14,435	\$14,583
Number of Securities:	1,534	1,617	1,388	1,399

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):	\$100.2	\$107.9
Trailing 12-month P/E:	14.9x	15.4x
Forecast P/E:	13.5x	14.1x
Price/Book:	1.8x	2.1x
Beta:	0.99	1.00
Dividend Yield:	2.0%	2.1%
3-5 Year EPS Growth Estimate:	11.2%	10.7%
Return on Equity:	19.0%	18.9%

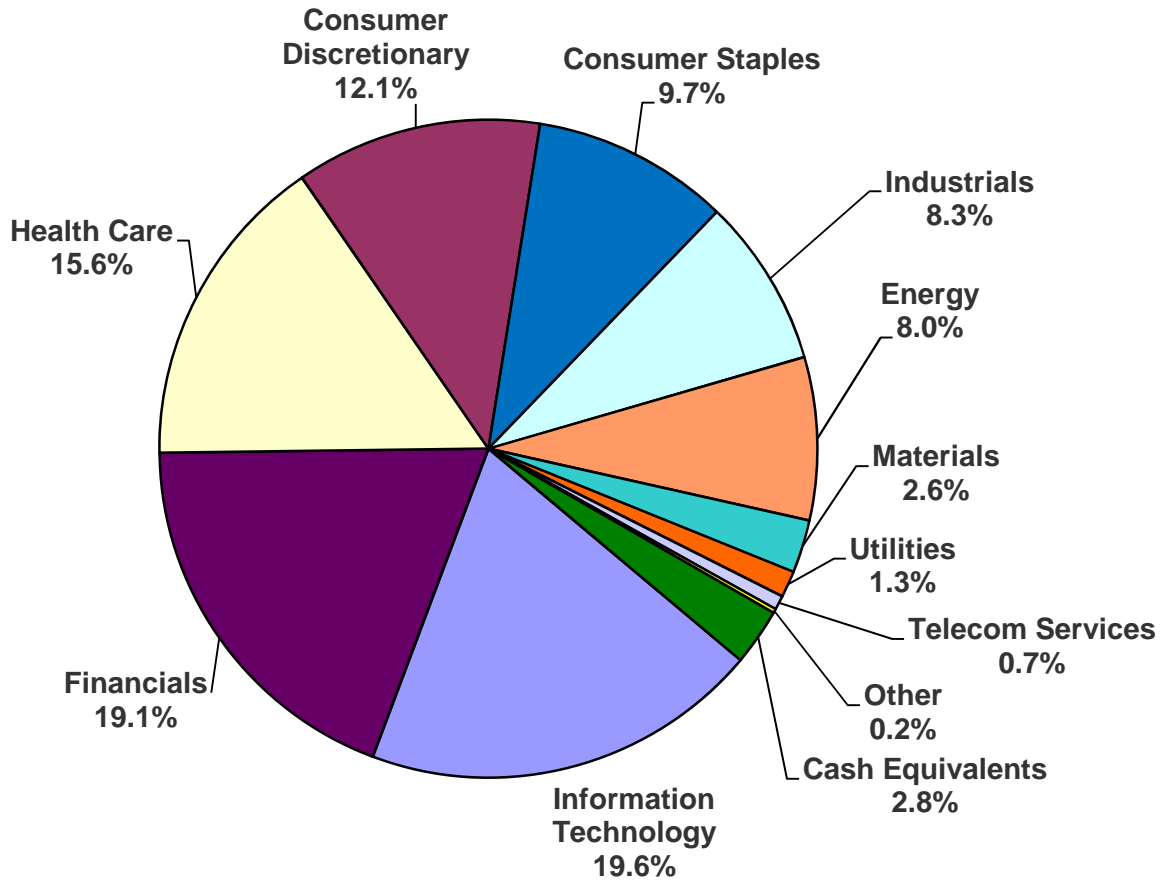
### TOP TEN HOLDINGS - All Domestic Equities 9/30/12

	<u>Portfolio Weight</u>	<u>Total Shares</u>	<u>Price</u>	<u>YTD12 Total Return</u>	<u>Market Value</u>
Apple Inc.	4.38%	916,564	\$667.11	65.42%	\$611,444,427
Google Inc. Cl A	1.97%	363,716	\$754.50	16.81%	274,423,722
SPDR S&P 500 ETF	1.79%	1,738,050	\$143.97	16.43%	250,227,059
Johnson & Johnson	1.66%	3,371,609	\$68.91	8.00%	232,337,576
Exxon Mobil Corp.	1.63%	2,482,398	\$91.45	9.94%	227,015,297
Microsoft Corp.	1.34%	6,275,265	\$29.76	16.93%	186,751,886
Abbott Laboratories	1.33%	2,699,882	\$68.56	25.01%	185,103,910
Merck & Co. Inc.	1.30%	4,039,170	\$45.10	23.40%	182,146,371
Chevron Corp.	1.27%	1,518,149	\$116.56	12.28%	176,955,447
Procter & Gamble Co.	<u>1.23%</u>	2,476,049	\$69.36	6.60%	<u>171,738,759</u>
<b>TOTAL</b>	<u>17.90%</u>				<u>\$2,498,144,454</u>



# SMRS

## All Active Domestic Equity Holdings By Category 9/30/12



### Market Value in Millions

	9/30/2012			6/30/2012	
	Assets	Percent	Benchmark	Assets	Percent
Information Technology	\$1,484	19.6%	19.7%	\$1,351	18.3%
Financials	1,443	19.1%	15.4%	1,341	18.2%
Health Care	1,183	15.6%	11.8%	1,130	15.3%
Consumer Discretionary	915	12.1%	11.4%	940	12.7%
Consumer Staples	733	9.7%	10.0%	708	9.6%
Industrials	625	8.3%	10.5%	634	8.6%
Energy	605	8.0%	10.6%	595	8.1%
Materials	197	2.6%	3.9%	184	2.5%
Utilities	100	1.3%	3.7%	106	1.4%
Telecom Services	51	0.7%	3.0%	52	0.7%
Other	14	0.2%	0.0%	232	3.1%
Total Investments	\$7,350	97.2%	100.0%	\$7,273	98.5%
Cash Equivalents	212	2.8%	0.0%	111	1.5%
<b>Total</b>	<b>\$7,562</b>	<b>100.0%</b>	<b>100.0%</b>	<b>\$7,384</b>	<b>100.0%</b>



# SMRS

## All Actively Managed Composite

### 9/30/12

Date:	<u>9/30/12</u>	<u>6/30/12</u>	<u>3/31/12</u>	<u>12/31/11</u>
Assets (\$million):	\$7,562	\$7,384	\$7,769	\$8,660
Number of Securities:	1,422	1,484	1,069	1,052
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>	<b><u>SMRS</u></b>	<b><u>S&amp;P 1500</u></b>
Weighted Average Capitalization (\$billion):	\$90.4	\$107.9
Trailing 12-month P/E:	14.5x	15.4x
Forecast P/E:	13.1x	14.1x
Price/Book:	1.6x	2.1x
Beta:	1.00	1.00
Dividend Yield:	1.9%	2.1%
3-5 Year EPS Growth Estimate:	11.8%	10.7%
Return on Equity:	18.9%	18.9%

### TOP TEN HOLDINGS - All Actively Managed

9/30/12

	<b><u>Portfolio Weight</u></b>	<b><u>Total Shares</u></b>	<b><u>Price</u></b>	<b><u>YTD12 Total Return</u></b>	<b><u>Market Value</u></b>
Apple Inc.	4.51%	511,767	\$667.11	65.42%	\$341,402,325
Google Inc. Cl A	2.49%	249,312	\$754.50	16.81%	188,105,904
Johnson & Johnson	1.99%	2,181,063	\$68.91	8.00%	150,297,051
Abbott Laboratories	1.83%	2,022,157	\$68.56	25.01%	138,639,084
Merck & Co Inc	1.62%	2,724,031	\$45.10	23.40%	122,840,178
PepsiCo Inc.	1.44%	1,538,604	\$70.77	9.20%	108,887,005
Goldman Sachs Group Inc.	1.34%	894,015	\$113.68	27.23%	101,631,625
Microsoft Corp.	1.19%	3,017,134	\$29.76	16.93%	89,789,908
Procter & Gamble Co.	1.18%	1,286,645	\$69.36	6.60%	89,241,697
General Mills Inc.	<u>1.16%</u>	2,194,240	\$39.85	0.99%	<u>87,440,464</u>
TOTAL	<u>18.76%</u>				<u>\$1,418,275,241</u>

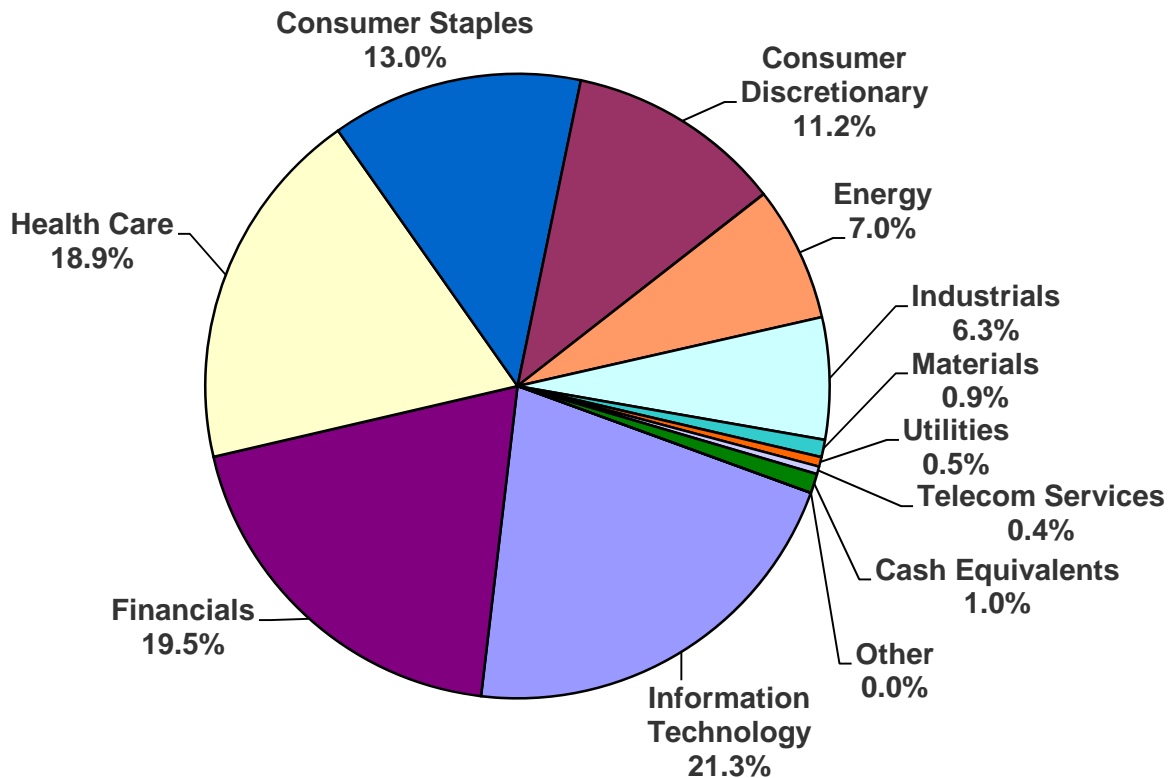


# SMRS

## Domestic Active Equity - Large-Cap

### All Internal Domestic Equity Holdings By Category

9/30/12



#### Market Value in Millions

	9/30/2012			6/30/2012	
	Assets	Percent	Benchmark	Assets	Percent
Information Technology	\$853	21.3%	20.1%	\$803	19.9%
Financials	780	19.5%	14.6%	720	17.9%
Health Care	756	18.9%	12.0%	766	19.0%
Consumer Staples	519	13.0%	10.9%	527	13.1%
Consumer Discretionary	449	11.2%	11.0%	532	13.2%
Energy	280	7.0%	11.3%	298	7.4%
Industrials	253	6.3%	9.8%	268	6.7%
Materials	37	0.9%	3.5%	42	1.0%
Utilities	20	0.5%	3.5%	25	0.6%
Telecom Services	15	0.4%	3.3%	19	0.5%
Other	1	0.0%	0.0%	7	0.2%
Total Investments	\$3,963	99.0%	100.0%	\$4,007	99.5%
Cash Equivalents	39	1.0%	0.0%	18	0.5%
<b>Total</b>	<b>\$4,002</b>	<b>100.0%</b>	<b>100.0%</b>	<b>\$4,025</b>	<b>100.0%</b>



# SMRS

## Large-Cap Internal Active Composite

### 9/30/12

<b>Date:</b>	<u>9/30/12</u>	<u>6/30/12</u>	<u>3/31/12</u>	<u>12/31/11</u>
Assets (\$million):	\$4,002	\$4,025	\$4,129	\$4,569
Number of Securities:	159	162	157	92
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):	\$124.6	\$121.5
Trailing 12-month P/E:	15.1x	15.1x
Forecast P/E:	13.1x	13.8x
Price/Book:	2.0x	2.1x
Beta:	0.96	0.99
Dividend Yield:	2.0%	2.2%
3-5 Year EPS Growth Estimate:	11.6%	10.5%
Return on Equity:	21.9%	19.7%

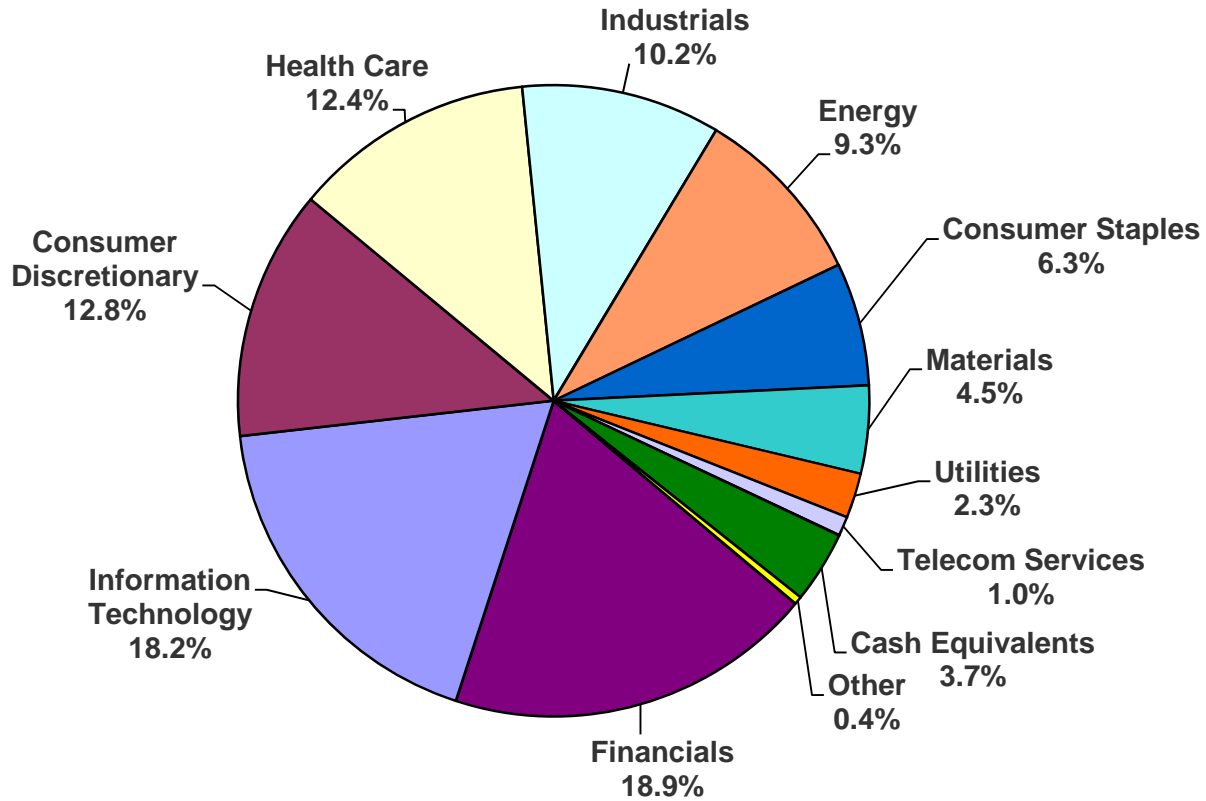
### TOP TEN HOLDINGS - Large-Cap Internal Active 9/30/12

	<u>Portfolio Weight</u>	<u>Total Shares</u>	<u>Price</u>	<u>YTD12 Total Return</u>	<u>Market Value</u>
Apple Inc.	7.10%	426,106	\$667.11	65.42%	\$284,257,443
Google Inc. Cl A	3.94%	209,049	\$754.50	16.81%	157,727,471
Johnson & Johnson	3.45%	2,002,239	\$68.91	8.00%	137,974,289
Abbott Laboratories	2.87%	1,673,570	\$68.56	25.01%	114,739,959
Merck & Co. Inc.	2.56%	2,274,923	\$45.10	23.40%	102,587,653
PepsiCo Inc.	2.42%	1,370,815	\$70.77	9.20%	97,012,578
Goldman Sachs Group Inc.	2.29%	804,429	\$113.68	27.23%	91,447,489
Kellogg Co.	2.12%	1,644,308	\$51.66	4.80%	84,944,951
Charles Schwab Corp.	2.08%	6,511,992	\$12.79	15.14%	83,255,818
General Mills Inc.	<u>2.07%</u>	2,075,215	\$39.85	0.99%	<u>82,697,318</u>
<b>TOTAL</b>	<u>30.90%</u>	13			<u>\$1,236,644,968</u>



# SMRS

## Domestic Active Equity - Large-Cap All External Domestic Equity Holdings By Category 9/30/12



	Market Value in Millions					
	9/30/2012			6/30/2012		
	Assets	Percent	Benchmark	Assets	Percent	
Financials	\$673	18.9%	15.4%	\$627	18.7%	
Information Technology	648	18.2%	19.7%	560	16.7%	
Consumer Discretionary	457	12.8%	11.4%	399	11.9%	
Health Care	441	12.4%	11.8%	375	11.2%	
Industrials	364	10.2%	10.5%	361	10.7%	
Energy	330	9.3%	10.6%	301	9.0%	
Consumer Staples	224	6.3%	10.0%	189	5.6%	
Materials	160	4.5%	3.9%	142	4.2%	
Utilities	81	2.3%	3.7%	81	2.4%	
Telecom Services	36	1.0%	3.0%	33	1.0%	
Other	16	0.4%	0.0%	186	5.5%	
Total Investments	\$3,430	96.3%	100.0%	\$3,254	96.9%	
Cash Equivalents	130	3.7%	0.0%	105	3.1%	
<b>Total</b>	<b>\$3,560</b>	<b>100.0%</b>	<b>100.0%</b>	<b>\$3,359</b>	<b>100.0%</b>	



# SMRS

## All-Cap External Active

### 9/30/12

<b>Date:</b>	<u>9/30/12</u>	<u>6/30/12</u>
Assets (\$million):	\$3,560	\$3,359
Number of Securities:	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):	\$53.8	\$107.9
Trailing 12-month P/E:	14.2x	15.4x
Forecast P/E:	13.1x	14.1x
Price/Book:	1.3x	2.1x
Beta:	1.07	1.00
Dividend Yield:	1.7%	2.1%
3-5 Year EPS Growth Estimate:	12.0%	10.7%
Return on Equity:	15.7%	18.9%

### TOP TEN HOLDINGS - All-Cap External Active 9/30/12

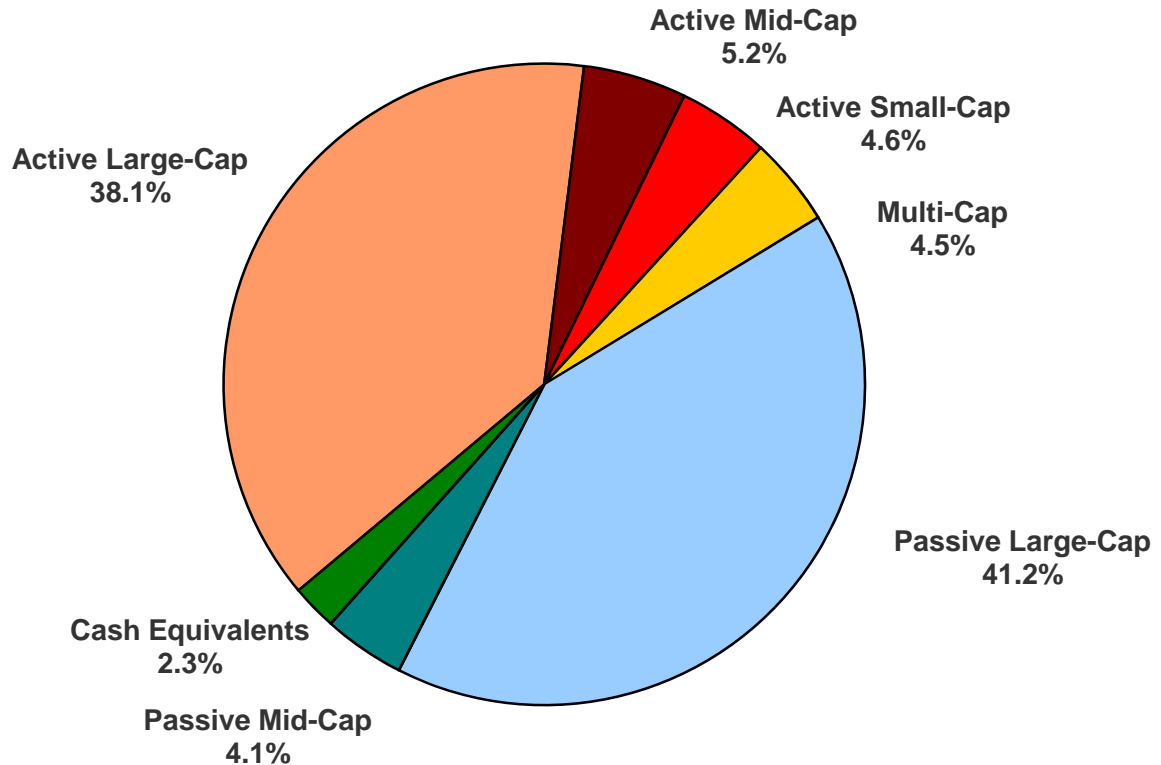
	<u>Portfolio Weight</u>	<u>Total Shares</u>	<u>Price</u>	<u>YTD12 Total Return</u>	<u>Market Value</u>
Apple Inc.	1.61%	85,661	\$667.11	65.42%	\$57,144,881
Pfizer Inc.	1.13%	1,621,591	\$24.85	18.23%	40,296,536
Microsoft Corp.	1.11%	1,330,034	\$29.76	16.93%	39,581,812
Exxon Mobil Corp.	1.07%	415,962	\$91.45	9.94%	38,039,725
JPMorgan Chase & Co.	1.02%	894,652	\$40.48	24.46%	36,215,513
Google Inc. Cl A	0.85%	40,263	\$754.50	16.81%	30,378,434
Cisco Systems Inc.	0.80%	1,486,803	\$19.10	6.86%	28,390,503
Visa Inc.	0.77%	203,043	\$134.28	32.98%	27,264,614
Wells Fargo & Co.	0.76%	783,459	\$34.53	27.82%	27,052,839
Chevron Corp.	<u>0.72%</u>	219,108	\$116.56	12.28%	<u>25,539,228</u>
<b>TOTAL</b>	<u><b>9.83%</b></u>				<u><b>\$349,904,086</b></u>





# SMRS

## Domestic Equity Holdings By Category 9/30/12



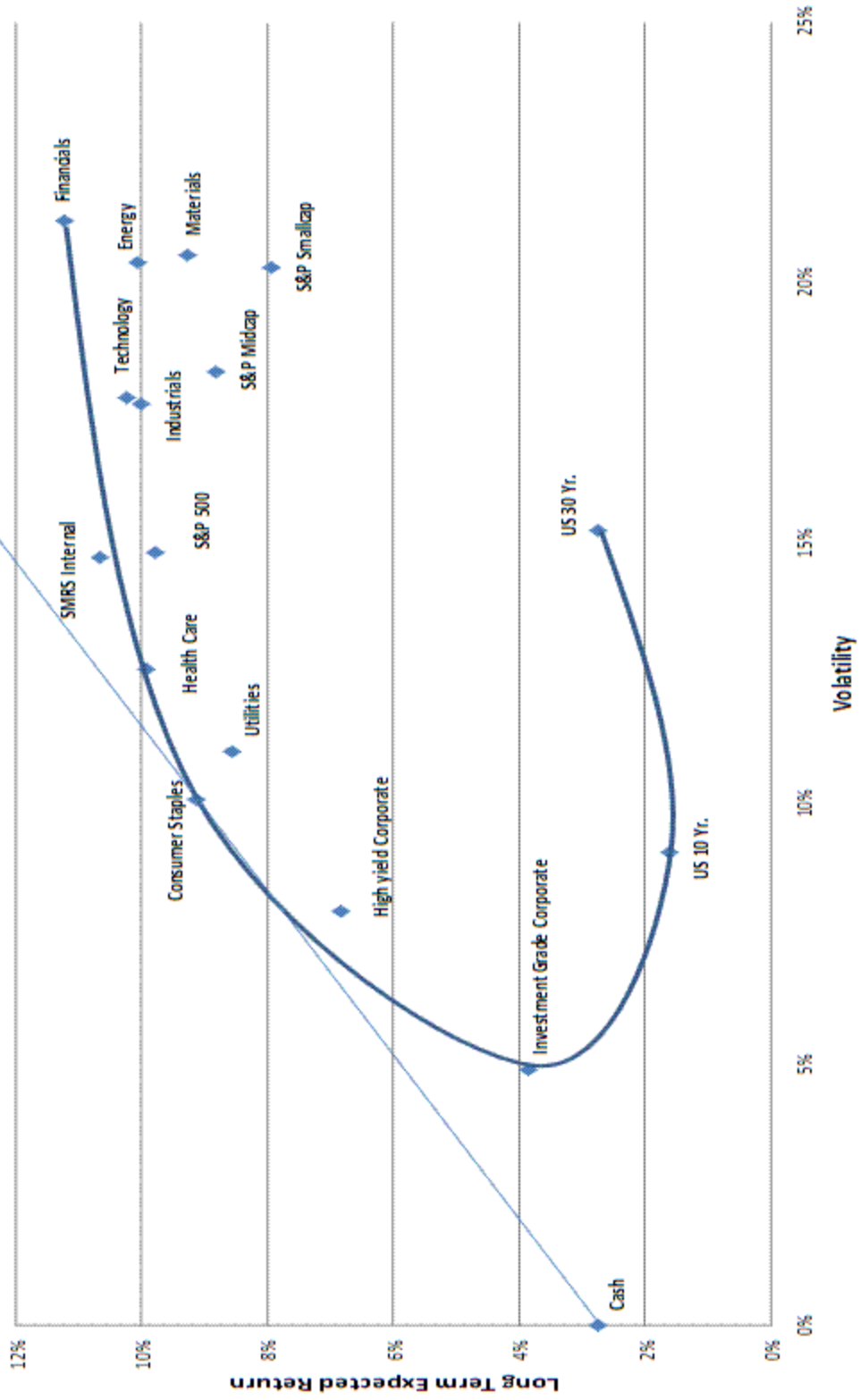
<b>Market Value in Millions</b>				
	<u>9/30/2012</u>		<u>6/30/2012</u>	
<b>Active</b>				
Large-Cap	\$5,314	38.1%	\$5,266	38.0%
Mid-Cap	728	5.2%	693	5.0%
Small-Cap	638	4.6%	610	4.4%
Multi-Cap	629	4.5%	589	4.3%
<b>Total Active Equity</b>	<b>\$7,309</b>	<b>52.4%</b>	<b>\$7,158</b>	<b>51.7%</b>
<b>Passive</b>				
Large-Cap	\$5,750	41.2%	\$5,832	42.1%
Mid-Cap	576	4.1%	604	4.4%
<b>Total Passive Equity</b>	<b>\$6,326</b>	<b>45.3%</b>	<b>\$6,436</b>	<b>46.5%</b>
<b>Total Investments</b>	<b>\$13,635</b>	<b>97.7%</b>	<b>\$13,594</b>	<b>98.2%</b>
Cash Equivalents	324	2.3%	254	1.8%
<b>Total Domestic Equity</b>	<b>\$13,959</b>	<b>100.0%</b>	<b>\$13,848</b>	<b>100.0%</b>



# SMRS Domestic Equities 9/30/12

	INDEX	CORE (in thousands)	CONCENTRATED HIGH ALPHA	TOTAL	%	S&P 1500
<b>Large-Cap</b>						
Index S&P 500	\$5,820,236			\$5,820,236		
Large-Cap Core			\$1,631,885	1,631,885		
Large-Cap Growth			1,163,158	1,163,158		
Large-Cap Value			778,610	778,610		
All-Cap GARP			130,955	130,955		
Edgewood Large-Cap Growth			268,434	268,434		
JP Morgan Large-Cap Growth			193,325	193,325		
LSV Large-Cap Value			584,688	584,688		
Wasatch Advisors Large-Cap Value			204,825	204,825		
Epoch Large-Cap Value			207,970	207,970		
Diamond Hill Large-Cap Value			234,148	234,148		
Absolute Return Income Fund			188,556	188,556		
Tactical Asset Allocation			108,438	108,438		
<b>Total</b>				\$11,515,228	86.9%	88.4%
<b>Mid-Cap</b>						
S&P 400 Index	\$576,729			\$576,729		
Champlain Mid-Cap Core		\$78,511	99,688	78,511		
Cramer Rosenthal McGlynn Mid-Cap Value				99,688		
Los Angeles Capital Mid-Cap Plus Core		72,482		72,482		
Munder Mid-Cap Core		68,693		68,693		
Rainier Mid-Cap Growth		104,421		104,421		
Wellington Management Mid-Cap Growth			89,760	89,760		
<b>Total</b>				\$1,090,284	8.2%	7.8%
<b>Small-Cap</b>						
Champlain Small-Cap Core			\$55,329	55,329		
Donald Smith Small-Cap Value			161,565	161,565		
Fisher Small-Cap Value		\$213,944		213,944		
GW Capital Small-Cap Value			48,153	48,153		
Northpointe Small-Cap Value			57,890	57,890		
Opus Small-Cap Value			35,354	35,354		
Pier Small-Cap Growth			66,100	66,100		
<b>Total</b>				\$638,335	4.8%	3.8%
<b>All-Cap Managers</b>						
Attucks Asset Management		\$164,178	\$214,694	164,178		
Artisan All-Cap Value				214,694		
Bivium		150,406		150,406		
Leading Edge Investment Advisors		52,099		52,099		
Seizert Capital partners All-Cap Core			133,381	133,381		
<b>Total</b>				\$714,758		
<b>TOTAL</b>		<b>\$6,396,965</b>	<b>\$6,308,831</b>	<b>\$13,958,605</b>		

## Selected Return & Volatility Estimates



## Internal Active Portfolio, Equity Return Expectations 9/30/12

### Return Assumption Estimates

	<u>Yield to Maturity****</u>	<u>Normal Dividend Yield***</u>	<u>LT Growth Rate***</u>
<i>SAD Internal Active Equity</i>	10.2%	5.1%	5.1%
S&P 500 Large-Cap	9.6%	4.6%	5.0%
S&P 400 Mid-Cap	8.7%	3.5%	5.2%
S&P 600 Small-Cap	7.8%	2.4%	5.4%
U.S. 30-Year Treasury	2.8%	2.8%	0.0%

### Trailing 12-Month and Normalized Earnings Characteristics

	<u>TTM Price/Earnings</u>	<u>TTM Dividend Yield</u>	<u>Normal Price/Earnings</u>
<i>SAD Internal Active Equity</i>	14.7	3.6%	12.7
S&P 500 Large-Cap	14.4	4.0%	14.5
S&P 400 Mid-Cap	17.6	2.5%	16.2
S&P 600 Small-Cap	20.8	1.9%	18.4

### Normalized Earnings & Dividend Characteristics

	<u>Normal Earnings Yield*</u>	<u>Normal Payout Ratio</u>	<u>Normal Dividend Yield**</u>
<i>SAD Internal Active Equity</i>	7.9%	65%	5.1%
S&P 500 Large-Cap	6.9%	66%	4.6%
S&P 400 Mid-Cap	6.2%	56%	3.5%
S&P 600 Small-Cap	5.4%	45%	2.4%

### Portfolio and Benchmark Risk Estimates

	<u>Yield to Maturity****</u>	<u>Portfolio Standard Deviation</u>	<u>Yield/Volatility</u>
<i>SAD Internal Active Equity</i>	10.2%	14.90%	0.69
S&P 500 Large-Cap	9.6%	15.51%	0.62
S&P 400 Mid-Cap	8.7%	19.08%	0.46
S&P 600 Small-Cap	7.8%	21.14%	0.37
U.S. 30-Year Treasury	2.8%	15.64%	0.18

\*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

## Large-Cap Manager Performance, Net of Fees

	<u>Market Value</u>	<u>1 Year</u>	<u>3 Years</u>	<u>5 Years</u>	<u>Inception</u>	<u>Inception Date</u>
<b>Active Equity Large-Cap Composite</b>	<b>\$5,268,210</b>	<b>27.5%</b>	<b>10.8%</b>	<b>0.2%</b>	<b>N/A</b>	
S&P 500		30.2%	13.2%	1.1%	N/A	
Morningstar Large Blend		27.1%	10.7%	-0.1%		
<b>Internal Large-Cap Active</b>	<b>\$3,574,806</b>	<b>27.6%</b>	<b>11.1%</b>	<b>0.4%</b>	<b>N/A</b>	
S&P 500		30.2%	13.2%	1.1%	N/A	
Morningstar Large Blend		27.1%	10.7%	-0.1%		
<b>External Large-Cap Active</b>	<b>\$1,500,065</b>	<b>27.5%</b>	<b>10.0%</b>	<b>N/A</b>	<b>17.6%</b>	<b>4/1/2009</b>
S&P 500		30.2%	13.2%	N/A	20.9%	
Morningstar Large Blend		27.1%	10.7%	N/A		
<b><u>SMRS Large-Cap Core Funds</u></b>						
<b>SMRS Large-Cap Core</b>	<b>\$1,632,744</b>	<b>31.7%</b>	<b>11.2%</b>	<b>0.9%</b>	<b>1.8%</b>	<b>7/31/2007</b>
S&P 500		30.2%	13.2%	1.1%	2.0%	
Morningstar Large Blend		27.1%	10.7%	-0.1%		
<b><u>SMRS Large-Cap Value Funds</u></b>						
<b>SMRS Large-Cap Value</b>	<b>\$778,904</b>	<b>20.8%</b>	<b>9.0%</b>	<b>-2.7%</b>	<b>-2.2%</b>	<b>7/31/2007</b>
S&P 500 Value Index		30.8%	11.4%	-1.6%	-0.7%	
Morningstar Large Value		27.0%	10.2%	-1.1%		
<b>External Large-Cap Value Composite</b>	<b>\$1,231,631</b>	<b>27.6%</b>	<b>N/A</b>	<b>N/A</b>	<b>9.4%</b>	<b>12/31/2009</b>
S&P 500 Value Index		30.8%	N/A	N/A	10.8%	
Morningstar Large Value		27.0%	N/A	N/A		
<b>LSV Large-Cap Value</b>	<b>\$584,688</b>	<b>31.2%</b>	<b>N/A</b>	<b>N/A</b>	<b>10.7%</b>	<b>12/31/2009</b>
S&P 500 Value Index		30.8%	N/A	N/A	10.8%	
Morningstar Large Value		27.0%	N/A	N/A		
<b>Wasatch Advisors</b>	<b>\$204,825</b>	<b>22.5%</b>	<b>N/A</b>	<b>N/A</b>	<b>6.3%</b>	<b>12/31/2009</b>
S&P 500 Value Index		30.8%	N/A	N/A	10.8%	
Morningstar Large Value		27.0%	N/A	N/A		
<b>Epoch Large-Cap Value</b>	<b>\$207,970</b>	<b>25.0%</b>	<b>N/A</b>	<b>N/A</b>	<b>9.6%</b>	<b>12/31/2009</b>
S&P 500 Value Index		30.8%	N/A	N/A	10.8%	
Morningstar Large Value		27.0%	N/A	N/A		
<b>Diamond Hill Large-Cap</b>	<b>\$234,148</b>	<b>27.0%</b>	<b>N/A</b>	<b>N/A</b>	<b>9.2%</b>	<b>12/31/2009</b>
S&P 500 Value Index		30.8%	N/A	N/A	10.8%	
Morningstar Large Value		27.0%	N/A	N/A		
<b><u>SMRS Large-Cap Growth Funds</u></b>						
<b>SMRS Large-Cap Growth</b>	<b>\$1,163,158</b>	<b>26.7%</b>	<b>12.6%</b>	<b>2.6%</b>	<b>5.4%</b>	<b>5/1/2005</b>
S&P 500 Growth Index		29.7%	14.9%	3.6%	5.3%	
Morningstar Large Growth		26.8%	11.6%	0.7%		
<b>External Large-Cap Growth Composite</b>	<b>\$268,434</b>	<b>28.5%</b>	<b>11.7%</b>	<b>N/A</b>	<b>19.1%</b>	<b>4/1/2009</b>
S&P 500 Growth Index		29.7%	14.9%	N/A	21.5%	
Morningstar Large Growth		26.8%	11.6%	N/A		
<b>Edgewood Large-Cap Growth</b>	<b>\$268,434</b>	<b>26.4%</b>	<b>11.2%</b>	<b>N/A</b>	<b>17.4%</b>	<b>4/1/2009</b>
S&P 500 Growth Index		29.7%	14.9%	N/A	21.5%	
Morningstar Large Growth		26.8%	11.6%	N/A		

## Mid-Cap Manager Performance, Net of Fees

	<u>Market Value</u>	<u>1 Year</u>	<u>3 Years</u>	<u>5 Years</u>	<u>Inception</u>	<u>Inception Date</u>
<b><i>External Mid-Cap Composite</i></b>	<b>\$728,249</b>	<b>26.3%</b>	<b>12.7%</b>	<b>1.6%</b>	<b>6.5%</b>	5/1/2005
S&P 400 Mid-Cap Index		28.5%	14.3%	3.8%	7.7%	
Morningstar Mid-Cap Blend		26.2%	11.5%	0.9%		
<b><u>SMRS Mid-Cap Core Funds</u></b>						
Champlain Investment Partners	\$78,511	24.1%	13.1%	N/A	19.6%	1/31/2009
S&P 400 Mid-Cap Index		28.5%	14.3%	N/A	22.4%	
Morningstar Mid-Cap Blend		26.2%	11.5%	N/A		
LA-Capital Mid-Cap Core	\$72,482	27.7%	12.8%	3.5%	8.3%	5/1/2005
S&P 400 Mid-Cap Index		28.5%	14.3%	3.8%	7.7%	
Morningstar Mid-Cap Blend		26.2%	11.5%	0.9%		
Munder Mid-Cap Core Growth	\$68,693	23.8%	14.0%	N/A	21.8%	3/31/2009
S&P 400 Mid-Cap Index		28.5%	14.3%	N/A	24.1%	
Morningstar Mid-Cap Blend		26.2%	11.5%	N/A		
<b><u>SMRS Mid-Cap Value Funds</u></b>						
Artisan Mid-Cap Value	\$214,694	26.2%	13.8%	5.9%	8.9%	5/1/2005
S&P 400 Value Index		31.4%	12.7%	2.5%	6.6%	
Cramer Rosenthal Mid-Cap Value	\$99,688	31.3%	12.6%	2.6%	7.8%	5/1/2005
S&P 400 Value Index		31.4%	12.7%	2.5%	6.6%	
<b><u>SMRS Mid-Cap Growth Funds</u></b>						
Rainier Mid-Cap Growth	\$104,421	30.8%	14.0%	-1.4%	4.6%	1/1/2006
S&P 400 Growth Index		25.8%	16.0%	5.2%	7.0%	
Morningstar Mid-Cap Growth		24.3%	12.5%	0.7%		
Wellington Mid-Cap Growth	\$89,760	19.7%	7.7%	-0.9%	3.7%	1/1/2006
S&P 400 Growth Index		25.8%	16.0%	5.2%	7.0%	
Morningstar Mid-Cap Growth		24.3%	12.5%	0.7%		

## Small-Cap Manager Performance, Net of Fees

	<u>Market Value</u>	<u>1 Year</u>	<u>3 Years</u>	<u>5 Years</u>	<u>Inception</u>	<u>Inception Date</u>
<b><i>External Small-Cap Composite</i></b>	<b>\$638,335</b>	<b>26.5%</b>	<b>11.1%</b>	<b>3.5%</b>	<b>7.6%</b>	<b>10/1/2001</b>
S&P 600 Small-Cap Index		33.4%	15.1%	3.3%	9.5%	
Morningstar Small Blend		29.6%	12.2%	1.2%		
<b><u>SMRS Small-Cap Core Managers</u></b>						
Champlain Small-Cap Core	\$55,329	24.7%	14.2%	5.6%	7.2%	1/31/2007
S&P 600 Index		33.4%	15.1%	3.3%	3.7%	
Morningstar Small Blend		29.6%	12.2%	1.2%		
Northpointe Small-Cap	\$57,890	31.5%	8.2%	-0.6%	4.5%	10/1/2004
S&P 600 Value/Core Index Blend		33.4%	13.1%	2.3%	6.4%	
Morningstar Small Value		29.5%	11.9%	1.9%		
<b><u>SMRS Small-Cap Value Managers</u></b>						
Fisher Small-Cap Value	\$213,944	33.9%	12.5%	3.5%	8.6%	9/30/2004
S&P 600 Value Index		35.9%	13.7%	2.6%	6.6%	
Morningstar Small Value		29.5%	11.9%	1.9%		
Donald Smith & Co.	\$161,565	17.5%	8.4%	7.5%	6.1%	1/31/2007
S&P 600 Value Index		35.9%	13.7%	2.6%	2.2%	
Morningstar Small Value		29.5%	11.9%	1.9%		
GW-Capital Small-Cap Value	\$48,153	33.0%	13.5%	1.9%	2.3%	1/31/2007
S&P 600 Value Index		35.9%	13.7%	2.6%	2.2%	
Morningstar Small Value		29.5%	11.9%	1.9%		
Opus-Capital Small-Cap Value	\$35,354	25.2%	11.2%	0.9%	1.6%	1/31/2007
S&P 600 Value Index		35.9%	13.7%	2.6%	2.2%	
Morningstar Small Value		29.5%	11.9%	1.9%		
<b><u>SMRS Small-Cap Growth Managers</u></b>						
Pier Small-Cap Growth	\$66,100	26.1%	11.6%	3.3%	5.2%	1/31/2007
S&P 600 Growth Index		31.1%	16.7%	4.0%	5.3%	
Morningstar Small Growth		28.7%	13.3%	1.0%		

### All-Cap Manager Performance, Net of Fees

	<u>Market Value</u>	<u>1 Year</u>	<u>3 Years</u>	<u>5 Years</u>	<u>Inception</u>	<u>Inception Date</u>
Attucks Asset Management	\$164,178	26.5%	12.2%	N/A	1.0%	11/1/2007
S&P 1500 Super Composite		30.2%	13.4%	N/A	1.0%	
<i>Morningstar S&amp;P 1500 Cap-Weighted Average</i>		27.1%	10.9%	N/A		
Bivium-Capital Partners	\$150,401	28.9%	13.7%	N/A	1.0%	11/1/2007
S&P 1500 Super Composite		30.2%	13.4%	N/A	1.0%	
<i>Morningstar S&amp;P 1500 Cap-Weighted Average</i>		27.1%	10.9%	N/A		
Leading Edge Investment Advisors	\$52,099	27.0%	12.1%	N/A	0.9%	11/1/2007
S&P 1500 Super Composite		30.2%	13.4%	N/A	1.0%	
<i>Morningstar S&amp;P 1500 Cap-Weighted Average</i>		27.1%	10.9%	N/A		
SMRS All-Cap GARP *	\$131,105	39.3%	N/A	N/A	14.9%	5/1/2011
S&P 1500 Super Composite		30.2%	N/A	N/A	5.6%	
<i>Morningstar S&amp;P 1500 Cap-Weighted Average</i>		27.1%	N/A	N/A		
Seizert-Capital Partners	\$133,381	28.6%	N/A	N/A	15.1%	11/1/2009
S&P 1500/S&P 400 Blend		30.2%	N/A	N/A	19.7%	
<i>Morningstar S&amp;P 1500 Cap-Weighted Average</i>		27.1%	N/A	N/A		

### Balanced Fund Manager Performance, Net of Fees

	<u>Market Value</u>	<u>1 Year</u>	<u>3 Years</u>	<u>5 Years</u>	<u>Inception</u>	<u>Inception Date</u>
SMRS Absolute Return Income Fund	\$188,556	25.5%	15.8%	N/A	16.7%	
60% S&P 500/40% BARCLAYS AGG		19.9%	10.7%	N/A	12.4%	
Morningstar Moderate Allocation		17.9%	8.5%	N/A		

\*Calculated internally rather than by State 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 mngs 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 mngs 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 mngs that ranked below median...		Avg no. of consecutive Qs spent below median <sup>(2)</sup>	No. mngs who recovered from "down period" by 09.30.2010 <sup>(3)</sup> , <sup>(4)</sup>	Avg rank of the recovered mngs following 1st "down" period <sup>(4)</sup>
	Total	Top Quartile	for 1 or more quarters	for 4 or more quarters			
US Large Cap Value	176	44	89%	77%	7.6	17	26.5
US Large Cap Growth	204	51	92%	69%	5.6	24	28.1
US Small Cap Value	124	31	94%	61%	4.3	11	27.3
US Small Cap Growth	116	29	93%	72%	6.3	16	31.6
Fixed Income - Core	164	41	90%	68%	5.6	24	24.4
Fixed Income - High Yield	72	18	94%	72%	4.2	8	29.0
Non-US Equity - EAFE Core	40	10	90%	90%	5.6	6	22.4
Non-US Equity - Emerging	72	18	94%	67%	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.

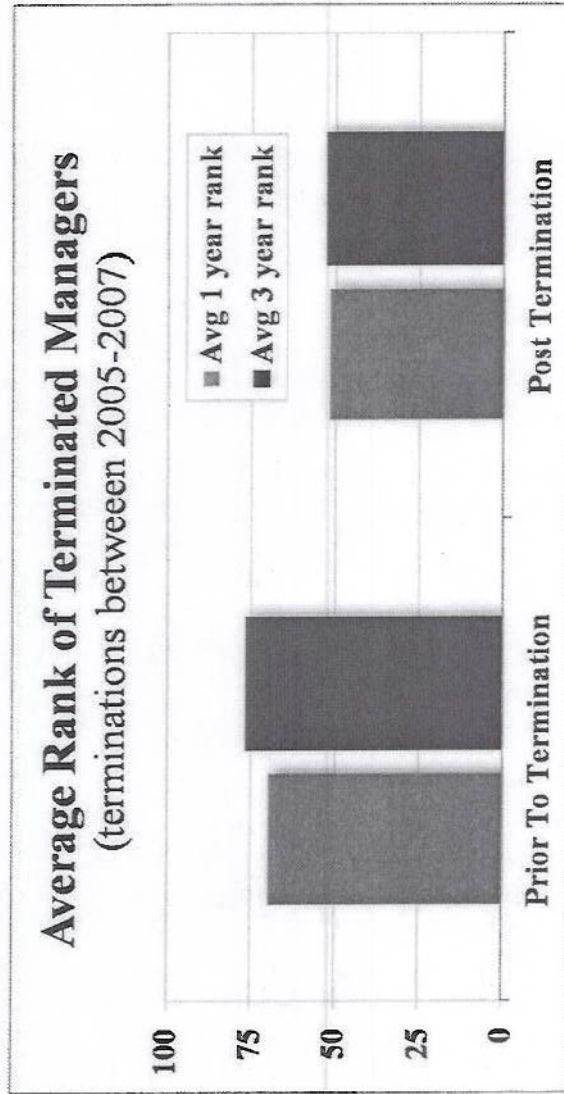
(4) "Down period" is classified as four or more consecutive quarters of below median ranks.

Data Source: eInvestment 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**

**DECEMBER 6, 2012**



**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	17.3%	4.2%	-4.1%	2.2%	8.0%
Benchmark Return	15.0%	2.6%	-4.9%	1.4%	7.6%
Rank vs. Peers	20	50	52	70	86

- Performance of the total international equity positions in developed markets versus the MSCI ACWI ex USA benchmark was +7.3% versus +7.5% in the third quarter, resulting in a -15 basis points (bp) tracking error and a cumulative +210 basis points for the trailing year. Both variance numbers are within the normal expected range that recognizes a 250 bp 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 +143 and +43 basis points, respectively. Emerging markets represent approximately 25% of the MSCI ACWI ex USA benchmark.
- The largest component in passive exposure to international developed market returns is the internally managed stock plus fund. The approximate \$1 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 \$86 million as of September 30, 2012. Recognized but unrealized gains from fixed income Libor notes, remarked at lower cost values, are now \$11 million. Libor notes held are listed at the end of 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 +7.1% in the third quarter versus the benchmark's return of +6.7%. The one, three and five-year tracking error numbers are positive 231, 146 and 63 basis points, respectively.
- Externally managed, active strategy funds in all Non-U.S. equity categories totaled \$3.2 billion.
- 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 +7.6% in the quarter and +14.1% for the trailing year. Manager returns are diversified, and reflect different investment strategies and approaches. Stock Plus strategies have been extremely 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 +7.7% for the quarter, and +16.9% for the trailing year. Passive and active exposure of \$1.8 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.

## **Five Year Review**

- To lower risks, improve liquidity and opportunistically enhance longer term returns, internal stock plus holdings were reduced to add external passive and actively managed funds including PIMCO stock plus funds. The resulting diversified blend of international funds has begun to outperform its peer benchmark and has continued to outperform its passive S&P Developed and MSCI Emerging Indices benchmarks.
- Passive exposure to emerging markets was added in July, 2009 and active managers were then added for diversification and return enhancement.
- Currency exposure has been increased by reducing the earlier 50% hedge position of the internal stock plus fund to a 25% benchmark. As external managers do not hedge currencies, the current hedged positions represent only 2.5% of total international exposure.
- To address increased fixed income volatility and low Libor rates, externally managed stock plus funds were added to gain exposure to actively managed five-year total return funds with positive performance and higher returns to combine with stock overlays. In the internal stock plus fund, a global dividend fund was added to replace approximately 20% of the Libor note portfolio with better cash flow characteristics.
- Diversified, single A and above investment grade counterparty relationships and grandfathered swap agreement contracts were a continuing competitive advantage for the internal stock plus fund. Regulation changes will reduce the administrative advantages in the future, but the overlay quality and flexibility strengths are still positive factors.

## **Outlook**

- International equities are expected to remain under pressure as recognition of system credit risk in multiple asset categories progress, and dividend reductions and write-offs continue. Greece, Portugal, Italy, Ireland, 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. Growth expectations in emerging markets are positive, but slowing due to European and Chinese market trends. Political instability remains an issue.
- Indices are at reasonable levels for progressive buying of exposure over the next six to nine months. Additions will be primarily 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 an uncertain and volatile market environment. The target is to be approximately 50% passive and 50% active.
- Emerging markets are expected to benefit from growing local demand and the longer-term outlook is positive. Political instability, lack of established and tested legal systems, growing regulation, possible nationalization of assets and changing tax regimes remain continuing concerns. Individual company financing of receivables has begun and will systematically reduce many company returns and metrics for the next few years. The plans are slightly overweight to emerging markets due to concern in Europe.

## **Investment Plan**

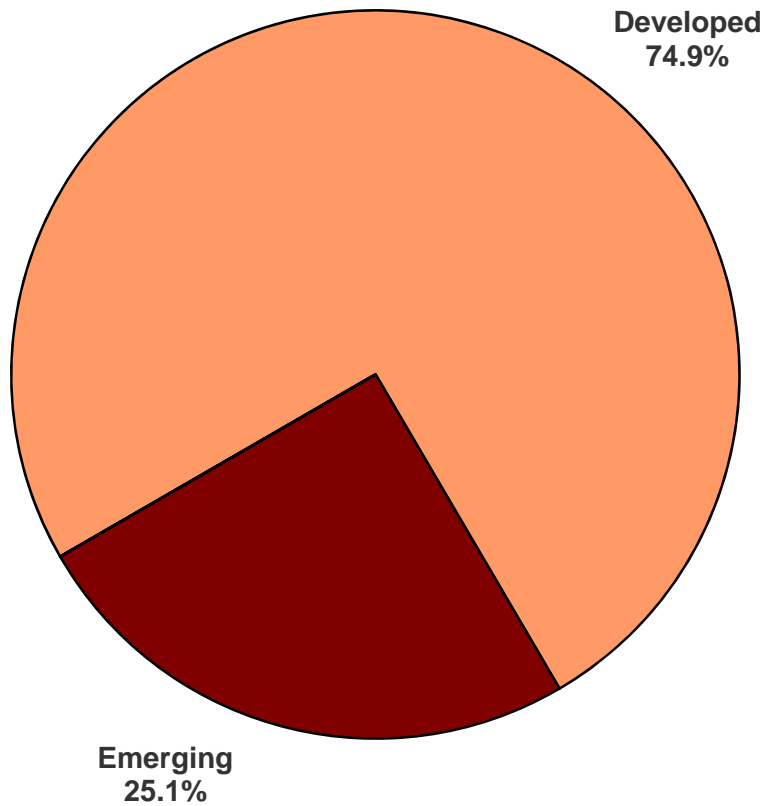
- Move toward desired higher asset allocation targets in a progressive series of investments with both passive and active managers. Take advantage of external manager capacity and established conduits as market corrections and tactical opportunities occur. Be patient but move some assets from other categories as international equities become more attractive on a relative basis.
- Add new counterparties with strong credit ratings and unique capabilities for diversification and helpful information for decision making. Identify external managers for incremental additions and attractive niche investments.
- 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 that reset quarterly. Prepare for derivative market changes by focusing on standardized structures, increasing collateral balances and more frequent settlement requirements. Major regulatory clarification for international local country index derivatives is not expected until 2013, and even Basel III compliance with greater reserve levels has been delayed.





# SMRS

## International Equity Holding By Category SMRS Versus Benchmark 9/30/12



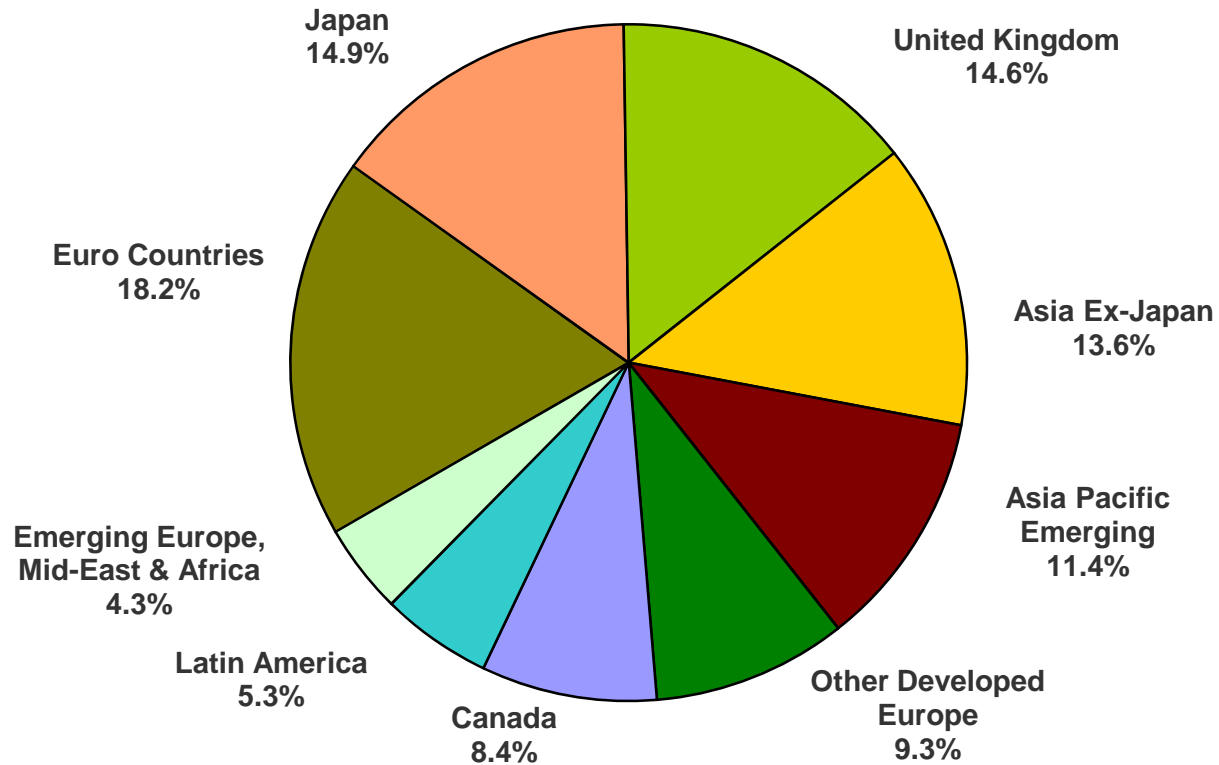
<b>Investments by Region</b>		
	<u>SMRS</u>	<u>Benchmark</u>
Developed	74.9%	75.0%
Emerging	<u>25.1%</u>	<u>25.0%</u>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>



# SMRS

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

### 9/30/12



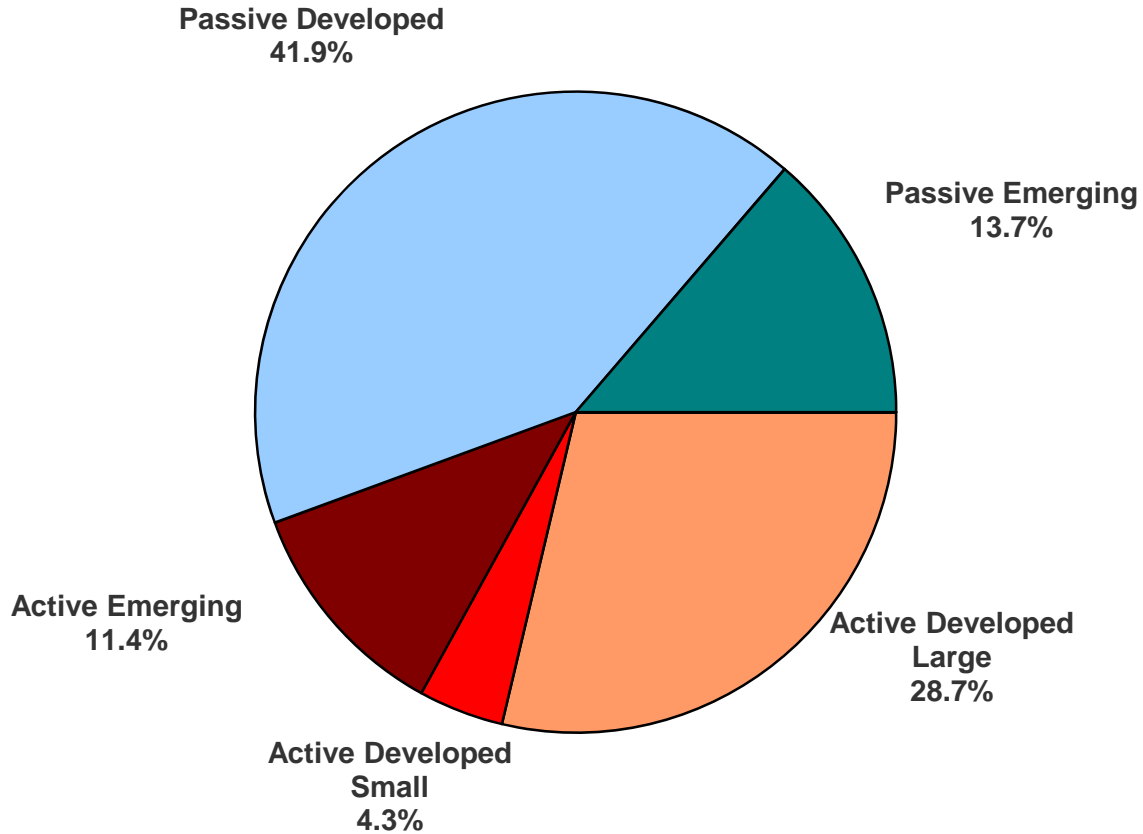
#### Investments by Region

	<u>Benchmark</u>
Euro Countries	18.2%
Japan	14.9%
United Kingdom	14.6%
Asia Ex-Japan	13.6%
Asia Pacific Emerging	11.4%
Other Developed Europe	9.3%
Canada	8.4%
Latin America	5.3%
Emerging Europe, Mid-East & Africa	4.3%
<b>Total</b>	<b>100.0%</b>



# SMRS

## International Equity Holdings By Category 9/30/12

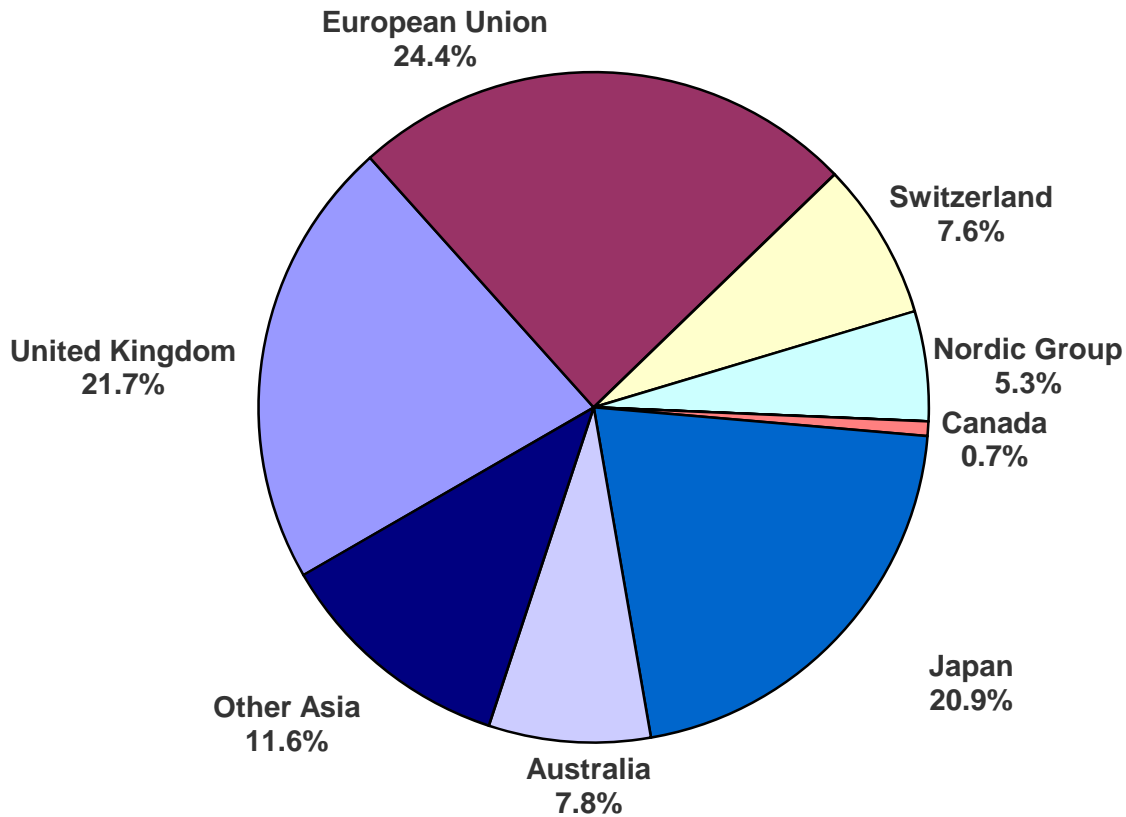


<b>Market Value in Millions</b>				
	<u>9/30/2012</u>		<u>6/30/2012</u>	
<b><u>Active</u></b>				
Developed Large	\$2,049	28.7%	\$1,904	27.2%
Developed Small	305	4.3%	279	4.0%
Emerging	812	11.4%	739	10.5%
<b>Total Active Equity</b>	<b>3,166</b>	<b>44.4%</b>	<b>2,922</b>	<b>41.7%</b>
<b><u>Passive</u></b>				
Developed	\$2,998	41.9%	\$3,107	44.4%
Emerging	983	13.7%	974	13.9%
<b>Total Passive Equity</b>	<b>3,981</b>	<b>55.6%</b>	<b>4,081</b>	<b>58.3%</b>
<b>Total International Equity</b>	<b>\$7,147</b>	<b>100.0%</b>	<b>\$7,003</b>	<b>100.0%</b>



# SMRS

## Developed International Passive Equity SMRS Versus BMI EPAC Benchmark 9/30/12



<b>Investments by Region</b>		
	<b>SMRS</b>	<b>Benchmark</b>
<b>Europe</b>		
United Kingdom	21.7%	20.8%
European Union	24.4%	25.9%
Switzerland	7.6%	7.4%
Nordic Group	5.3%	5.3%
Other Europe	0.0%	0.0%
<b>Total Europe</b>	<b>59.0%</b>	<b>59.4%</b>
<b>Asia</b>		
Japan	20.9%	21.3%
Australia	7.8%	8.4%
Other Asia	11.6%	10.9%
<b>Total Asia</b>	<b>40.3%</b>	<b>40.6%</b>
Canada	0.7%	0.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>

**Total Developed International Passive Equity Investment: \$2,998 Million**

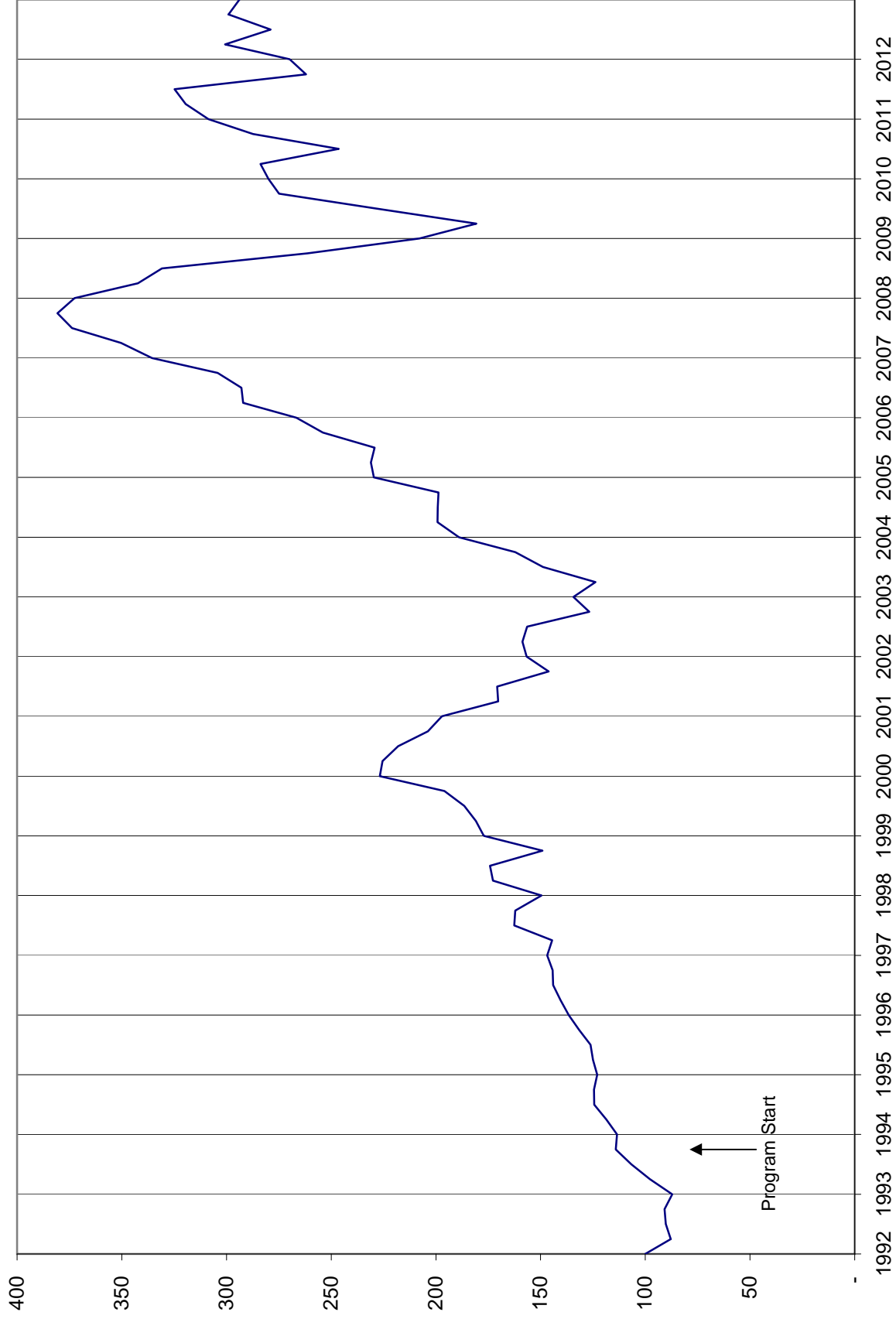


# SMRS

## Non-U.S. Equities 9/30/12

	INDEXED	ACTIVE	TOTAL	Percent
<b>Developed Markets - Large/Mid Capitalization</b>				
Internal Stock Plus Combination	\$1,261,246,759		\$1,261,246,759	
SSgA PMI fund	487,783,088		487,783,088	
Vanguard Developed Markets Fund	790,889,261		790,889,261	
SSgA International Alpha Select BMI Fund		\$419,674,397	419,674,397	
Wellington International Research Equity Fund		416,439,774	416,439,774	
PIMCO Stock Plus		704,559,514	704,559,514	
Marathon-London EAFE		254,332,518	254,332,518	
Baillie Gifford ACWI Ex US Alpha		<u>253,768,737</u>	<u>253,768,737</u>	64.2%
<b>Sub-Total Developed Large/Mid Cap</b>	\$2,539,919,108	\$2,048,774,940	<b>\$4,588,694,048</b>	
<b>Developed Markets - Small Capitalization</b>				
SSgA EMI Fund	\$458,360,092		\$458,360,092	
SSgA International Small Cap Alpha Fund		\$87,932,976	87,932,976	
MFS International Small Cap		104,272,130	104,272,130	
Franklin Templeton Int'l Small Cap Fund		112,397,858	112,397,858	
<b>Sub-Total Developed Small Cap</b>		762,963,056	762,963,056	10.7%
<b>Total Developed Markets</b>			<b>\$5,351,657,104</b>	<b>74.9%</b>
<b>Emerging Markets - All Capitalization</b>				
Vanguard Emerging Mkt Stock Index Fund	\$983,260,299		\$983,260,299	
LACM Emerging Market Fund		\$196,441,660	196,441,660	
PIMCO Emerging Market Fund		506,485,597	506,485,597	
Wellington Emerging Market Fund		109,425,255	<u>109,425,255</u>	
<b>Total Emerging</b>			<b>\$1,795,612,811</b>	<b>25.1%</b>
<b>TOTAL</b>	\$3,981,539,499	\$3,165,730,416	<b>\$7,147,269,915</b>	<b>100%</b>
<b>Percent</b>	<u>55.7%</u>	<u>44.3%</u>		

# BMI EPAC Net Dividend Return Index (USD)



# SMRS SWAP AGREEMENTS

## International Equity Exposure

Maturity Date	Trade Date	Notional	Countries	Indices	Local		U.S. Dollar
					Currency	FX Expos.	
					FX Expos.	No FX Expos.	
10/19/2012	10/07/2011	\$130,000,000	7	7	100%	0%	
10/19/2012	10/21/2011	190,000,000	5	5	76%	24%	
10/19/2012	10/21/2011	13,000,000	1	1	100%	0%	
12/03/2012	12/16/2011	35,000,000	5	5	100%	0%	
12/03/2012	12/01/2011	214,999,996	8	8	100%	0%	
01/18/2013	02/15/2012	12,000,000	2	2	0%	100%	
01/18/2013	01/18/2012	30,000,000	2	2	100%	0%	
01/18/2013	01/18/2012	39,991,452	2	2	100%	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%	

Total \$989,991,449  
 Notional maturing during 2012 \$582,999,996  
 59%

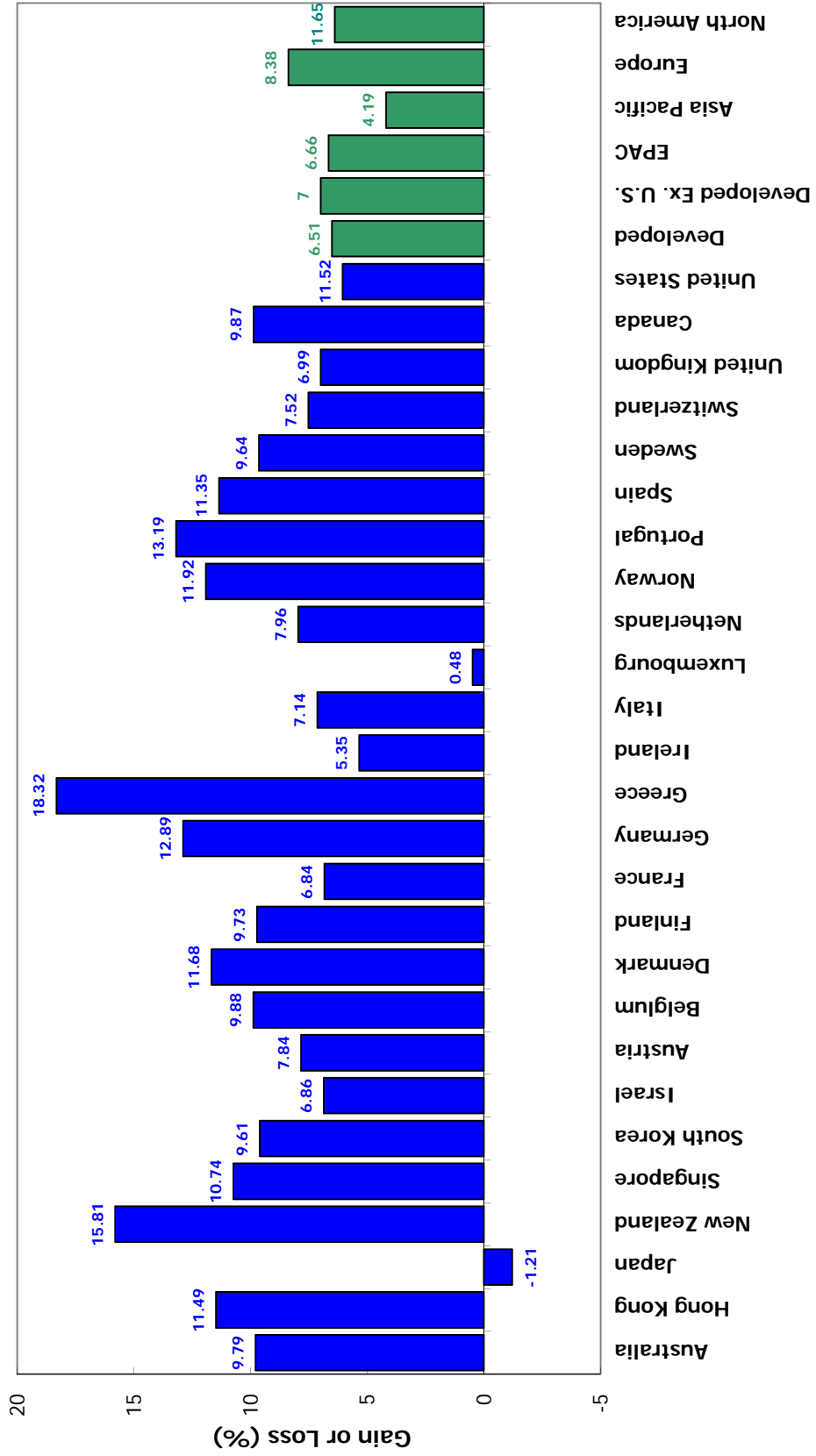
**SMRS**  
**INTERNATIONAL SWAP**  
**FIXED INCOME DETAILS**  
Sorted by Issuer

MONTH END: 10/31/12

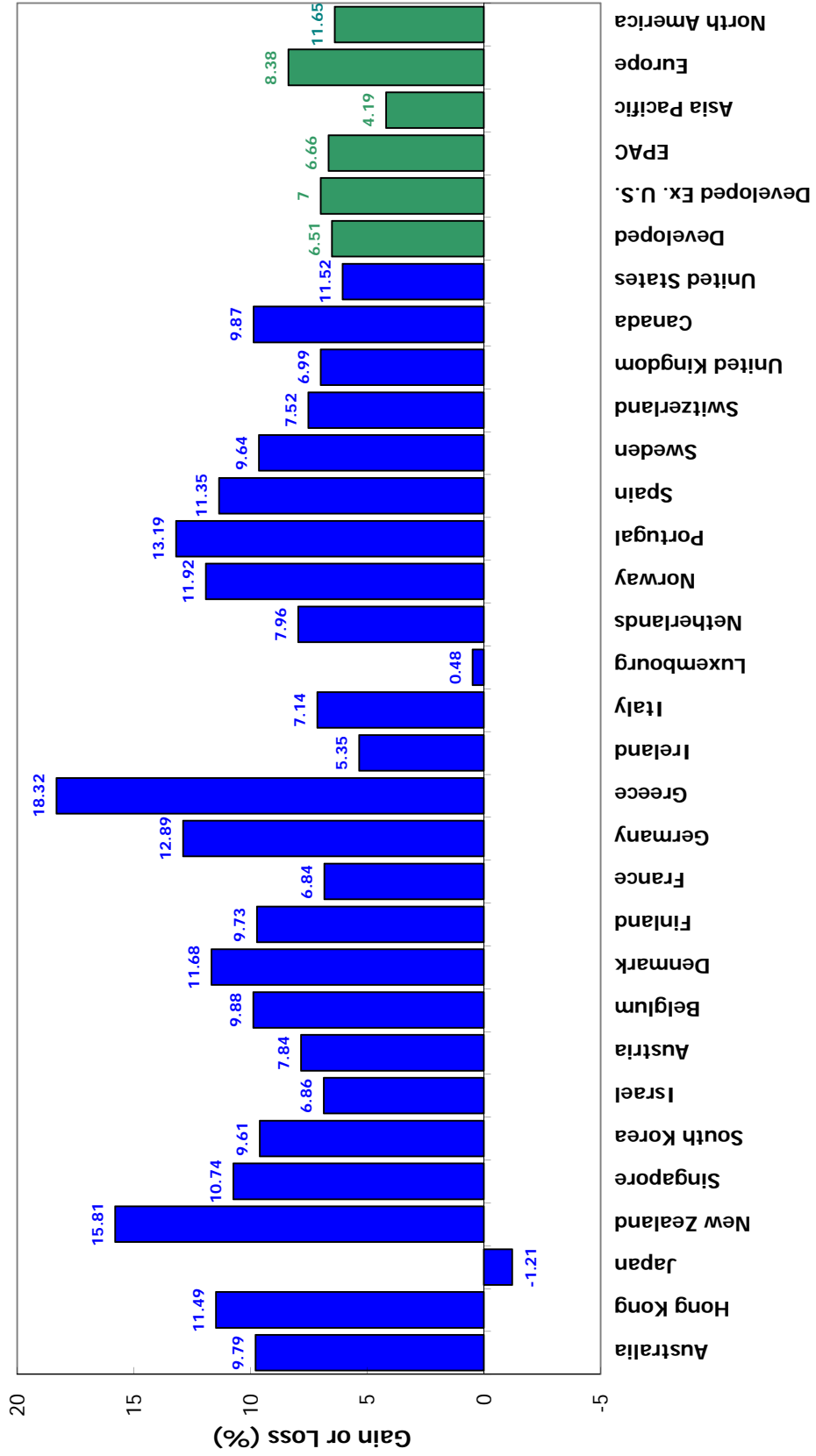
CUSIP	NOTE NAME	MAT. DATE	PAR	COST	MKT VALUE	G/L	% G/L	CR. RATING	SPREAD
06406hbv0	BANK OF NEW YORK MELLON	1/31/2014	12,000,000.00	12,032,652.00	12,038,472.00	5,820.00	0.05%	Aa3	0.280%
06406hbv0	BANK OF NEW YORK MELLON	1/31/2014	33,000,000.00	33,107,184.00	33,105,798.00	(1,386.00)	0.00%	Aaa	0.280%
			45,000,000.00	45,139,836.00	45,144,270.00	4,434.00	0.01%		
064159an6	BANK OF NOVA SCOTIA	1/12/2015	50,000,000.00	50,946,350.00	50,937,550.00	(8,800.00)	-0.02%	Aa1 /*-	1.040%
			50,000,000.00	50,946,350.00	50,937,550.00	(8,800.00)			
06740pr40	BARCLAYS BANK PLC	1/13/2014	8,800,000.00	8,758,877.60	8,759,493.60	616.00	0.01%	A2	0.860%
06740pr40	BARCLAYS BANK PLC	1/13/2014	13,200,000.00	13,138,316.40	13,139,240.40	924.00	0.01%	A2	0.860%
06740pr40	BARCLAYS BANK PLC	1/13/2014	3,000,000.00	2,985,981.00	2,986,191.00	210.00		A2	0.860%
06740pr40	BARCLAYS BANK PLC	1/13/2014	50,000,000.00	49,042,600.00	49,769,850.00	727,250.00	1.48%	A2	0.860%
06740pr40	BARCLAYS BANK PLC	1/13/2014	24,000,000.00	23,887,848.00	23,889,528.00	1,680.00		Aaa	0.860%
06740pr40	BARCLAYS BANK PLC	1/13/2014	1,000,000.00	980,852.00	995,397.00	14,545.00	1.48%	A2	0.860%
			100,000,000.00	98,794,475.00	99,539,700.00	745,225.00			
084664bp5	BERKSHIRE HATHAWAY FIN	1/10/2014	35,000,000.00	34,678,140.00	35,145,040.00	466,900.00	1.35%	Aa2	0.330%
084664bp5	BERKSHIRE HATHAWAY FIN	1/10/2014	15,000,000.00	14,904,382.50	15,062,160.00	157,777.50	1.06%	Aa2	0.330%
084664bp5	BERKSHIRE HATHAWAY FIN	1/10/2014	5,000,000.00	4,968,127.50	5,020,720.00	52,592.50	1.06%	Aa2	0.330%
			55,000,000.00	54,550,650.00	55,227,920.00	677,270.00			
13606XW87	CANADIAN IMP BK COMM NY	4/12/2016	9,000,000.00	9,024,240.60	9,081,765.00	57,524.40	0.64%	Aa2 /*-	0.720%
13606XW87	CANADIAN IMP BK COMM NY	4/12/2016	41,000,000.00	41,110,429.40	41,372,485.00	262,055.60	0.64%	Aa2 /*-	0.720%
			50,000,000.00	50,134,670.00	50,454,250.00	319,580.00			
172967FM8	CITIGROUP INC	2/15/2013	40,000,000.00	39,333,920.00	40,070,680.00	736,760.00	1.87%	Baa2	0.850%
			40,000,000.00	39,333,920.00	40,070,680.00	736,760.00			
36962g2f0	GENERAL ELEC CAP CORP	2/15/2017	76,900,000.00	72,361,438.90	74,377,295.50	2,015,856.60	2.79%	A1	0.170%
36962g2f0	GENERAL ELEC CAP CORP	2/15/2017	27,100,000.00	25,519,175.70	26,210,984.50	691,808.80	2.71%	A1	0.170%
36962g2f0	GENERAL ELEC CAP CORP	2/15/2017	29,000,000.00	27,283,983.00	28,048,655.00	764,672.00	2.80%	A1	0.170%
36962g2f0	GENERAL ELEC CAP CORP	2/15/2017	58,000,000.00	56,092,322.00	56,097,310.00	4,988.00	0.01%	A1	0.170%
36962g2f0	GENERAL ELEC CAP CORP	2/15/2017	9,000,000.00	8,424,099.00	8,704,755.00	280,656.00	3.33%	A1	0.170%
			200,000,000.00	189,681,018.60	193,439,000.00	3,757,981.40			
46623ecq0	JPMORGAN CHASE & CO	11/1/2012	35,000,000.00	35,052,780.00	35,000,000.00	(52,780.00)	-0.15%	A2	0.150%
46623ecq0	JPMORGAN CHASE & CO	11/1/2012	22,000,000.00	22,007,524.00	22,000,000.00	(7,524.00)	-0.03%	A2	0.150%
46623ecq0	JPMORGAN CHASE & CO	11/1/2012	43,000,000.00	43,000,516.00	43,000,000.00	(516.00)	0.00%	A2	0.150%
			100,000,000.00	100,060,820.00	100,000,000.00	(60,820.00)			
78008KV83	ROYAL BANK OF CANADA	3/9/2016	40,000,000.00	39,509,408.00	39,606,480.00	97,072.00	0.25%	Aa3	0.500%
78008KV83	ROYAL BANK OF CANADA	3/9/2016	10,000,000.00	9,877,352.00	9,901,620.00	24,268.00	0.25%	Aa3	0.500%
			50,000,000.00	49,386,760.00	49,508,100.00	121,340.00			
78010jg8	ROYAL BK OF SCOTLAND PLC	3/11/2014	35,000,000.00	34,094,970.00	35,253,576.40	1,158,606.40	3.40%	A2	1.530%
78010jg8	ROYAL BK OF SCOTLAND PLC	3/11/2014	15,000,000.00	14,612,130.00	15,108,675.60	496,545.60	3.40%	A2	1.530%
			50,000,000.00	48,707,100.00	50,362,252.00	1,655,152.00			
89153uaa9	TOTAL CAPITAL CANADA LTD	1/17/2014	23,000,000.00	23,093,955.00	23,117,415.00	23,460.00	0.10%	Aa1	0.380%
89153uaa9	TOTAL CAPITAL CANADA LTD	1/17/2014	40,000,000.00	40,163,400.00	40,204,200.00	40,800.00	0.10%	Aa1	0.380%
			63,000,000.00	63,257,355.00	63,321,615.00	64,260.00			
			<b>803,000,000.00</b>	<b>789,992,954.60</b>	<b>798,005,337.00</b>	<b>8,012,382.40</b>	<b>1.01%</b>		<b>0.515%</b>



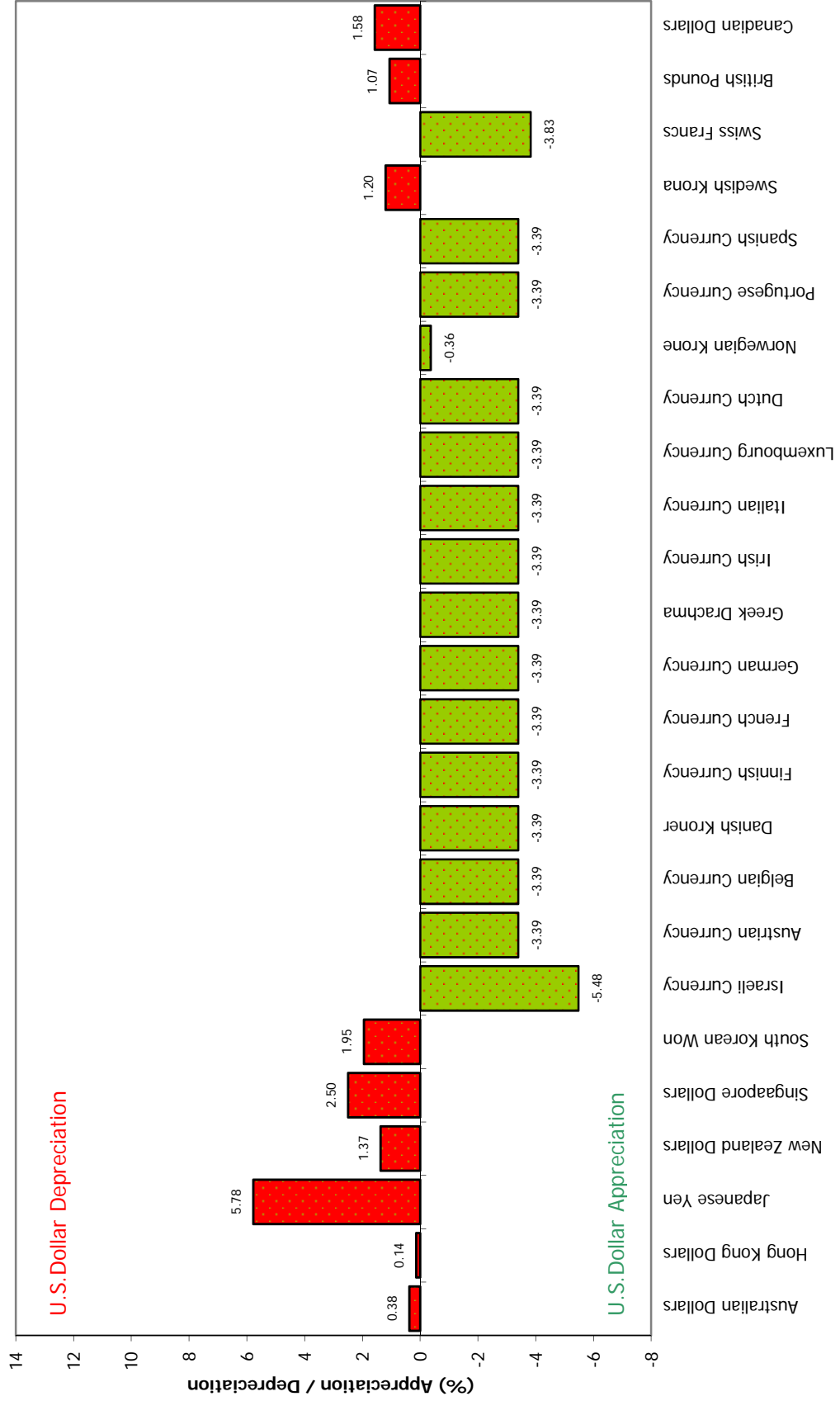
**S&P Developed Equity Index  
 BMI Performance by Country / Region  
 NET Total Rates of Return in 75% US\$ / 25% LOCAL Currency  
 3Q2012 (Daily Compounding)**



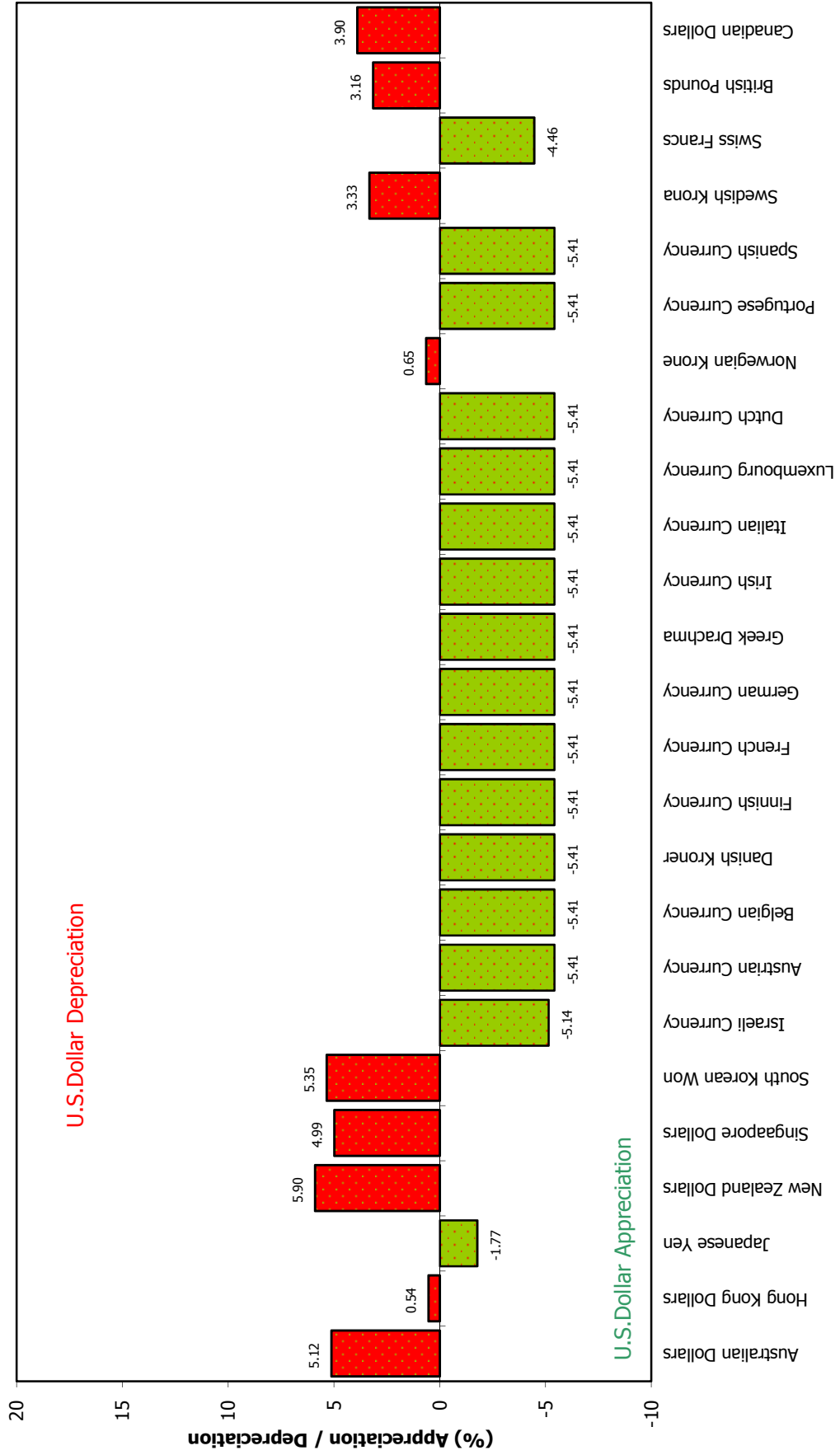
**S&P Developed Equity Index  
 BMI Performance by Country / Region  
 NET Total Rates of Return in 75% US\$ / 25% LOCAL Currency  
 3Q2012 (Daily Compounding)**

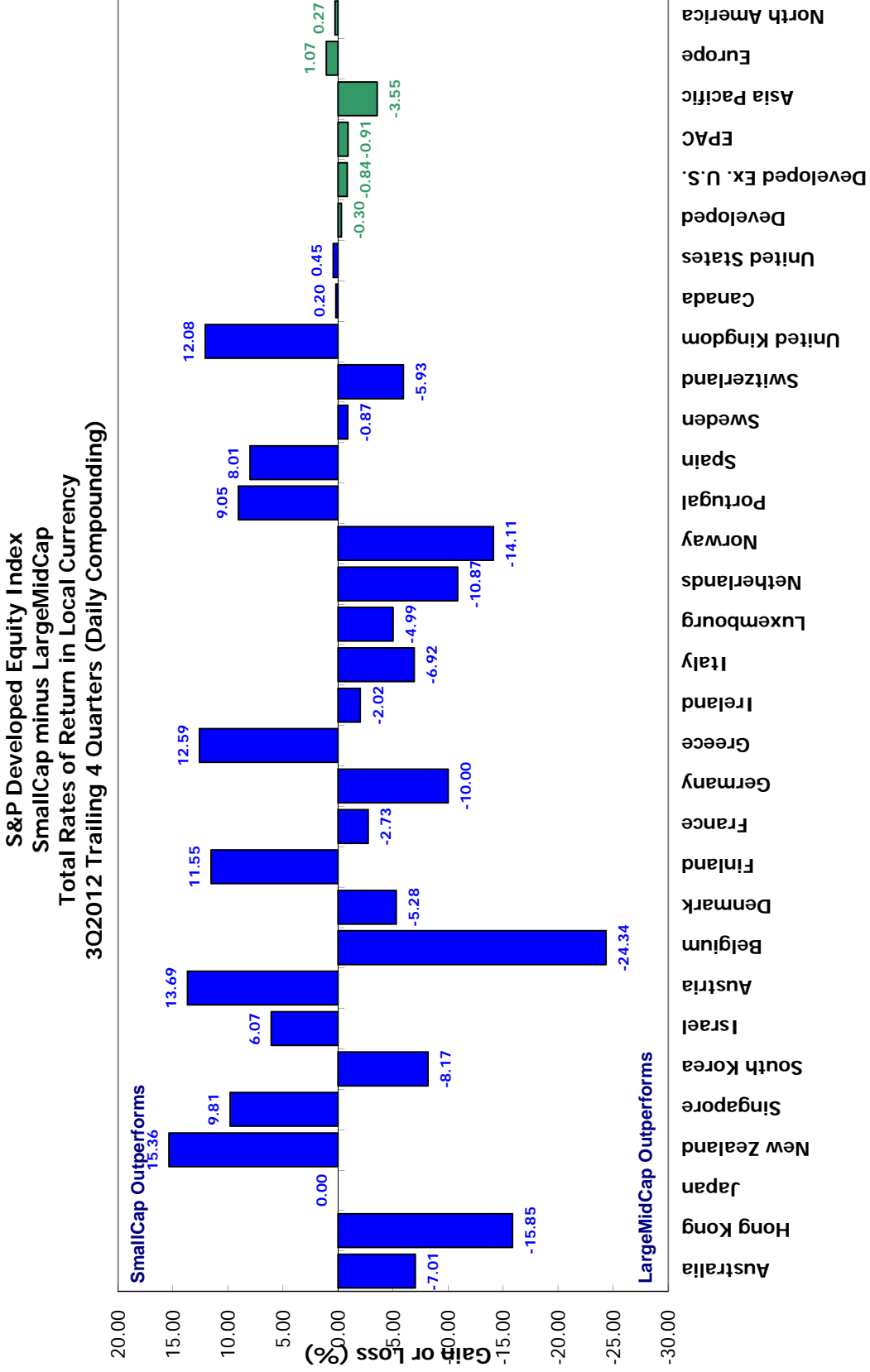


**S&P Developed Equity Index  
 Currency Performance versus the U.S. Dollar (In Percentage Terms)  
 29JUN2012 to 28Sep2012**

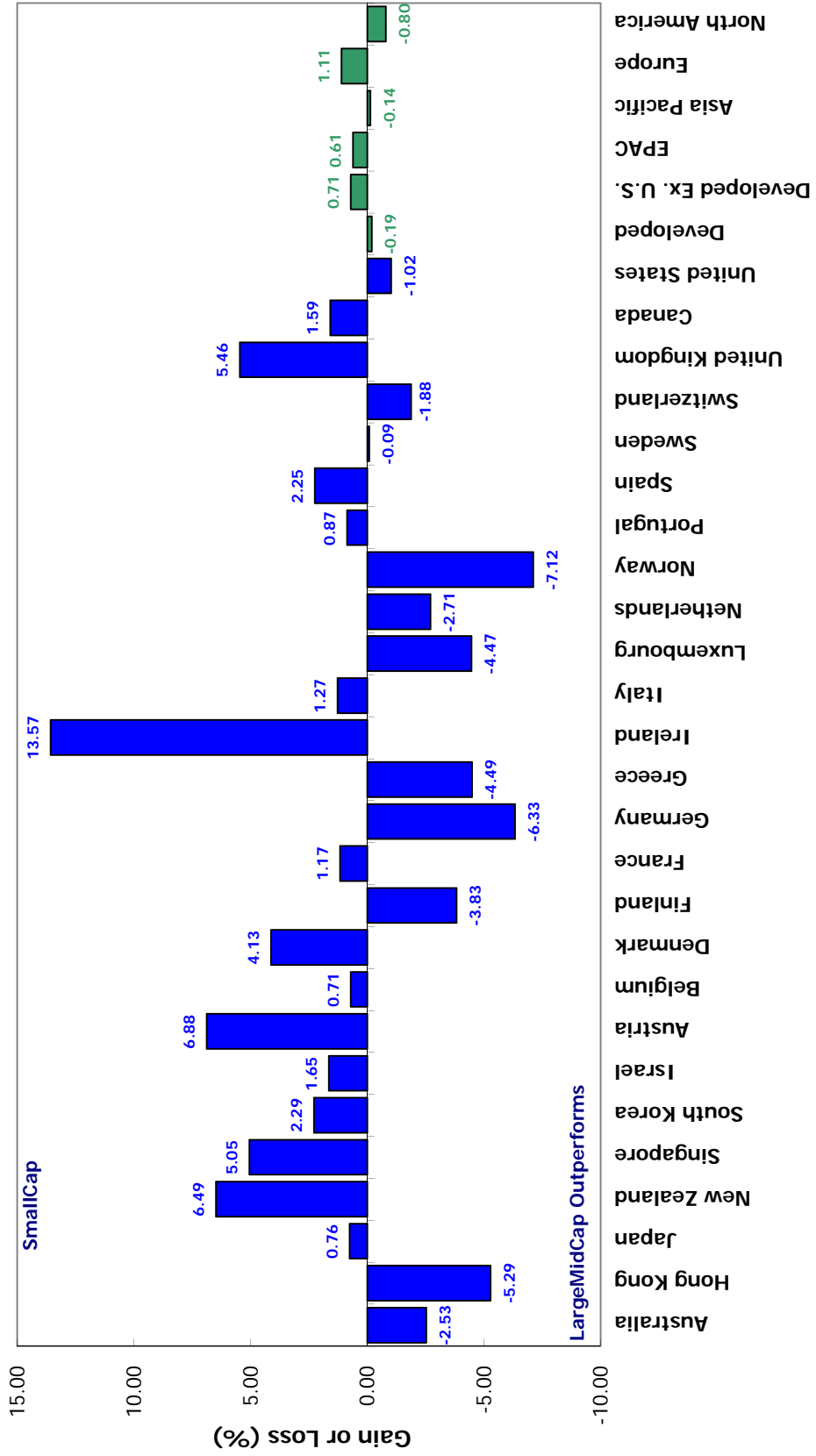


**S&P Developed Equity Index  
 Currency Performance versus the U.S. Dollar (In Percentage Terms)  
 30Sep2011 to 28Sep2012**





S&P Developed Equity Index  
 SmallCap minus LargeMidCap  
 Total Rates of Return in Local Currency  
 3Q2012 (Daily Compounding)





**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**ALTERNATIVE INVESTMENTS  
REVIEW**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**DECEMBER 6, 2012**



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





## EXECUTIVE SUMMARY

### General Overview

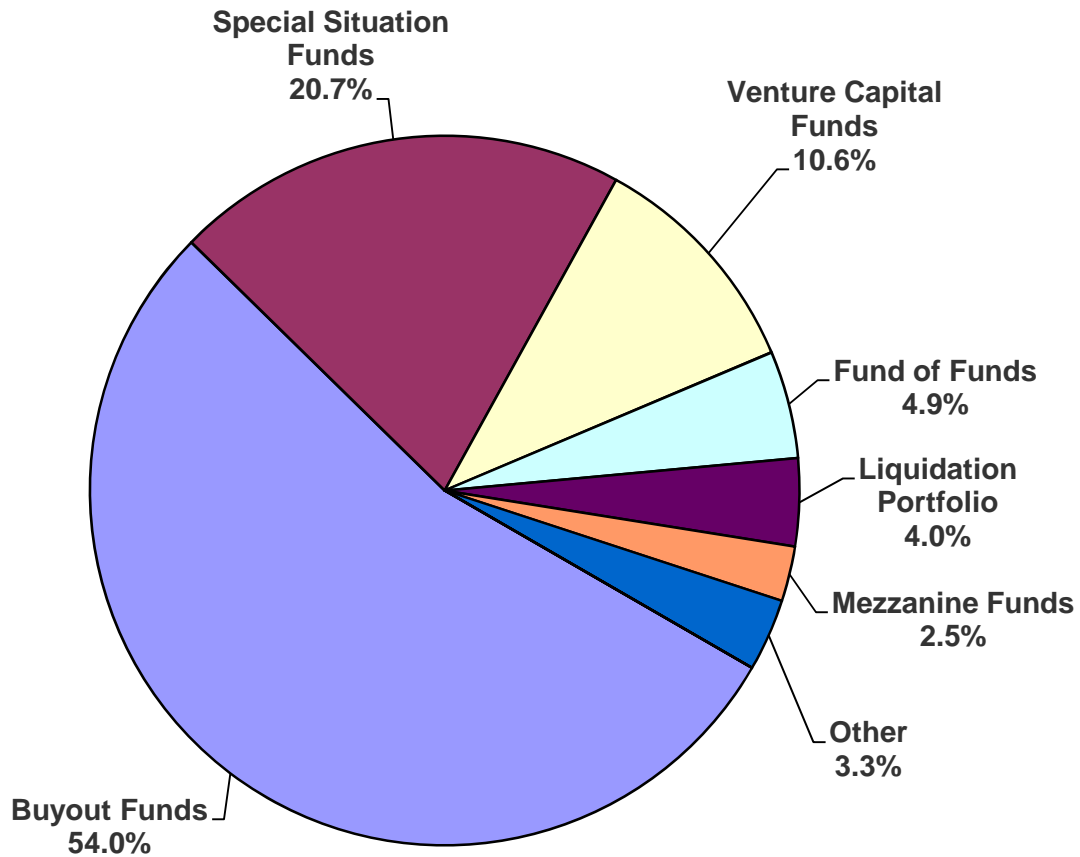
- Frothy credit markets and ebbing fears of a financial crisis in Europe lifted buyout activity from U.S. sponsors in the third quarter. Quarterly and year-to-date numbers show a steady increase in both the value and number of control-stake transactions closed. However, macro-economic risk continues to be a dominant theme for the near term. The U.S. fiscal cliff and the European sovereign debt crisis continue to foster volatility in both public and private markets. Despite the uncertainty in developed markets, growth in emerging markets is expected generally to outpace developed markets.
- The European debt crisis and continued pressure on the U.S. economy have weighed on the M&A market this year, despite recent action by the Federal Reserve and European Central Bank to shore up growth. Although exits through M&A have recovered nicely since 2008, the numbers show a steady drop in the use of M&A as an exit approach this year as we head into the final quarter.
- The use of initial public offerings (IPO) by U.S. sponsors has 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 since Facebook's debut on June 20.
- In the secondary market, pricing remained stable during the first half of 2012, but inched up slightly in the third quarter, partly due to the significant amount of capital raised to purchase secondary issues. During the first half of 2012, the average high first round bid for buyout funds was 85% of NAV, while the average high bid for venture funds increased to 74% of NAV.
- Fundraising is running double last year's pace. If current trends continue, money raised in 2012 by U.S. buyout and mezzanine funds will have eclipsed the totals in all years except 2006-08. A large portion of this resurgence is driven by a small handful of large funds that are back in the market. While momentum is stronger than it has been in years, the competition for money remains fierce, keeping leverage over terms and conditions squarely with the LPs.
- 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 just shy of \$200 million across 34 deals. Although the program is still actively investing, there have been five realizations and one dividend recap.



# SMRS

## Alternative Investments

### 9/30/12



<b>Market Value in Millions</b>				
	<u>9/30/2012</u>		<u>6/30/2012</u>	
Buyout Funds	\$5,710	54.0%	\$5,951	54.8%
Special Situation Funds	2,192	20.7%	2,211	20.3%
Venture Capital Funds	1,124	10.6%	1,158	10.7%
Fund of Funds	517	4.9%	532	4.9%
Liquidation Portfolio	417	4.0%	365	3.4%
Mezzanine Funds	266	2.5%	252	2.3%
Other	349	3.3%	391	3.6%
<b>Total</b>	<b>\$10,575</b>	<b>100.0%</b>	<b>\$10,860</b>	<b>100.0%</b>



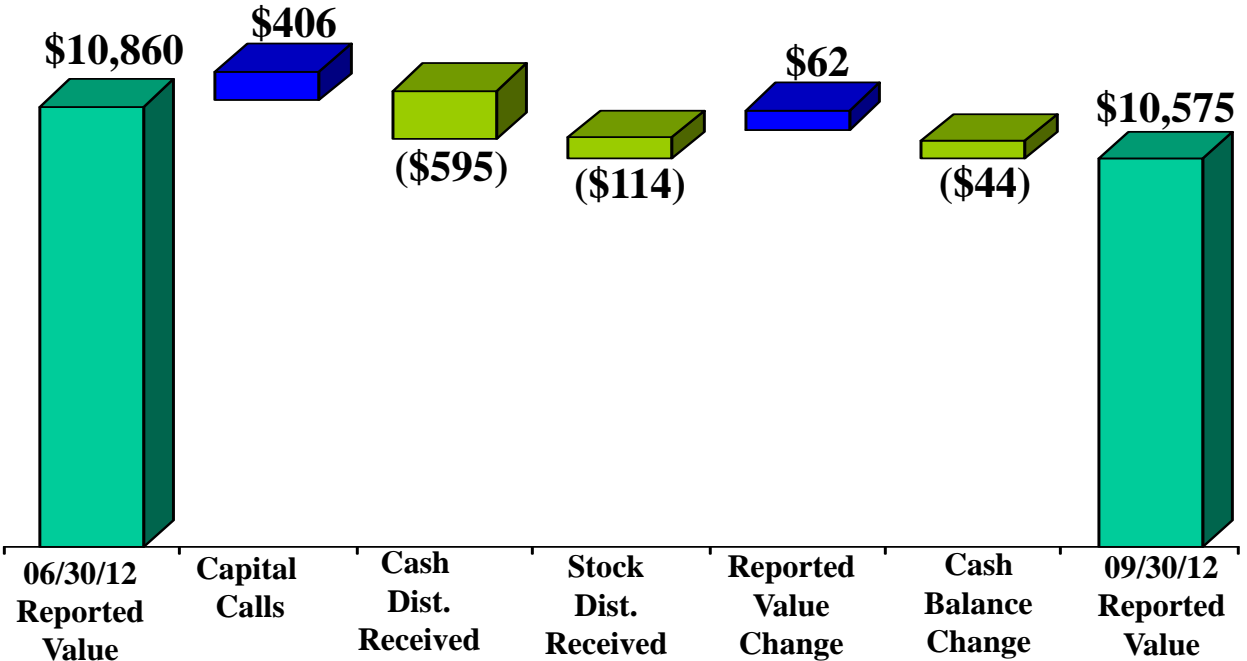
# SMRS

## Alternative Investments

### 9/30/12

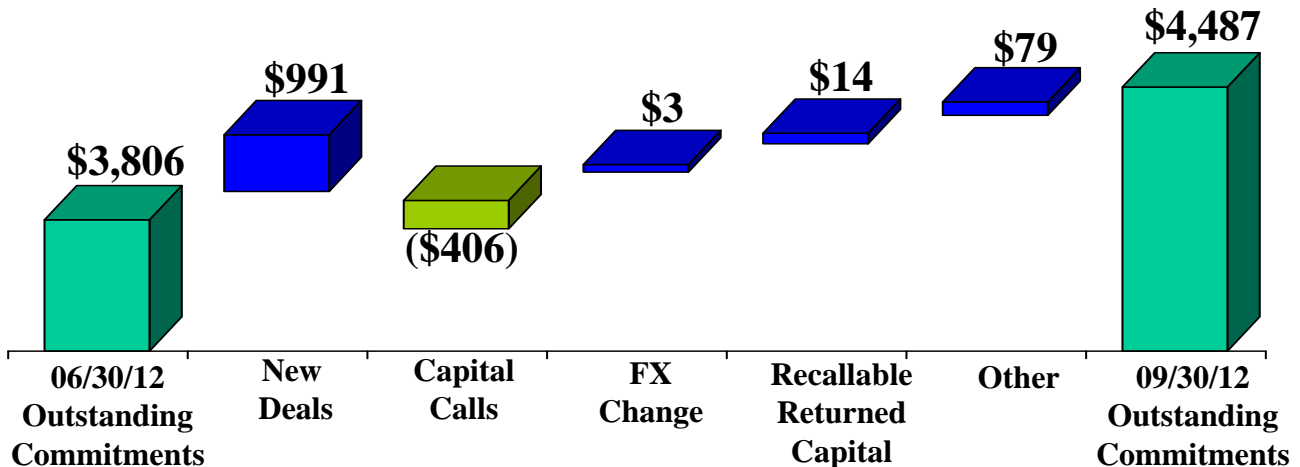
#### Invested Commitments

(\$ Millions)



#### Outstanding Commitments

(\$ Millions)





# SMRS

## Alternative Investments

### 9/30/12

### Portfolio Profile

(\$ Millions)

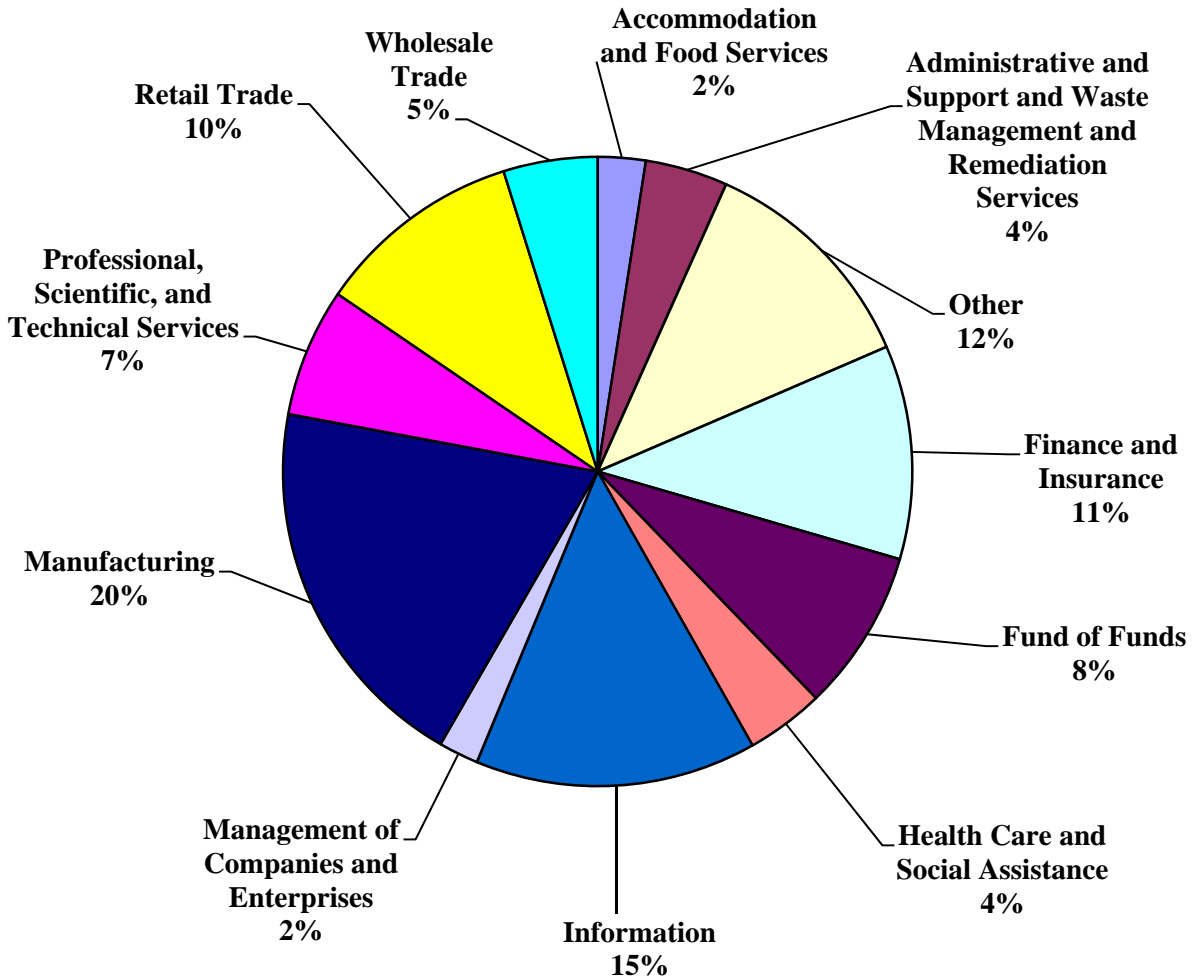
<u>Asset Type</u>	<u>Reported Value</u>	<u>Outstanding Commitment</u>	<u>Total Exposure</u>
Buyout	\$ 5,710	\$ 2,713	\$ 8,423
Venture Capital	1,124	276	1,400
Special Situations	2,096	1,014	3,110
Fund of Funds	517	217	734
Hedge Funds - Equity	38	-	38
Liquidation Portfolio	417	9	426
Active Small Cap - Stock Dist	14	-	14
<b>Total Alternative Equities</b>	<b>\$ 9,916</b>	<b>\$ 4,229</b>	<b>\$ 14,145</b>
Mezzanine Debt	\$ 266	\$ 237	\$ 503
Special Situations	96	21	117
Hedge Funds - Fixed Income	113	-	113
Cash	184	-	184
<b>Total Alternative Fixed Income</b>	<b>\$ 659</b>	<b>\$ 258</b>	<b>\$ 917</b>
<b>Total Alternative Investments</b>	<b>\$ 10,575</b>	<b>\$ 4,487</b>	<b>\$ 15,062</b>



# SMRS

## Alternative Investments 9/30/12

### Investments by Industry



These numbers are based on the most recent available General Partner Data; primarily 06/30/2012 and are subject to change.

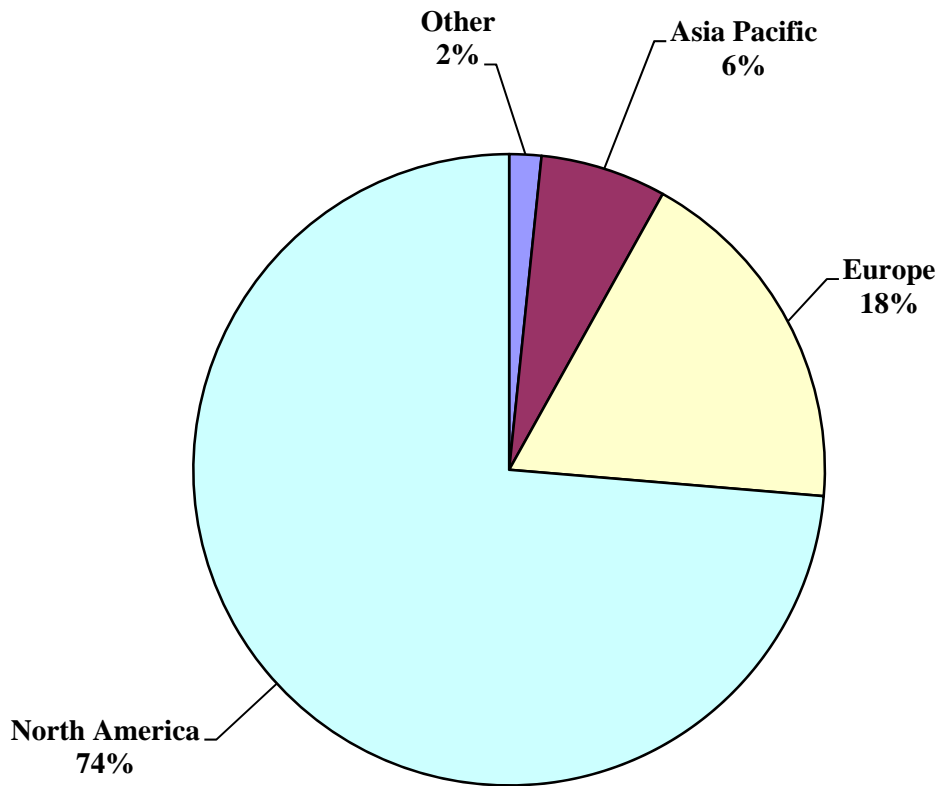


# **SMRS**

## **Alternative Investments**

### **9/30/12**

#### **Investments by Region**



These numbers are based on the most recent available General Partner Data; primarily 06/30/2012 and are subject to change.

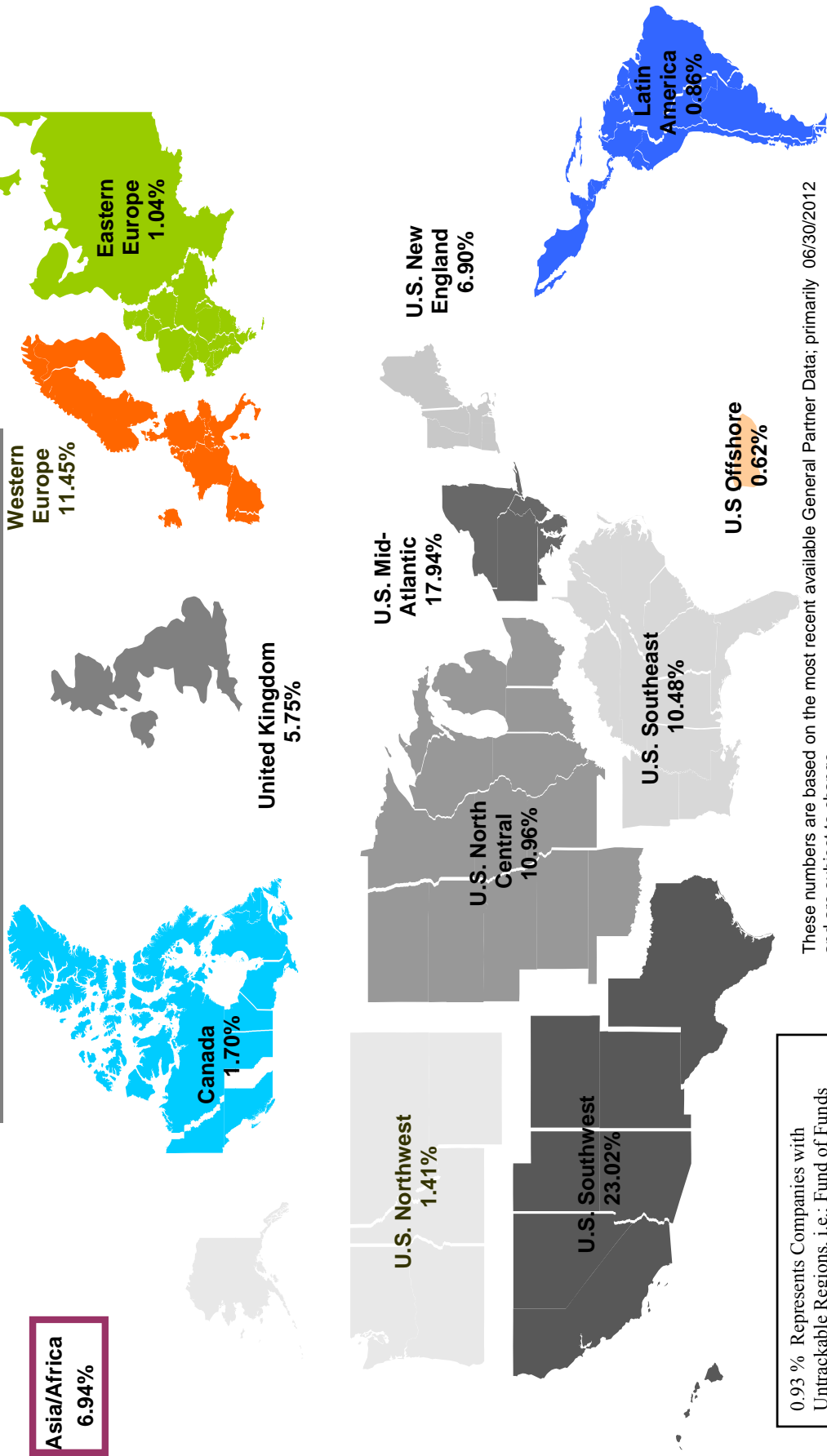


# SMRS

## Alternative Investments

9/30/12

### Investments by Region



0.93 % Represents Companies with Untrackable Regions, i.e.; Fund of Funds

These numbers are based on the most recent available General Partner Data; primarily 06/30/2012 and are subject to change.





# SMRS

## Alternative Investments

### 9/30/12

### Portfolio by Asset Strategy

(\$ Millions)

<u>Investment Fund Types</u>	<u>Reported Value</u>	<u>Outstanding Commitment</u>	<u>Total</u>	<u>Pct</u>
Large Buyout	\$ 3,523	\$ 1,721	\$ 5,244	35%
Small Middle Market Buyout	2,187	992	3,179	21%
<b>Buyout Total</b>	<b>\$ 5,710</b>	<b>\$ 2,713</b>	<b>\$ 8,423</b>	<b>56%</b>
Early Stage Venture Capital	\$ 466	\$ 117	\$ 583	4%
Late-Stage Venture Capital	187	76	263	2%
Multi-Stage Venture Capital	471	83	554	4%
<b>Venture Capital Total</b>	<b>\$ 1,124</b>	<b>\$ 276</b>	<b>\$ 1,400</b>	<b>10%</b>
Co-Investment Funds	\$ 499	\$ 26	\$ 525	3%
Global Opportunity Funds	710	40	750	5%
Secondary Funds	178	142	320	2%
Distressed	330	214	544	4%
Special Situations	379	592	971	6%
Natural Resources	-	-	-	0%
<b>Special Situations Total</b>	<b>\$ 2,096</b>	<b>\$ 1,014</b>	<b>\$ 3,110</b>	<b>20%</b>
<b>Fund of Funds</b>	<b>\$ 517</b>	<b>\$ 217</b>	<b>\$ 734</b>	<b>5%</b>
<b>Hedge Funds – Equity</b>	<b>\$ 38</b>	<b>\$ -</b>	<b>\$ 38</b>	<b>0%</b>
<b>Liquidation Portfolio</b>	<b>\$ 417</b>	<b>\$ 9</b>	<b>\$ 426</b>	<b>3%</b>
<b>Active Small Cap - Stock Dist.</b>	<b>\$ 14</b>	<b>\$ -</b>	<b>\$ 14</b>	<b>0%</b>
<b>Total Alternative Equities</b>	<b>\$ 9,916</b>	<b>\$ 4,229</b>	<b>\$ 14,145</b>	<b>94%</b>
<b>Mezzanine Debt</b>	<b>\$ 266</b>	<b>\$ 237</b>	<b>\$ 503</b>	<b>3%</b>
<b>Special Situations</b>	<b>96</b>	<b>21</b>	<b>117</b>	<b>1%</b>
<b>Hedge Funds – Fixed Income</b>	<b>113</b>	<b>-</b>	<b>113</b>	<b>1%</b>
<b>Cash</b>	<b>184</b>	<b>-</b>	<b>184</b>	<b>1%</b>
<b>Total Alternative Fixed Income</b>	<b>\$ 659</b>	<b>\$ 258</b>	<b>\$ 917</b>	<b>6%</b>
<b>Total Alternative Investments</b>	<b>\$ 10,575</b>	<b>\$ 4,487</b>	<b>\$ 15,062</b>	<b>100%</b>



# SMRS

## Alternative Investments

### 9/30/12

#### Top 10 Sponsors

(\$ Millions)

<u>Asset Type</u>	<u>Reported Value</u>	<u>Outstanding Commitment</u>	<u>Total</u>
Kohlberg Kravis & Roberts	\$ 788	\$ 329	\$ 1,117
Credit Suisse Group	847	179	1,026
Carlyle Group	485	358	843
Warburg Pincus Capital	635	176	811
Blackstone Capital Partners	394	315	709
Glencoe Capital	597	101	698
Green Equity Investors	386	187	573
TPG Group	420	146	566
Advent International	330	219	549
Apax Partners, Inc.	300	111	411
<b>Top 10 Total Value</b>	<b><u>\$ 5,182</u></b>	<b><u>\$ 2,121</u></b>	<b><u>\$ 7,303</u></b>

#### Cash Weighted Rates of Return\*

<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	-0.80%	1.59%	17.88%	5.77%	16.00%
Venture Capital	3.05%	6.52%	18.42%	7.91%	6.71%
Special Situations	-0.52%	2.07%	16.69%	3.82%	8.62%
Fund of Funds	2.86%	7.29%	11.93%	5.40%	8.59%
Hedge Funds	-3.38%	-7.26%	8.87%	-0.79%	4.62%
Mezzanine Debt	2.07%	11.39%	26.82%	13.81%	11.27%

\*These numbers are based on most recent available General Partner reported data; primarily 06/30/2012 and are subject to change.



# SMRS

## Alternative Investments

### 9/30/12

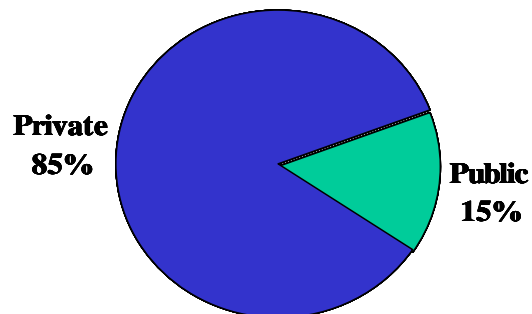
#### Portfolio by Vintage Year

(\$ Millions)

<u>Asset Vintage</u>	<u>Reported Value</u>	<u>Outstanding Commitment</u>	<u>Total Exposure</u>
1986-93	\$ 1	\$ 1	\$ 2
1994	-	-	-
1995	5	1	6
1996	3	2	5
1997	16	12	28
1998	58	21	79
1999	190	60	250
2000	243	56	299
2001	399	56	455
2002	855	28	883
2003	292	25	317
2004	567	61	628
2005	1,133	115	1,248
2006*	3,188	558	3,746
2007	1,596	374	1,970
2008	1,364	891	2,255
2009	149	67	216
2010	125	164	289
2011	113	593	706
2012	79	1,402	1,481
Cash	185	-	185
Act. Small Cap - Stock Dist	14	-	14
<b>Total</b>	<b>\$ 10,575</b>	<b>\$ 4,487</b>	<b>\$ 15,062</b>

\* Liquidation portfolio is 2006 vintage

#### Public/Private Exposure





# SMRS

## Alternative Investments

### 9/30/12

#### Summary of Transactions

(\$ Millions)

<u>Month</u>	<u>Capital Calls*</u>	<u>Distributions Received</u>	<u>Net Cash Flow</u>
October 2011	\$160	\$215	\$55
November	104	209	105
December	<u>182</u>	<u>175</u>	<u>(7)</u>
<b>Total Quarter</b>	<b>\$446</b>	<b>\$599</b>	<b>\$153</b>
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>
<b>Trailing Twelve Month</b>	<b><u>\$1,412</u></b>	<b><u>\$2,443</u></b>	<b><u>\$1,031</u></b>

\* Includes Fees and Expenses Paid Outside of Commitment

#### FX Exposure

	<b>Reported Value</b>	<b>Outstanding Commitment</b>	<b>Total Exposure</b>	<b>Total (USD)</b>
Euro (\$1.286499/ €)	€ 856	€ 238	€ 1,094	1,407
Pound (\$1.614799/ £)	£8	£3	£11	18
Yen (\$0.012853/ ¥)	¥0	¥0	¥0	0

**Net Market Values by Ownership Entity**  
9/30/12

Fund Name	ARV	Unfunded Commitment
Accel Europe I, L.P.	\$ 16,642,053	\$ 1
Accel Europe II	23,267,996	3,300,000
Accel Growth Fund II, L.P.	4,036,984	7,800,000
Accel IX, L.P.	55,301,716	3,000,000
Accel VI, L.P.	3,371,042	-
Accel VII, L.P.	2,585,098	5,000,000
Accel VIII, L.P.	5,142,279	4,782,499
Accel VI-S	5,485,966	652,611
Accel X, L.P.	15,403,513	2,050,000
Accel XI, L.P.	1,887,145	6,080,000
Advent Global Private Equity III	1,247,711	20
Advent Global Private Equity IV	3,253,019	-
Advent Global Private Equity V	120,899,334	10,500,000
Advent International GPE VI-A LP	192,576,396	20,600,000
<b>Advent International GPE VII-B, L.P. **</b>	<b>11,800,000</b>	<b>188,200,000</b>
Affinity Asia Pacific Fund II, L.P.	246,442	5,288,237
Affinity Asia Pacific Fund III, L.P.	179,112,048	33,233,310
APA Excelsior IV, L.P.	335,987	-
APA Excelsior V	419,628	545,625
Apax Europe Fund VI	80,654,622	-
Apax Europe V, L.P.	8,365,863	-
Apax Europe VII, L.P.	154,328,130	8,040,619
Apax Excelsior VI	11,275,776	1,614,434
Apax US VII	44,774,579	491,302
Apax VIII - A, L.P.	-	100,000,000
Arboretum Ventures II	3,084,997	1,550,096
Arboretum Ventures III, L.P.	3,091,006	11,445,000
Ares Corporate Opportunities Fund II	55,624,676	12,643,750
Ares Corporate Opportunities Fund III, LP	71,473,881	36,585,972
<b>Ares Corporate Opportunities Fund IV, L.P. **</b>	<b>-</b>	<b>100,000,000</b>
ARGUS Capital Partners	142,743	2,813,672
Austin Ventures VIII, L.P.	17,315,985	-
Avenue International Ltd	112,555,826	-
Avenue Special Situations Fund IV, L.P.	2,089,870	-
Avenue Special Situations Fund V, L.P.	8,201,750	-
Avenue Special Situations Fund VI (B), L.P.	44,979,140	4,645,568
Axiom Asia Private Capital Fund III, L.P.	-	35,000,000
Banc Fund VI	19,680,713	-
Banc Fund VII	25,464,196	-
Banc Fund VIII	12,453,639	8,600,000
Battery Ventures V, L.P.	358,560	-
Battery Ventures VI, L.P.	6,464,042	-
Battery Ventures VII, L.P.	11,677,532	755,556
Battery Ventures VIII	30,063,558	701,800
BC European Capital IX	16,530,024	79,031,563
BC European Capital VII, L.P.	2,739,306	-
BC European Capital VIII, L.P.	144,645,792	15,090,633

**Net Market Values by Ownership Entity**  
**9/30/12**

Fund Name	ARV	Unfunded Commitment
Berkshire Fund IV, L.P.	3,271,849	1,898,016
Berkshire Fund V, L.P.	719,626	1,900,578
Berkshire Fund VI, L.P.	45,294,442	5,421,521
Berkshire Fund VII, L.P.	109,677,472	25,852,718
Berkshire Fund VIII, L.P.	12,693,018	110,810,434
Blackstone Capital Partners IV	110,615,160	6,324,456
Blackstone Capital Partners V	216,292,259	24,480,657
Blackstone Capital Partners VI, LP	37,205,656	260,506,302
Blackstone Capital Partners V-S	20,678,943	712,401
Blackstone Mezzanine Partners	8,475,677	14,141,621
Blackstone Partners III, L.P.	926,647	9,190,781
Bridgepoint Europe IV	47,927,064	24,750,560
Brockway Moran & Partners Fund III	11,731,957	4,745,030
Carlyle Asia Fund	10,696,661	5,278,440
Carlyle Europe Partners	115,911	436,625
Carlyle Europe Partners II	29,468,460	4,771,732
Carlyle Europe Partners III	95,303,419	27,051,450
Carlyle Partners II, L.P.	3,993,032	-
Carlyle Partners III, L.P.	2,833,243	14,184,834
Carlyle Partners IV, L.P.	148,407,676	16,006,113
Carlyle Partners V L.P.	194,244,005	115,724,755
<b>Carlyle Partners VI, L.P. **</b>	<b>-</b>	<b>175,000,000</b>
Castle Harlan Partners IV	12,784,706	5,647,298
Castle Harlan Partners V	9,006,483	62,140,100
CCMP Capital Investors II	137,583,970	15,987,371
Clarus Life Sciences II, L.P.	19,891,178	20,065,000
Clarus Lifesciences I	26,295,871	4,079,460
Clearstone Venture Partners (idealab)	356,700	-
Clearstone Venture Partners II (idealab)	3,749,100	-
Clearstone Venture Partners III	22,193,900	1,612,000
CMEA Ventures VI	13,268,233	2,450,000
CMEA Ventures VII, L.P.	22,875,708	9,600,000
Coller International Partners III, L.P.	1,357,390	2,400,000
Coller International Partners IV	29,901,627	14,000,000
Coller International Partners V, L.P.	126,763,614	45,100,000
Coller International Partners VI, L.P.	20,199,742	80,853,288
<b>Crescent Mezzanine Partners VI, L.P. **</b>	<b>11,212,694</b>	<b>63,787,306</b>
CSFB Fund Co-Investment Program	1	241,260
CSG / DLJ Fund Program II	112,154,273	23,135,911
CSG Fund Investment Program III - 2004	110,335,852	12,204,866
CSG Fund Investment Program III - 2006	108,132,870	41,199,756
CSG Fund Investment Program V, L.P.	62,983,622	56,374,251
<b>CSG Fund Investment Program VI, L.P. **</b>	<b>-</b>	<b>35,000,000</b>
CSG Seasoned Primary Fund Investment Program	416,843,630	9,152,792
DLJ Fund Investment Program I	36,431,829	1,996,943
DLJ Investment Partners II	933,365	9,910,342
DLJ Investment Partners III	29,614,803	81,869,217
DLJ Merchant Banking Partners III, L.P.	21,415,697	3,062,365
DLJ Merchant Banking Ptrs II, L.P.	2,303,289	1,856,746
Doughty Hanson & Co IV	125,383,253	1,981,764

**Net Market Values by Ownership Entity**  
**9/30/12**

Fund Name	ARV	Unfunded Commitment
Doughty Hanson & Co V	110,193,183	36,520,461
Doughty Hanson Co. III L.P.	5,326,709	3,102,822
EDF Ventures III	5,213,012	251,088
Energy Investors III	18,878	-
Essex Woodlands Health IV	1,499,204	-
Essex Woodlands Health V	5,948,562	-
Essex Woodlands Health Ventures Fund VIII	40,160,830	25,125,000
Essex Woodlands Health VI	14,081,377	1,312,500
Essex Woodlands Health VII	58,988,706	7,500,000
FirstMark Capital Fund II (fka: Pequot PEFII)	1,801,909	-
FirstMark Capital III (fka: Pequot PEFIII)	11,996,543	272,000
FirstMark Capital IV (fka: Pequot PEFIV)	35,994,201	3,961,386
Flagship Ventures Fund 2004	22,645,462	-
Flagship Ventures Fund 2007, L.P.	48,367,796	4,425,000
Flagship Ventures Fund IV, L.P.	4,752,651	10,950,000
Fox Paine Capital Fund II, LP	19,134,063	16,292,867
Frontenac VII	9,793	-
Frontenac VIII	8,134,970	1,800,000
Glencoe Capital Michigan Opportunities Fund, LP	81,916,642	69,041,927
Glencoe Capital Partners II	7,074,883	355,381
Glencoe Capital Partners III	9,155,933	6,206,254
Glencoe Stockwell Fund	380,863,302	-
Glencoe Stockwell Fund II, L.P.	118,035,894	25,893,984
Globespan Capital Partners IV (Jafco)	17,211,268	875,000
Globespan Capital Partners V, LP	91,481,514	9,375,000
Green Equity Investors III	9,303,369	9,112,215
Green Equity Investors IV	109,062,451	1,136,036
Green Equity Investors V	267,842,034	51,440,282
<b>Green Equity Investors VI, L.P. **</b>	<b>-</b>	<b>125,000,000</b>
Grotech Partners V	805,304	-
Grotech Partners VI	12,857,441	-
GSO Capital Opportunities Fund II, L.P.	8,279,021	32,756,110
H.I.G. Bayside Debt & LBO Fund II, LP	10,115,037	9,993,557
H.I.G. Brightpoint Capital Partners II	37,845,529	-
H.I.G. Capital Partners IV, L.P.	16,094,375	8,874,167
H.I.G. Europe Capital Partners L.P.	20,072,640	10,163,342
HarbourVest Int'l II Partnership	242,494	799,999
HarbourVest Int'l III Direct	4,869,899	1,000,000
HarbourVest Int'l III Partnership	7,567,320	1,200,000
HarbourVest IV Partnership Fund LP	267,098	600,000
HarbourVest Partners V - Direct Fund LP	512,915	-
HarbourVest V Partnership	1,770,161	300,000
HarbourVest VI - Direct Fund LP	7,845,895	750,000
HarbourVest VI Partnership	39,852,921	2,750,000
Healthcare Venture V	1,183,707	-
Healthcare Venture VI	881,633	-
Healthcare Venture VII	6,046,057	487,500
Healthcare Venture VIII	20,081,538	10,300,000
InterWest Partners IX	11,995,690	3,200,000
JAFCO America Technology Fund III	1,457,844	-

**Net Market Values by Ownership Entity**  
9/30/12

Fund Name	ARV	Unfunded Commitment
JP Morgan Chase 1998 Pool Participation Fund	3,242,493	1,604,605
JP Morgan Chase 1999/2000 Pool Participation Fund	3,264,234	4,045,214
JP Morgan Partners Global Investors	34,126,757	3,188,546
JPMorgan Global Investors Sell-down	26,317,293	5,599,798
Kelso Investment Associates VII	85,994,046	6,496,890
Kelso Investment Associates VIII	86,839,923	51,092,176
Khosla Ventures III, L.P.	56,879,838	12,000,000
Khosla Ventures IV, L.P.	15,670,407	35,250,000
KKR 1996 Fund	4,616,992	-
KKR 1996 Secondary Fund	557,059	10,841
KKR 2006 Fund, L.P.	251,509,685	21,080,700
KKR Asia	93,675,605	19,586,000
<b>KKR Asian Fund II, L.P. **</b>	-	<b>50,000,000</b>
KKR China Growth Fund	23,503,649	31,761,000
KKR E2 Investors (Annex) Fund	11,772,718	18,145,079
KKR European Fund II	107,211,482	-
KKR European Fund III	61,333,329	62,817,921
KKR European Fund LP 1	36,930,412	307,605
KKR Millennium Fund	196,524,075	-
KKR North America Fund XI, L.P.	-	125,000,000
Lightspeed Venture Partners VI	12,304,174	3,299,089
Lightspeed Venture Partners VII	30,624,890	2,960,436
Lion Capital Fund I (HME II)	9,222,369	13,010,169
Lion Capital Fund II	47,000,020	7,365,508
Lion Capital Fund III, L.P.	35,043,234	42,288,177
Long Point Capital Fund	19,676	66,927
Long Point Capital Fund II	11,206,247	1,530,630
Matlin Patterson Global Opportunities Partners	31,209	-
MatlinPatterson Global Opportunities Partners II	3,158,148	92,719
MatlinPatterson Global Opportunities Partners III	58,410,036	15,001,073
Menlo Ventures IX, L.P.	15,629,602	-
Menlo Ventures VIII	2,511,586	-
Menlo Ventures X, L.P.	23,843,733	6,000,000
Menlo Ventures XI, L.P.	5,561,428	14,000,000
MeriTech Capital Partners II, L.P.	5,648,080	1,850,000
Meritech Capital Partners III, L.P.	94,761,548	1,200,000
Meritech Capital Partners IV, L.P.	7,566,937	12,000,000
MeriTech Capital Partners, L.P.	2,051,828	6,187,500
<b>Michigan Growth Capital Partners II, L.P. **</b>	-	<b>180,000,000</b>
Michigan Growth Capital Partners, LP	149,721,880	36,228,395
MPM BioVentures III	7,199,985	-
New Leaf Ventures II, L.P.	18,765,504	12,775,000
Nordic Capital VI, L.P.	44,078,577	-
Nordic Capital VII	52,237,103	16,182,663
<b>Nordic Capital VIII, L.P. (Alpha) **</b>	-	<b>51,459,960</b>
North Castle Partners III	5,914,937	559,275
NV Partners II	1,265,228	479,147
Oak Investment Partners X, L.P.	16,327,960	-
Oak Investments Partners IX, L.P.	3,229,532	-
OCM Opportunities Fund VII (B), L.P.	27,967,719	25,250,000



**Net Market Values by Ownership Entity**  
**9/30/12**

Fund Name	ARV	Unfunded Commitment
OCM Opportunities Fund VII, L.P.	25,949,826	-
OCM Opportunities Fund VIII B, L.P.	22,052,153	15,937,500
OCM Opportunities Fund VIII, L.P.	42,088,520	-
OCM Principal Opportunities Fund IV	45,906,833	5,002,377
One Liberty Fund III	887,437	-
One Liberty Fund IV	1,791,130	-
One Liberty Ventures 2000	11,830,547	-
Paine & Partners Capital Fund III, LP	94,435,853	43,113,161
Parthenon Investors II	15,798,875	3,417,779
Parthenon Investors III	62,585,366	8,764,318
Parthenon Investors IV, L.P.	1,890,657	38,109,343
Peninsula Capital Fund III	6,481,264	1,400,000
Peninsula Capital Fund IV	21,461,782	2,201,026
Permira Europe III LP	7,306,126	328,057
Permira Europe IV	106,172,444	10,284,839
Phoenix Equity Partners IV	13,374,194	4,670,533
Primus Capital Fund IV	47,741	500,000
Primus Capital Fund V	16,391,622	712,500
Providence Equity Partners V, L.P.	67,434,640	12,957,560
Providence Equity Partners VI, L.P.	276,146,484	39,136,816
Questor Partners Fund II	14,498,705	5,794,612
RFE Investment Partners VII, LP	23,352,627	1,473,332
RFE Investment Partners VIII, L.P.	1,886,019	27,541,495
RFE IV Venture	491,530	-
RFE V Ventures	65,274	397,091
RFE VI Ventures	9,264	3,211,623
Riverside Micro Cap Fund I, LP	55,189,540	3,094,002
Riverside Micro-Cap Fund II, L.P.	21,510,550	16,517,133
Silver Lake Partners II	18,897,280	3,476,461
Silver Lake Partners III	78,812,340	33,887,416
Sprout Capital IX	2,615,942	-
Sprout Capital VII	216,130	-
Sprout Capital VIII, L.P.	120,876	-
TCW Shared Op Fund III	3,207,799	-
TCW Shared Op Fund IV	10,300,114	4,603,325
TCW Shared Op Fund V	35,430,245	11,723,993
TCW/Crescent Mezzanine	1	-
TCW/Crescent Mezzanine II	1	-
TCW/Crescent Mezzanine Partners III, L.P.	5,146,842	4,552,763
TCW/Crescent Mezzanine Partners IV, L.P.	44,367,352	6,652,698
TCW/Crescent Mezzanine Partners V, LLC	129,724,373	20,005,035
The Huron Fund III, L.P.	23,297,439	10,947,500
The Shansby Group 4	44,419,929	786,292
The Shansby Group 5 (TSG5)	105,617,384	14,766,383
TPG IV (Texas Pacific Group IV)	31,267,987	3,638,891
TPG Partners III, LP	38,458,040	2,087,002
TPG Partners VI, L.P.	167,129,066	97,938,354
TPG V (Texas Pacific Group V)	182,781,799	41,892,388
TSG6, L.P.	1,438,536	123,561,464
Tullis - Dickerson Capital II	6,595,481	-

**Net Market Values by Ownership Entity**  
**9/30/12**

Fund Name	ARV	Unfunded Commitment
Tullis - Dickerson Capital III	9,018,168	-
Unitas Asia Opportunity Fund	222,708	-
Unitas Asia Opportunity Fund II	75,183,869	26,604,144
Unitas Asia Opportunity Fund III	39,388,364	51,662,895
Warburg Pincus Equity Partners, L.P.	9,006,691	-
Warburg Pincus International Partners	33,460,605	-
Warburg Pincus Private Equity IX	205,815,993	-
Warburg Pincus Private Equity VIII, L.P.	62,735,633	-
Warburg Pincus Private Equity X, L.P.	290,807,762	9,300,000
Warburg Pincus Private Equity XI, L.P.	32,812,300	166,500,000
Warburg Pincus Ventures Int'l	408,170	-
Weiss, Peck & Greer V (adm: Opus Capital)	4,592,207	386,240
WestAm COREplus Private Equity QP	13,072,209	2,207,939
WestAm Special Private Equity Partners	10,667,445	2,317,427
Wind Point Partners III	2,854,494	-
Wind Point Partners IV	1,871,487	1,541,518
Wind Point Partners V, L.P.	14,255,322	455,013
Wind Point Partners VI	32,043,684	8,382,764
Wind Point Partners VII	37,808,630	37,077,352
<b>Total Alternative Investments *</b>	<b>\$ 10,376,636,665</b>	<b>\$ 4,487,356,603</b>
Cash	159,228,037	-
Active Small Cap Cash	25,441,611	-
Active Small Cap	13,861,933	-
<b>Grand Total</b>	<b>\$ 10,575,168,245</b>	<b>\$ 4,487,356,603</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**

**DECEMBER 6, 2012**



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

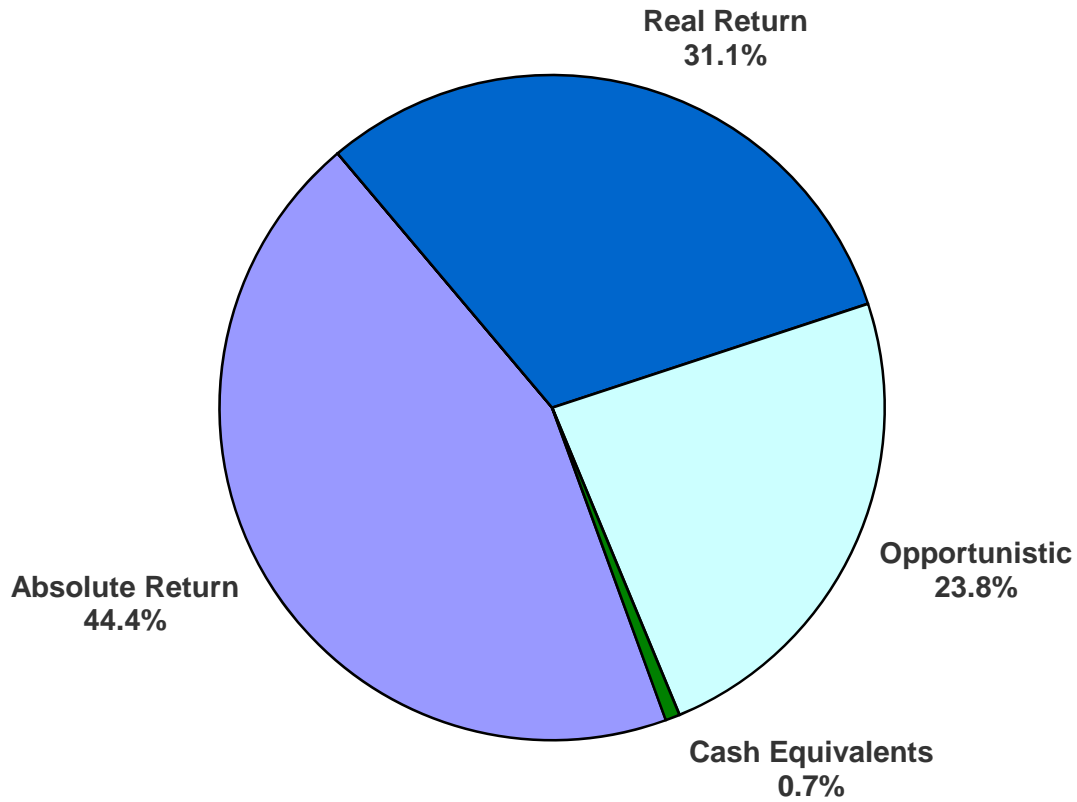




# SMRS

## Absolute and Real Return

### 9/30/12



Market Value in Millions				
	9/30/2012		6/30/2012	
Absolute Return	\$1,905	44.4%	\$1,854	49.1%
Real Return	1,332	31.1%	1,178	31.2%
Opportunistic	1,018	23.8%	715	18.9%
Cash Equivalents	31	0.7%	30	0.8%
<b>Total Investments</b>	<b>\$4,286</b>	<b>100.0%</b>	<b>\$3,777</b>	<b>100.0%</b>

## **EXECUTIVE SUMMARY**

### **Absolute Return**

#### **Portfolio Performance**

- The portfolio outperformed the HFRI Fund of Funds Conservative Index by 123 basis points (bp) for the third quarter.

#### **Strategy Overview**

- Arbitrage - Many event-driven managers generated gains during the quarter, with significant gains from distressed credit portfolios, modest gains from merger arbitrage and mixed performance from equity positions. Fixed income arbitrage generated a gain for the quarter as RMBS continued to appreciate and European yield curves normalized.
- Credit/Distressed - Distressed credit managers delivered gains during the quarter 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 announced QE3.
- Long/Short Equity - Long positions in consumer-oriented technology companies benefitted from evolving customer preferences, while industrial positions realized gains from switching from oil to lower cost natural gas. Short positions detracted from performance during the rally; however, managers continue to maintain their short exposures to companies that are losing market share or face significant cost pressures.
- No new investments were made during the quarter.

### **Real Return and Opportunistic**

- The commodity portfolio outperformed the Dow Jones UBS Commodity Total Return Index by 355 bp for the third quarter. The portfolio managers have various levels of backwardation enhancements which avoided negative roll yield that occurred in many commodities during the period. On a commodity allocation basis, the portfolio outperformance was driven mainly by an overweight position in grains early in the quarter and an overweight position in precious metals and an underweight position in energy in the second half of the quarter.
- During the third quarter, new commitments were made to: SJC Direct Lending Fund II for \$250 million, Highbridge Principal Strategies Specialty Loan Fund III for \$150 million, Fortress MSR Opportunities Fund for \$200 million, and Red Kite Mine Finance Fund II for \$125 million.



**SMRS**

**Absolute and Real Return**

**9/30/12**

**Absolute Return Portfolio Summary**

<b>Advisor/Fund Name</b>	<b>Net Market Value</b>
Aetos*	\$1,044,334,921
Apollo Credit Strategies Fund	122,550,808
Bain Absolute Return Capital	51,407,715
Blackstone Alternative Asset Management*	286,499,339
Brevan Howard Multi-Strategy Fund	101,974,893
Elliott International	9,745,847
EnTrust White Pine*	252,638,454
FrontPoint Multi-Strategy Fund	6,078,091
PSAM - Spartan Fund	29,562,297
<b>Total Market Value</b>	<b>\$1,904,792,365</b>

\* Fund of Funds.

\*\* New commitment made during quarter reported.

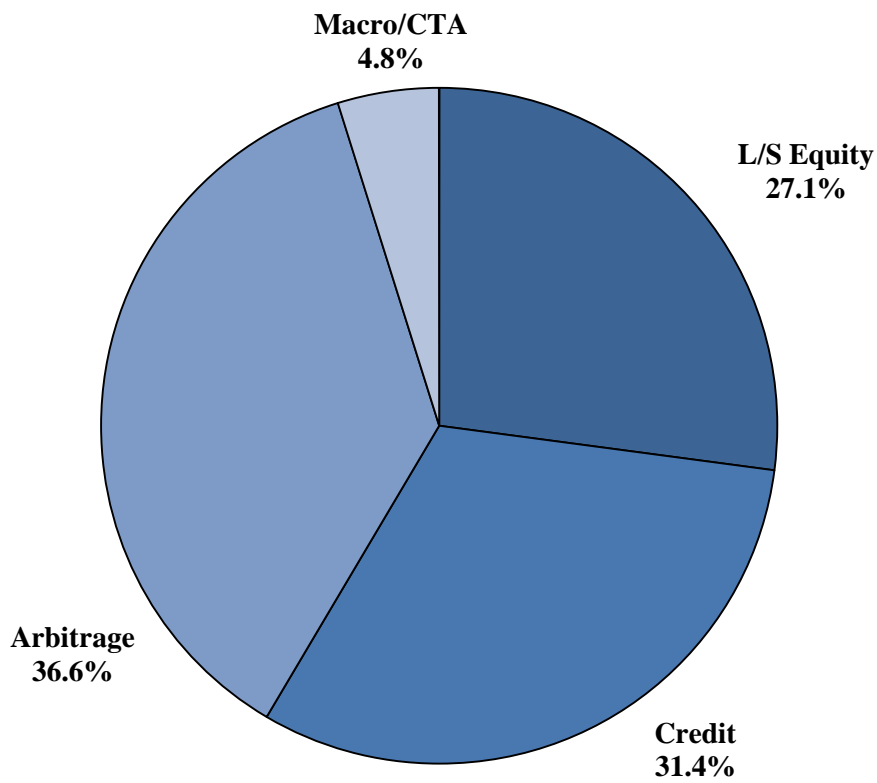




**SMRS**

**Absolute and Real Return  
9/30/12**

**Absolute Return  
Investments By Strategy**



<b>Strategy Breakdown</b>			
<b>Underlying Funds:</b>	<b>103</b>	<b>Median Position Size:</b>	<b>0.48%</b>
<b>Strategies:</b>	<b>4</b>	<b>Average Position Size:</b>	<b>0.97%</b>
<b>Relationships:</b>	<b>9</b>	<b>Largest Position Size:</b>	<b>6.44%</b>

**SMRS****Absolute and Real Return  
9/30/12****Real Return & Opportunistic Portfolio Summary**

<b>Advisor/Fund Name</b>	<b>Net Market Value</b>	<b>Unfunded Commitment</b>
Apollo Credit Fund	265,756,534	
Apollo European Principal Finance Fund	4,561,967	36,572,514
Apollo Structured Credit Recovery Fund II	44,393,626	10,000,000
Commodity Holdings	425,882,413	
Domain - Abernathy Fund I, LLC*	260,199,869	186,183,255
Domain - Fairfield Settlement Partners, LLC*	63,338,244	56,103,763
Domain - Social Network Holdings, LLC*	585,556,588	1,907,928
Emerald Co-invest	44,053,526	
Energy Recapitalization and Restructuring Fund	13,621,570	117,876,418
Fortress MSR Opportunities	-	200,000,000
Galaxie Ave., LLC	101,891,649	
<b>Highbridge Principal Strategies - HPS III**</b>	<b>21,011,186</b>	<b>128,988,814</b>
Hopen Life Sciences Fund II	1,638,444	8,100,000
HPS Senior Loan Fund II	165,832,389	
JP Morgan Global Maritime Fund	1,753,565	115,737,386
KKR Lending Partners	46,644,045	51,799,546
Lakewater Fund I, LLC	129,078,902	52,291,282
<b>Lakewater Fund II, LLC**</b>	<b>123,503</b>	<b>249,876,497</b>
<b>Red Kite Mining Fund**</b>	<b>21,949,848</b>	<b>103,050,152</b>
Renaissance Venture Cap Fund II	710,039	24,250,000
SJC Direct Lending Fund I	152,459,739	
<b>SJC Direct Lending Fund II**</b>	<b>-</b>	<b>250,000,000</b>
<b>Total Market Value</b>	<b>\$2,350,457,645</b>	<b>\$1,592,737,555</b>

\* Fund of Funds.

\*\* New commitment made during quarter reported.



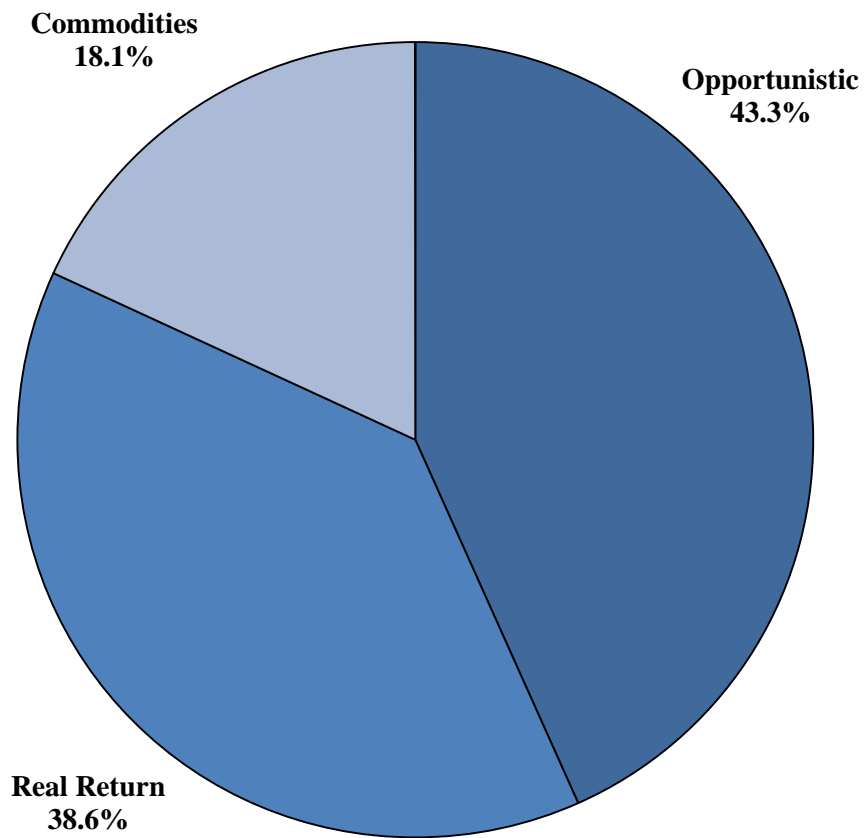
**SMRS**

**Absolute and Real Return**

**9/30/12**

**Real Return & Opportunistic Portfolio**

**Investments By Strategy**



<b>Investment Strategy</b>	
<b>Commodities:</b>	<b>\$425,882,413</b>
<b>Opportunistic:</b>	<b>\$1,017,896,800</b>
<b>Real Return:</b>	<b>\$906,678,432</b>

**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**FIXED INCOME REVIEW**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**DECEMBER 6, 2012**



**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	6.34%	6.97%	7.44%	6.67%	5.83%
Barclays Gov't/Credit	5.66%	6.50%	6.63%	5.93%	5.39%
Rank vs. Peers	89	82	58	64	82

- Long-Term Fixed Income outperformed Barclays' government/credit index over the above time periods by having a higher concentration of corporate bonds than governments. The three and five-year returns were enhanced by the avoidance of financial industry bonds.
- Long-Term Fixed Income performance over the past ten years, as rates were declining, was enhanced by purchases made at the beginning of the period. Many such issues purchased at par or a discount have appreciated 10% or more.

### Strategy Update

- Approximately \$850 million transferred out of Long-Term Fixed Income during the year for asset allocation alternatives. There was no change during the quarter.
- There were no material changes in sub-asset allocation during the year.
- Minimal holdings of financial industry bonds helped Long-Term Fixed Income outperform the Barclay Index.
- Due to the scarcity of secondary issues, most of our purchases have been in the new issue market including such issues as General Dynamics 1% of 2017 or Caterpillar 0.7% of 2015, both rated single A.
- Given the volatility of bond pricing where a 1% rise in interest rates produces an 18% decline in value of a 30-year bond but only a 4.8% decline in a 5-year issue, our strategy has been to focus on intermediate securities of five to ten years.

### Market Environment and Outlook

- The yield curve appears to be approaching a long-term bottom at 2¾ for 30-year, and 1.6% for 10 years. The last time rates were at these levels was the mid 1940's and early 1950's, the time of World War II, and the Korean War.
- Treasury rates have not been as low as current rates in 60 years. Ten-year A-/Baa are yielding a spread to treasuries of +150 to 200 basis points (bp) premium.

- BAA corporates are currently trading at rates 1.4 times that of AAA issues which exceeds all ratios back to 1955, the exception being the spike in BAAs to A 1.65 ratio in 1990.
- For the past five years, the return of the combined portfolio was 7.33% compared to the Barclays Gov/Credit benchmark of 6.63%.
- The modification of the Investment Act to permit below investment grade purchases opens a potential new asset category. At this point, Long-Term Fixed Income is in the early stage of analyzing the asset class.

### **Conclusion**

- As quality spreads narrow and rates increase, the focus will shift from A to AA average quality with maturities of fifteen years from a seven-year average.



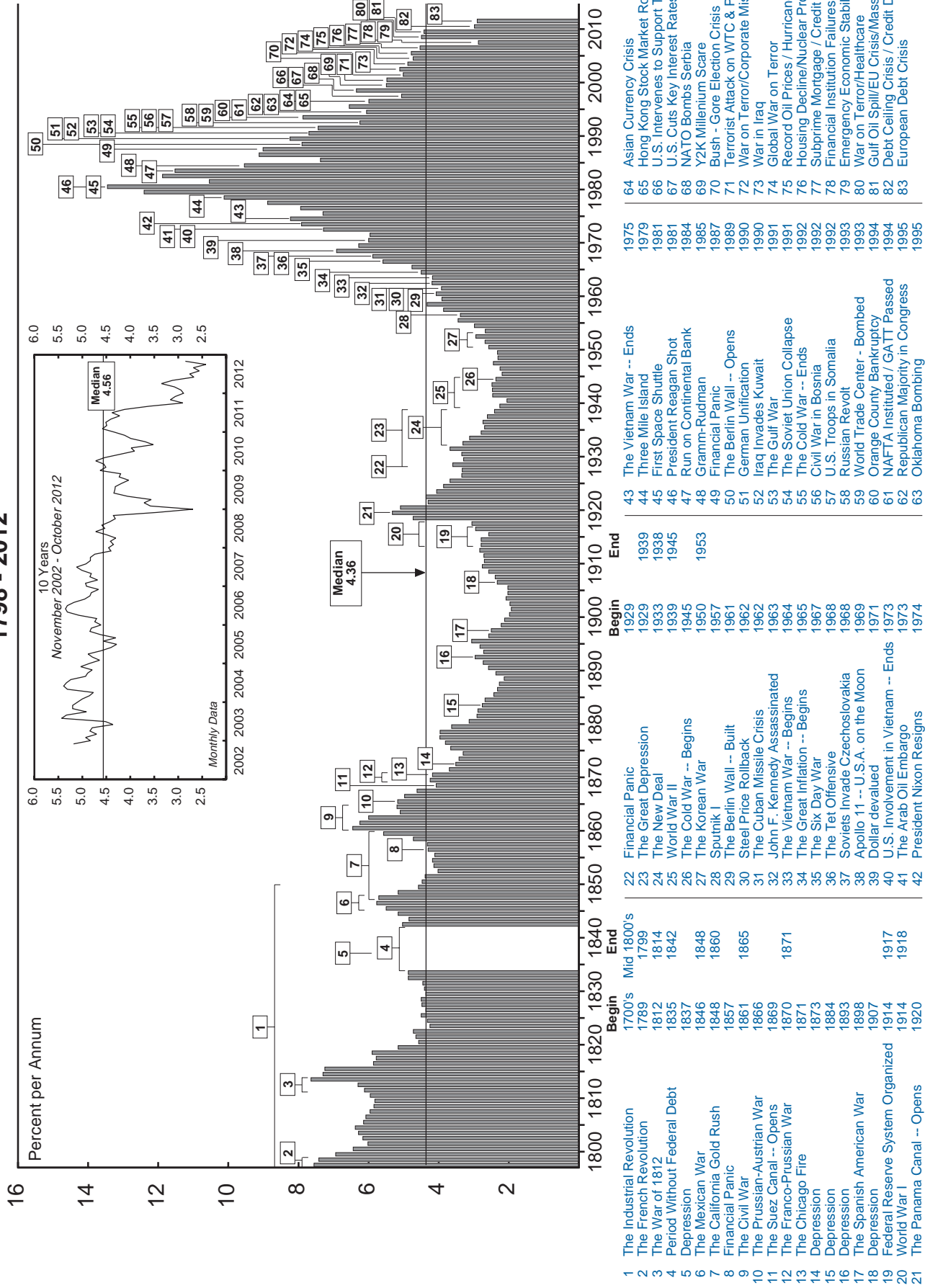
**SMRS**  
**LONG-TERM FIXED INCOME**  
**9/30/12**

	Amount	% of Total
<b>Government</b>		
Internal US Govt Related	\$1,376,345	20.5%
<b>Sub Total</b>	<b>\$1,376,345</b>	
<b>Core</b>		
Ambassador Capital Management	\$55,190	
Dodge & Cox	227,945	
Pyramis	252,325	
Metropolitan West	<u>272,029</u>	
<b>Sub Total</b>	<b>\$807,489</b>	12.0%
<b>Credit</b>		
Internal Investment Grade Corporates Credit	\$3,725,658	
Alliance Bernstein	198,276	
Prudential	<u>427,128</u>	
<b>Sub Total</b>	<b>\$4,351,062</b>	64.7%
<b>Securitized Debt</b>		
Principal Global	\$193,991	
<b>Sub Total</b>	<b>\$193,991</b>	2.9%

**TOTAL**                      **\$6,728,887**                      100.0%



# Long-Term U.S. Government Bond Yields 1798 - 2012\*

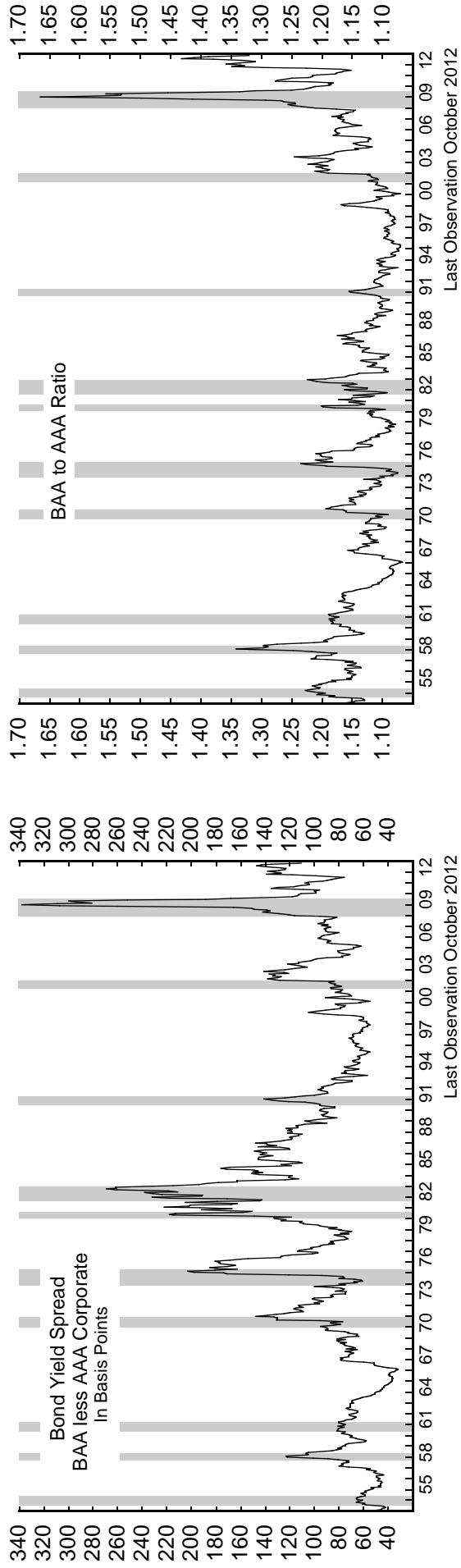
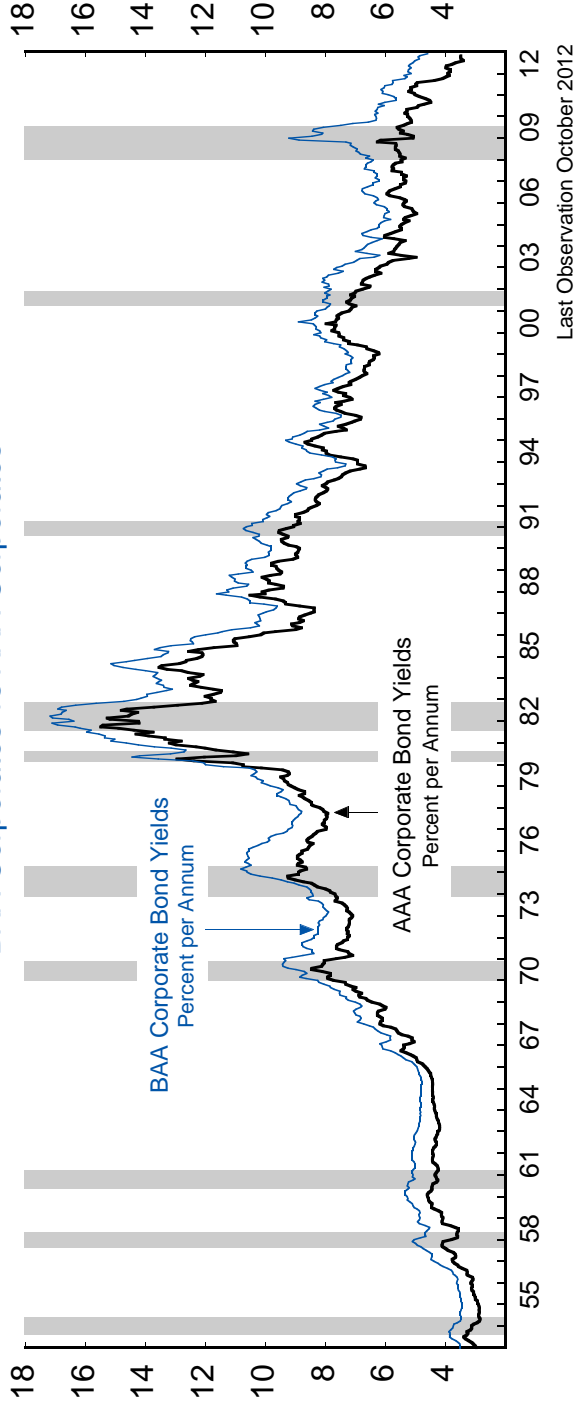


\*Last Observation October 2012

Sources: Federal Reserve Board; Bureau of Economic Analysis; U.S. Department of Commerce; A History of Interest Rates, Sidney Homer; Copyright © 2012 Crandall, Pierce & Company • All rights reserved.

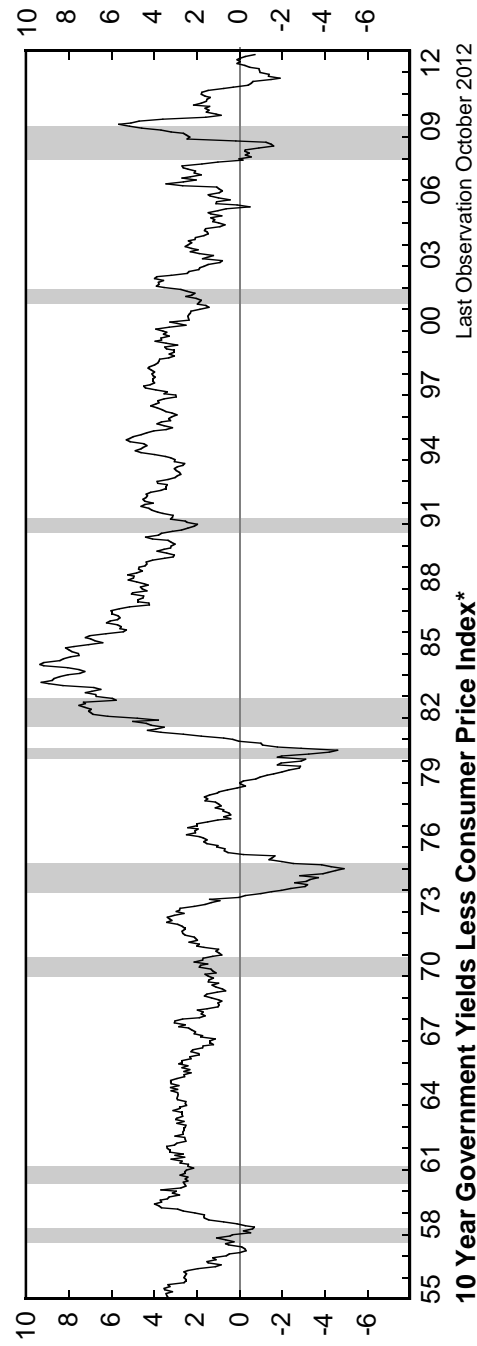
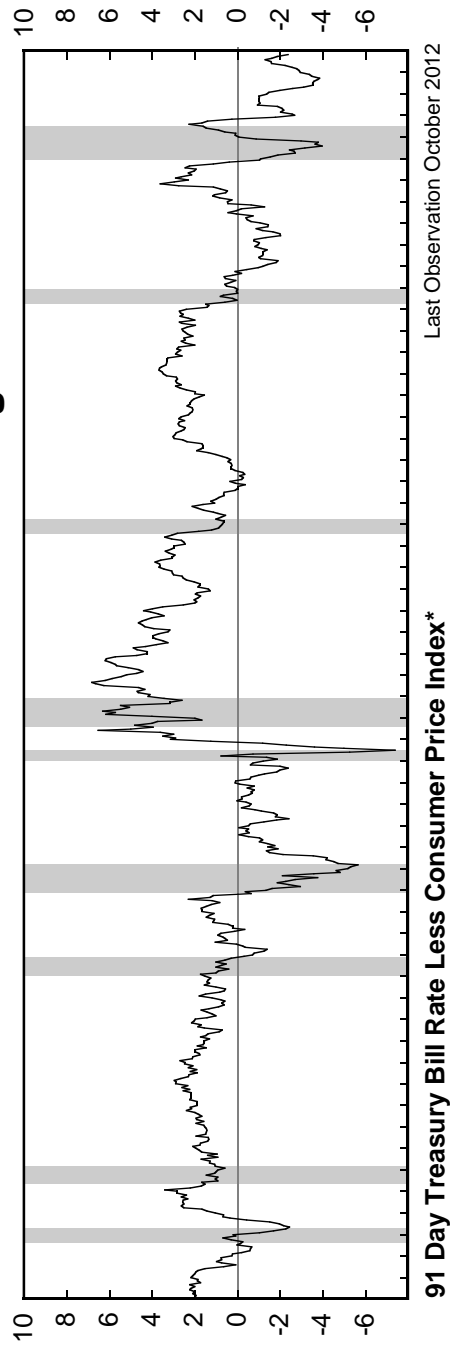
# Bond Risk Premium

BAA Corporates vs AAA Corporates



Shaded areas represent recessionary periods. Sources: Moody's Investors Service • Copyright © 2012 Crandall, Pierce & Company • All rights reserved.

## Real Interest Rates: Short & Long Term



\*CPI data for October is preliminary.

Consumer Price Index = CPI Annual Growth Rate

Shaded areas represent recessionary periods.

Sources: Federal Reserve Board; Bureau of Labor Statistics • Copyright © 2012 Crandall, Pierce & Company • All rights reserved.

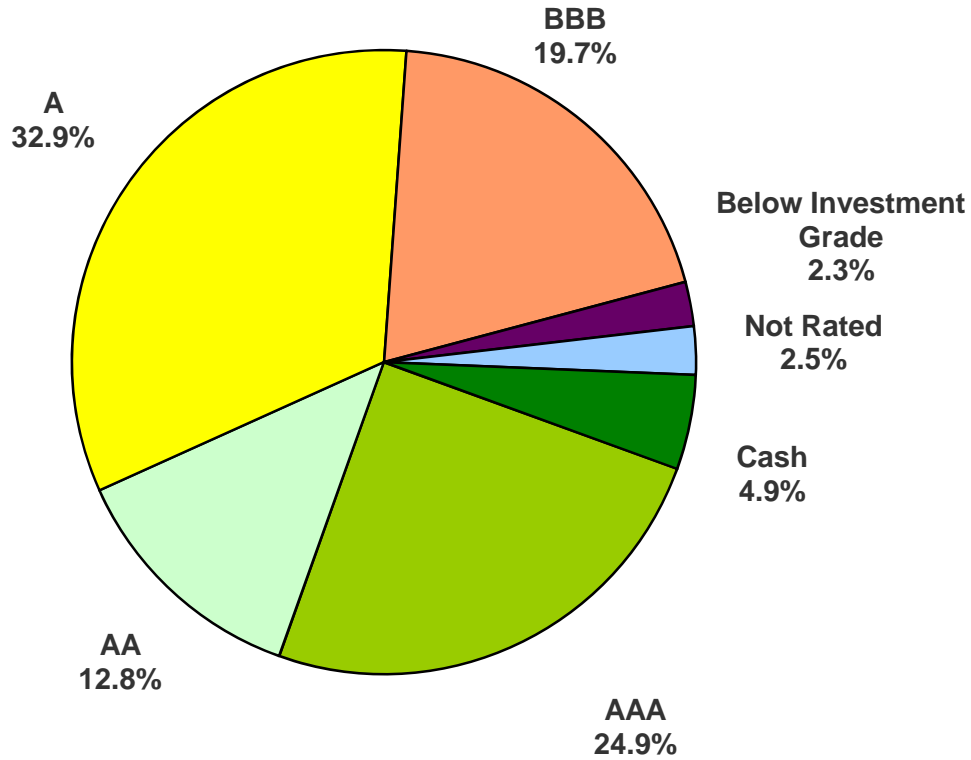


# SMRS

## Fixed Income By Rating

### Total U.S. Government and Corporate Holdings

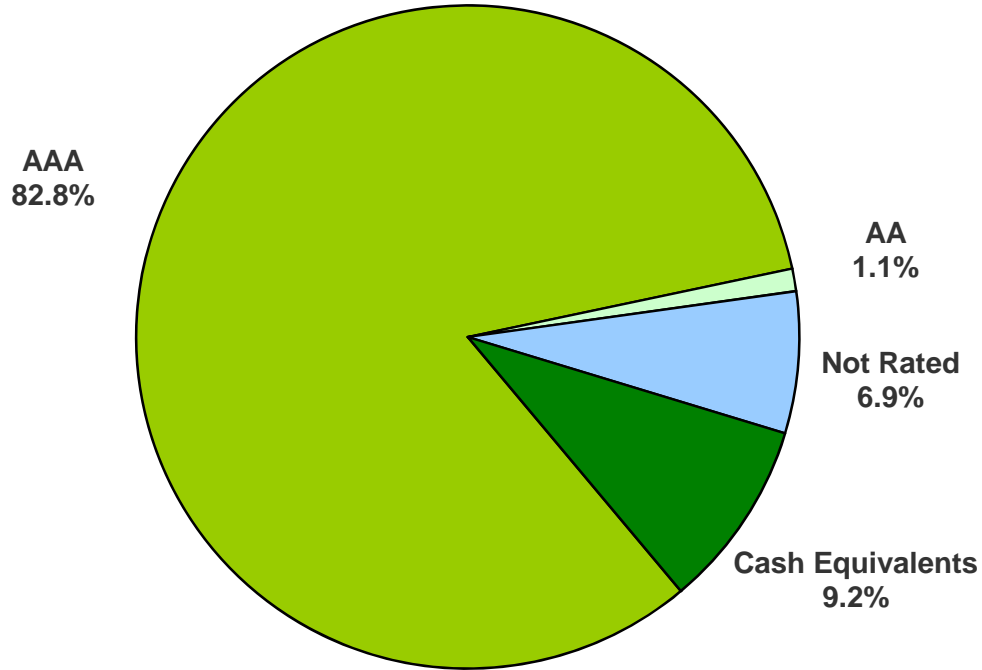
#### 9/30/12



<b>Market Value in Millions</b>				
	<u>9/30/2012</u>		<u>6/30/2012</u>	
AAA	\$1,677	24.9%	\$1,710	26.0%
AA	865	12.8%	810	12.3%
A	2,211	32.9%	2,245	34.1%
BBB	1,324	19.7%	1,236	18.7%
Not Rated	167	2.5%	190	2.9%
Below Investment Grade	157	2.3%	152	2.3%
Cash Equivalents	328	4.9%	247	3.7%
<b>Total Investments</b>	<b>\$6,729</b>	<b>100.0%</b>	<b>\$6,590</b>	<b>100.0%</b>



**SMRS**  
**Fixed Income**  
**U.S. Government Internal Holdings**  
**9/30/12**



<b>Market Value in Millions</b>				
	<u>9/30/2012</u>		<u>6/30/2012</u>	
AAA	\$1,140	82.8%	\$1,197	87.5%
AA	15	1.1%	0	0.0%
Not Rated	95	6.9%	97	7.1%
Cash Equivalents	126	9.2%	73	5.4%
<b>Total</b>	<b>\$1,376</b>	<b>100.0%</b>	<b>\$1,367</b>	<b>100.0%</b>

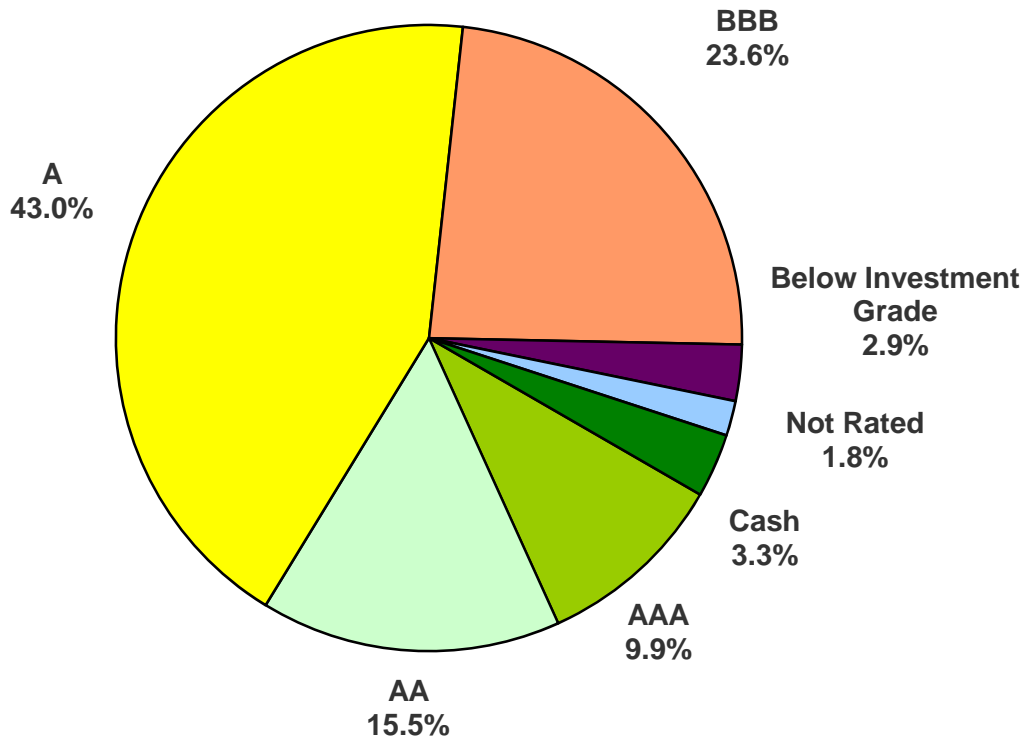


# SMRS

## Fixed Income By Rating

### Corporate Holdings By Rating

#### 9/30/12



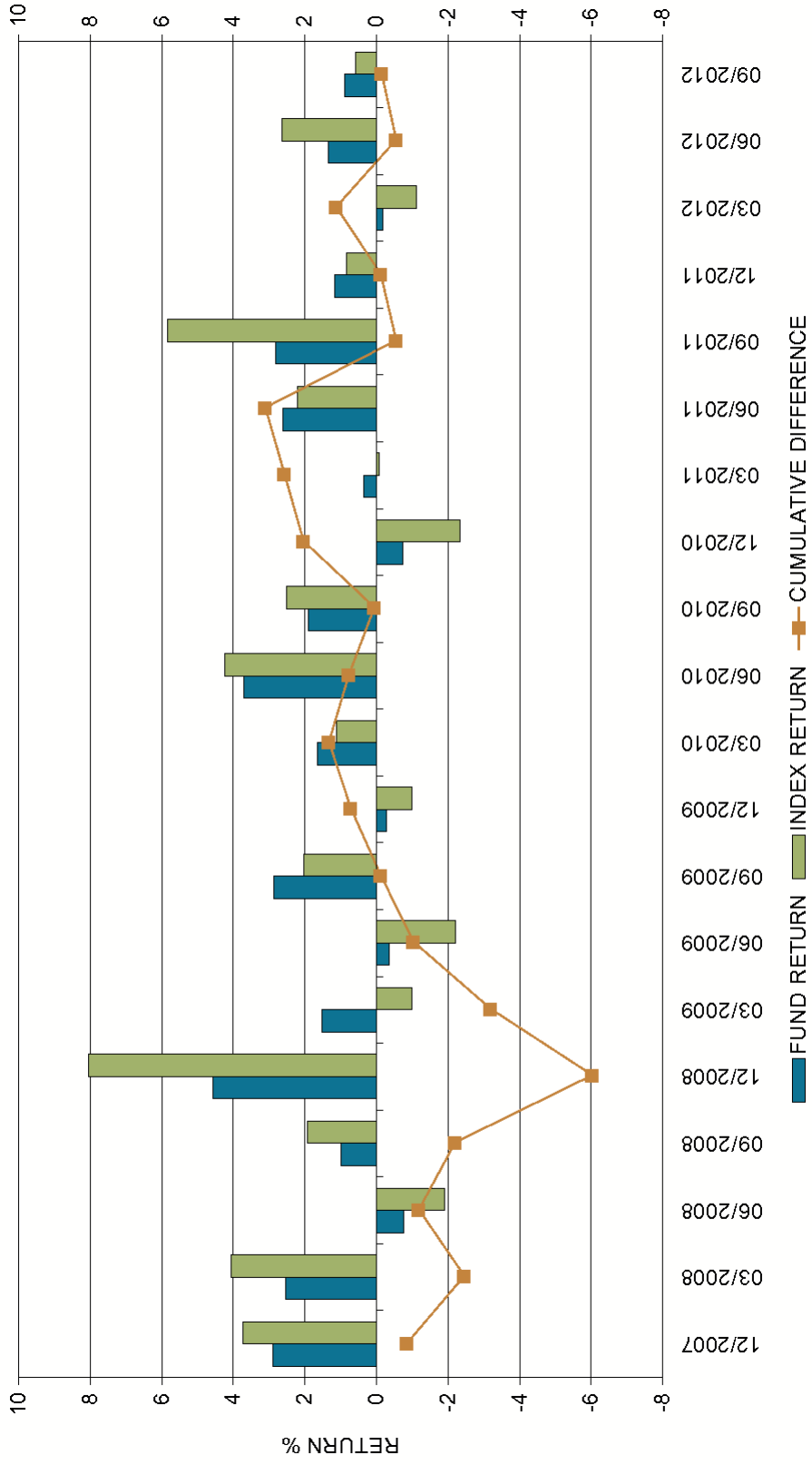
<b>Market Value in Millions</b>				
	<u>9/30/2012</u>		<u>6/30/2012</u>	
AAA	\$537	9.9%	\$516	9.9%
AA	850	15.5%	810	15.5%
A	2,211	43.0%	2,245	43.0%
BBB	1,324	23.6%	1,236	23.6%
Not Rated	72	1.8%	93	1.8%
Below Investment Grade	157	2.9%	152	2.9%
Cash Equivalents	202	3.3%	174	3.3%
<b>Total Investments</b>	<b>\$5,353</b>	<b>100.0%</b>	<b>\$5,226</b>	<b>100.0%</b>



# SMRS

Michigan State Treasury - Supersponsor  
INTERNAL GOVERNMENT FUND  
Index: Barclays US Agg Gov  
PERIODS: September 30, 2007 - September 30, 2012

## CUMULATIVE PERFORMANCE REPORT





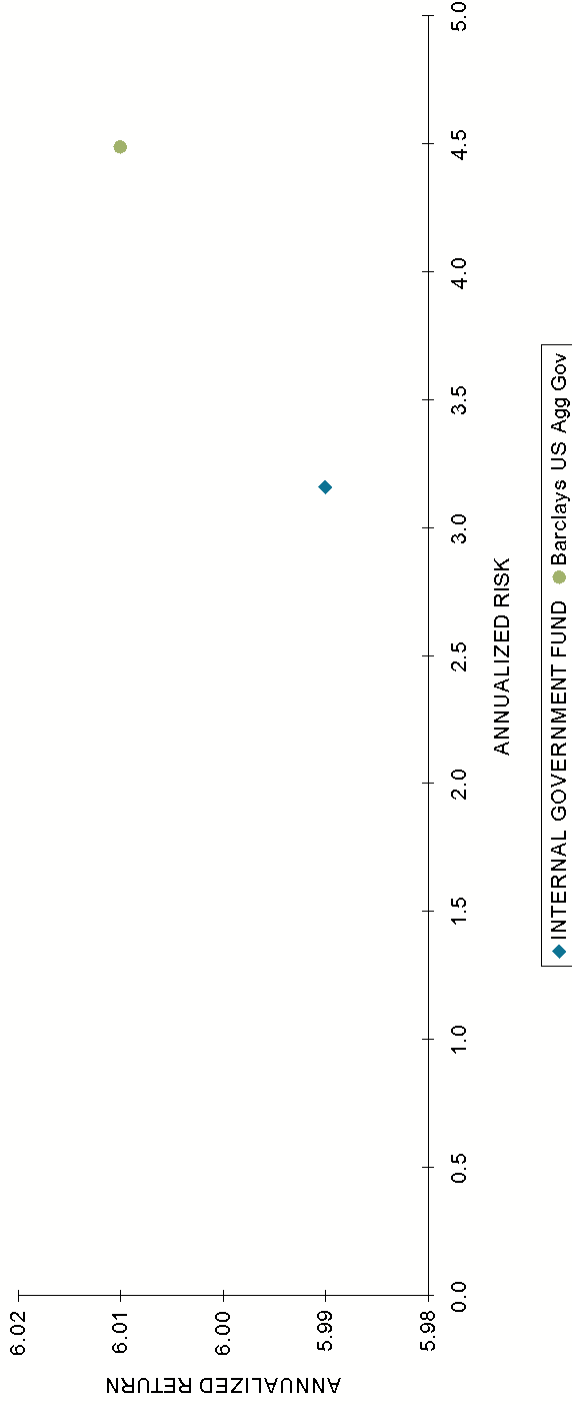
# SMRS

Michigan State Treasury - Supersponsor  
INTERNAL GOVERNMENT FUND

Benchmark: Barclays US Agg Gov

PERIODS: September 30, 2007 - September 30, 2012

## RISK VS. RETURN



### RISK INFORMATION

Portfolio Return	5.99
Benchmark Return	6.01
Return Differences	-0.02
Portfolio Standard Deviation	3.16
Benchmark Standard	4.49
Tracking Error	2.18

### RISK STATISTICS

Historic Beta	0.63
R-squared	0.79
Jensen's Alpha	1.95
Sharpe Ratio	1.67
Treynor Ratio	8.39
Information Ratio	-0.01

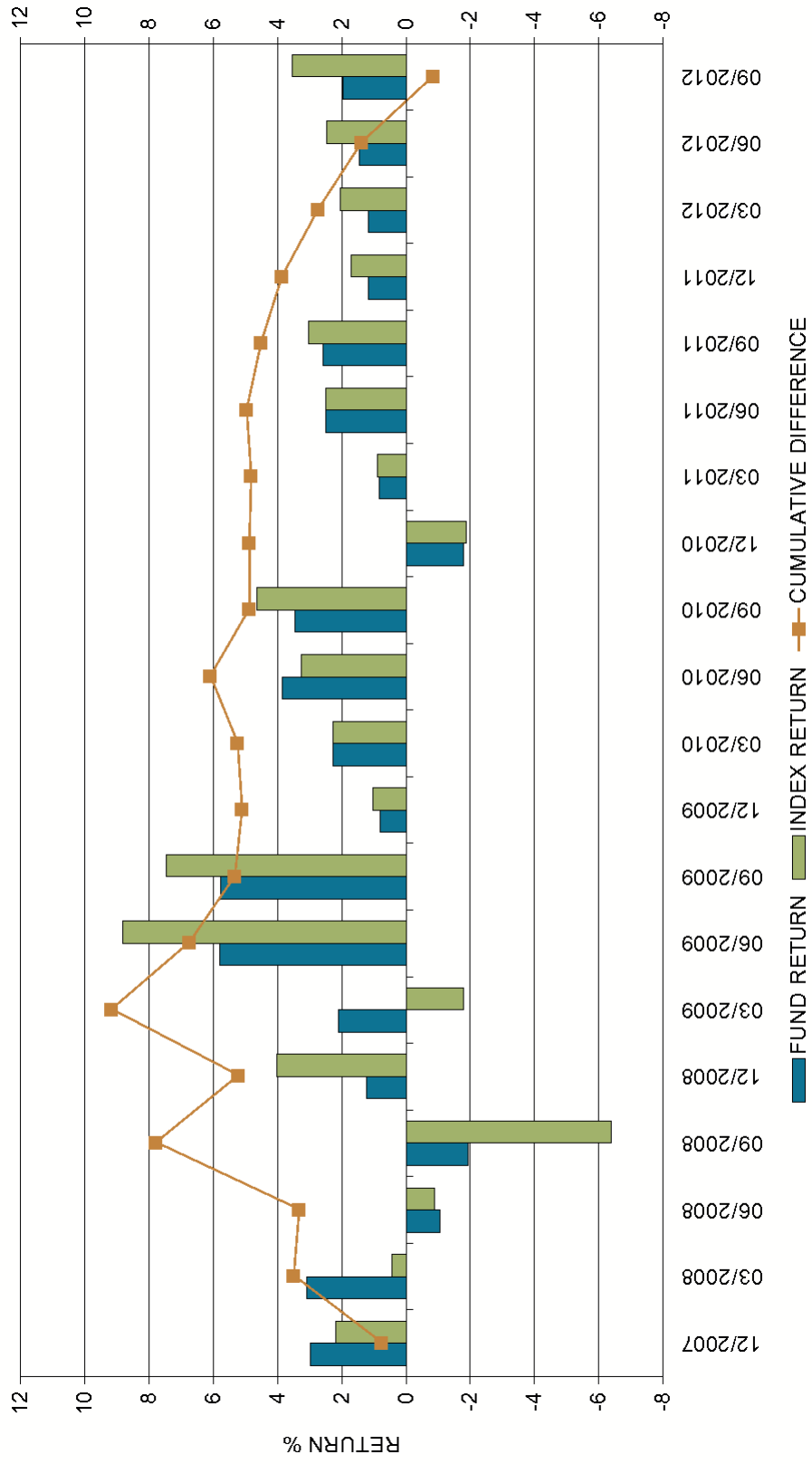




# SMRS

Michigan State Treasury - Supersponsor  
INTERNAL CORPORATE FUND  
Index: Barclays Credit  
Periods: September 30, 2007 - September 30, 2012

## CUMULATIVE PERFORMANCE REPORT

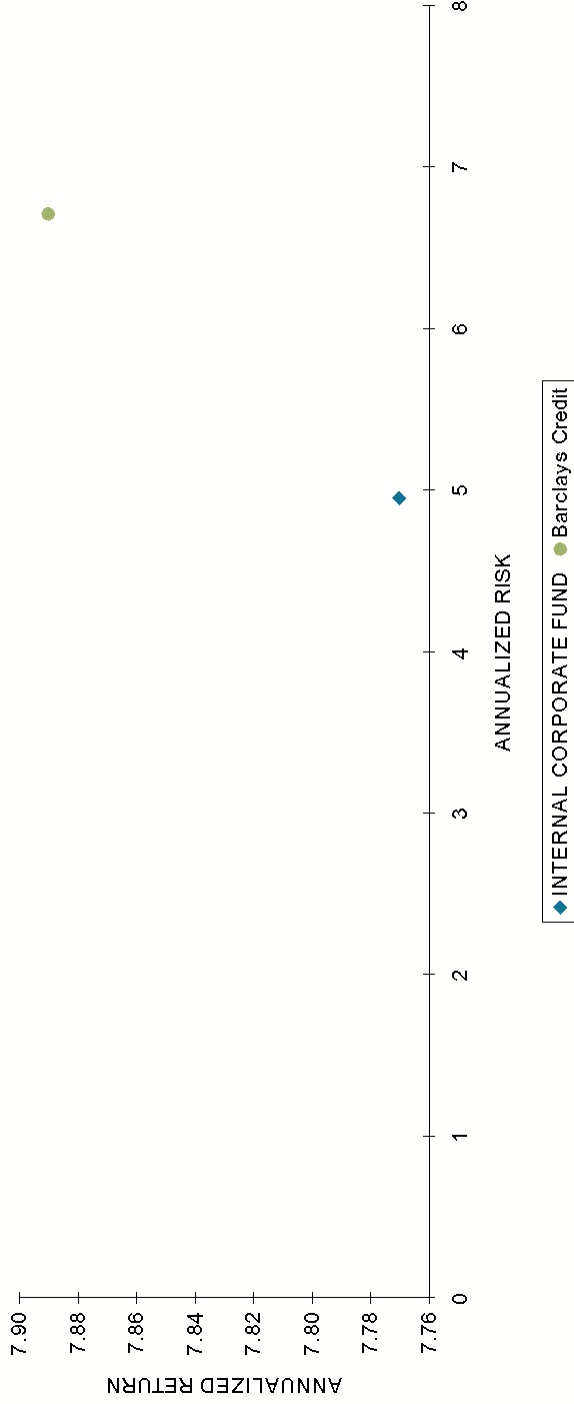




# SMRS

Michigan State Treasury - Supersponsor  
**INTERNAL CORPORATE FUND**  
 Benchmark: Barclays Credit  
**PERIODS: September 30, 2007 - September 30, 2012**

## RISK VS. RETURN



### RISK INFORMATION

Portfolio Return	7.77
Benchmark Return	7.89
Return Differences	-0.12
Portfolio Standard Deviation	4.95
Benchmark Standard	6.71
Tracking Error	3.51

### RISK STATISTICS

Historic Beta	0.64
R-squared	0.75
Jensen's Alpha	2.49
Sharpe Ratio	1.42
Treynor Ratio	11.09
Information Ratio	-0.03



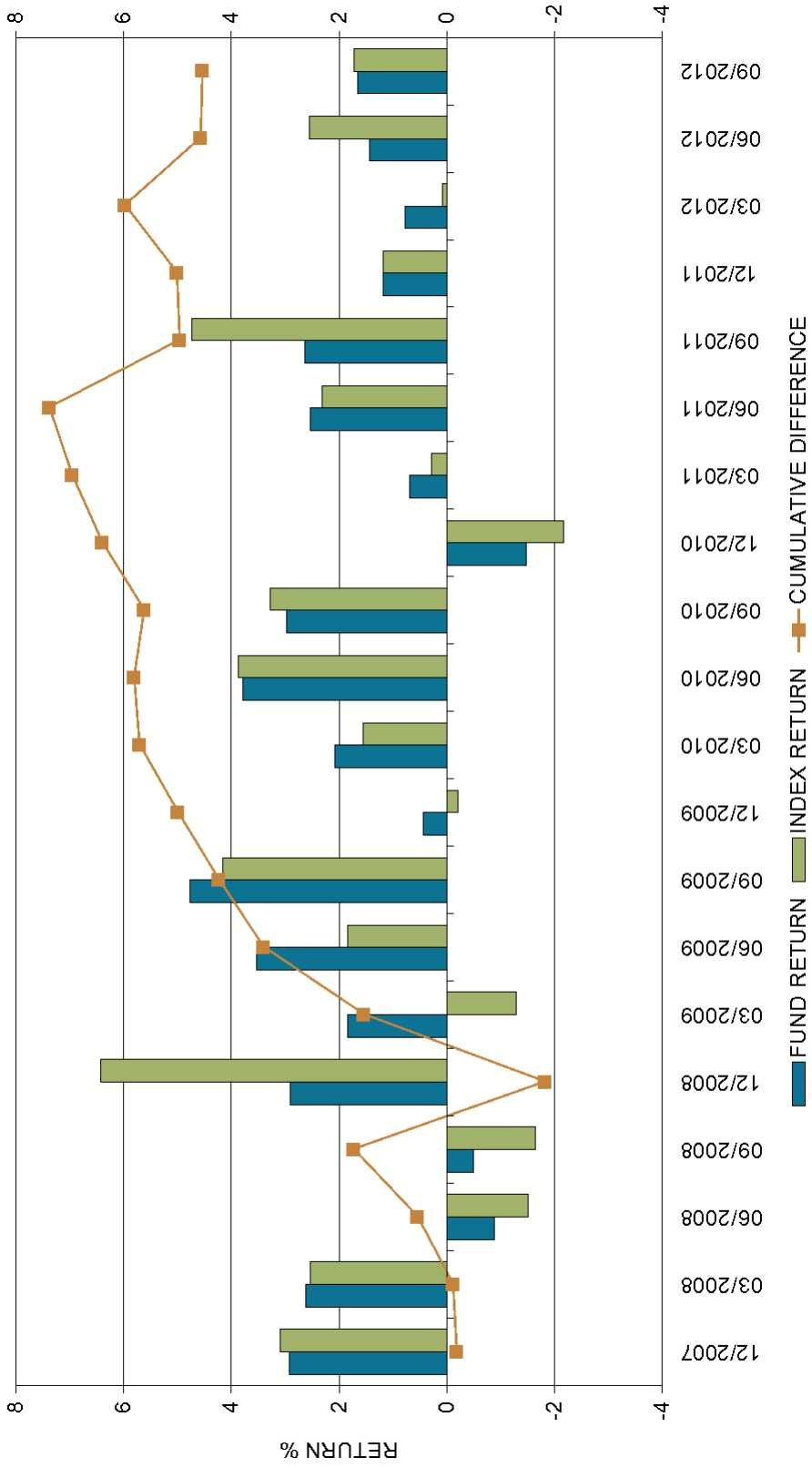
# SMRS

Michigan State Treasury - Supersponsor  
DOMESTIC FIXED INCOME AGGREGATE

Index: Barclays Gov/Credit

PERIODS: September 30, 2007 - September 30, 2012

## CUMULATIVE PERFORMANCE REPORT

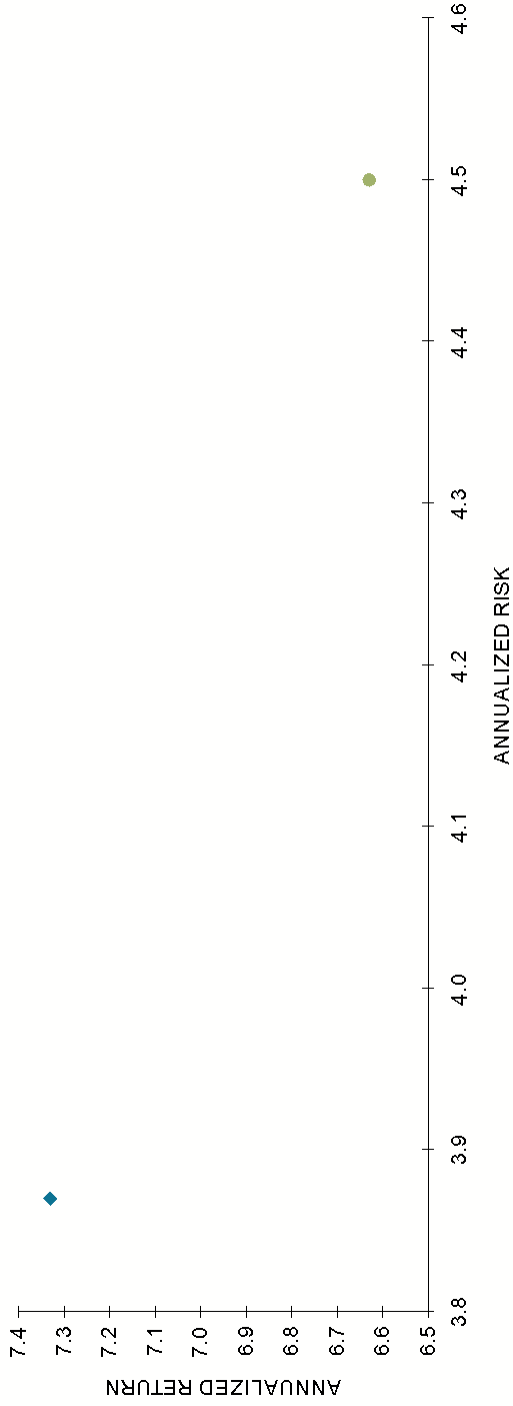




# SMRS

Michigan State Treasury - Supersponsor  
**DOMESTIC FIXED INCOME AGGREGATE**  
Benchmark: Barclays Gov/Credit  
September 30, 2007 - September 30, 2012

## RISK VS. RETURN



◆ DOMESTIC FIXED INCOME AGGREGATE ● Barclays Gov/Credit

### RISK INFORMATION

Portfolio Return	7.33
Benchmark Return	6.63
Return Differences	0.69
Portfolio Standard Deviation	3.87
Benchmark Standard	4.50
Tracking Error	1.98

### RISK STATISTICS

Historic Beta	0.77
R-squared	0.81
Jensen's Alpha	2.03
Sharpe Ratio	1.71
Treynor Ratio	8.53
Information Ratio	0.35



**SMRS**

## Corporate Fixed Income Internal Holdings

### Portfolio Characteristics

Benchmark: Barclays Capital U.S. Credit

**9/30/12**

**6/30/12**

<i>Characteristic</i>	<i>Portfolio</i>	<i>Benchmark</i>	<i>Relative (%)</i>	<i>Portfolio</i>	<i>Benchmark</i>	<i>Relative (%)</i>
Maturity (Yrs)	4.4	10.8	40.7	4.4	10.8	40.7
Maturity (Yrs) w/Cash Equiv.	4.3	10.8	39.8	4.3	10.8	39.8
Duration (Yrs)	3.7	6.7	55.2	3.7	6.7	55.2
Duration (Yrs) w/Cash Equiv.	3.6	6.7	53.7	3.6	6.7	53.7
Coupon (%)	4.8	5.3	90.6	4.8	5.3	90.6
Yield to Maturity (%)	1.9	3.1	61.3	1.9	3.1	61.3
Moody's Quality	A-3	A-3		A-3	A-3	
S&P Quality	A	A-		A	A-	



**SMRS**

## Government Fixed Income Internal Holdings

### Portfolio Characteristics

Benchmark: Barclays Capital Government

**6/30/12**

**9/30/12**

<i>Characteristic</i>	<i>Portfolio</i>	<i>Benchmark</i>	<i>Relative (%)</i>	<i>Portfolio</i>	<i>Benchmark</i>	<i>Relative (%)</i>
Maturity (Yrs)	3.8	6.6	57.6	3.8	6.6	57.6
Maturity (Yrs) w/Cash Equiv.	3.7	6.6	56.1	3.7	6.6	56.1
Duration (Yrs)	3.5	5.2	67.3	3.5	5.2	67.3
Duration (Yrs) w/Cash Equiv.	3.3	5.2	63.5	3.3	5.2	63.5
Coupon (%)	4.3	2.6	165.4	4.3	2.6	165.4
Yield to Maturity (%)	2.3	0.9	255.6	2.3	0.9	255.6
Moody's Quality	AGY	TSY		AGY	TSY	
S&P Quality	AGY	TSY		AGY	TSY	

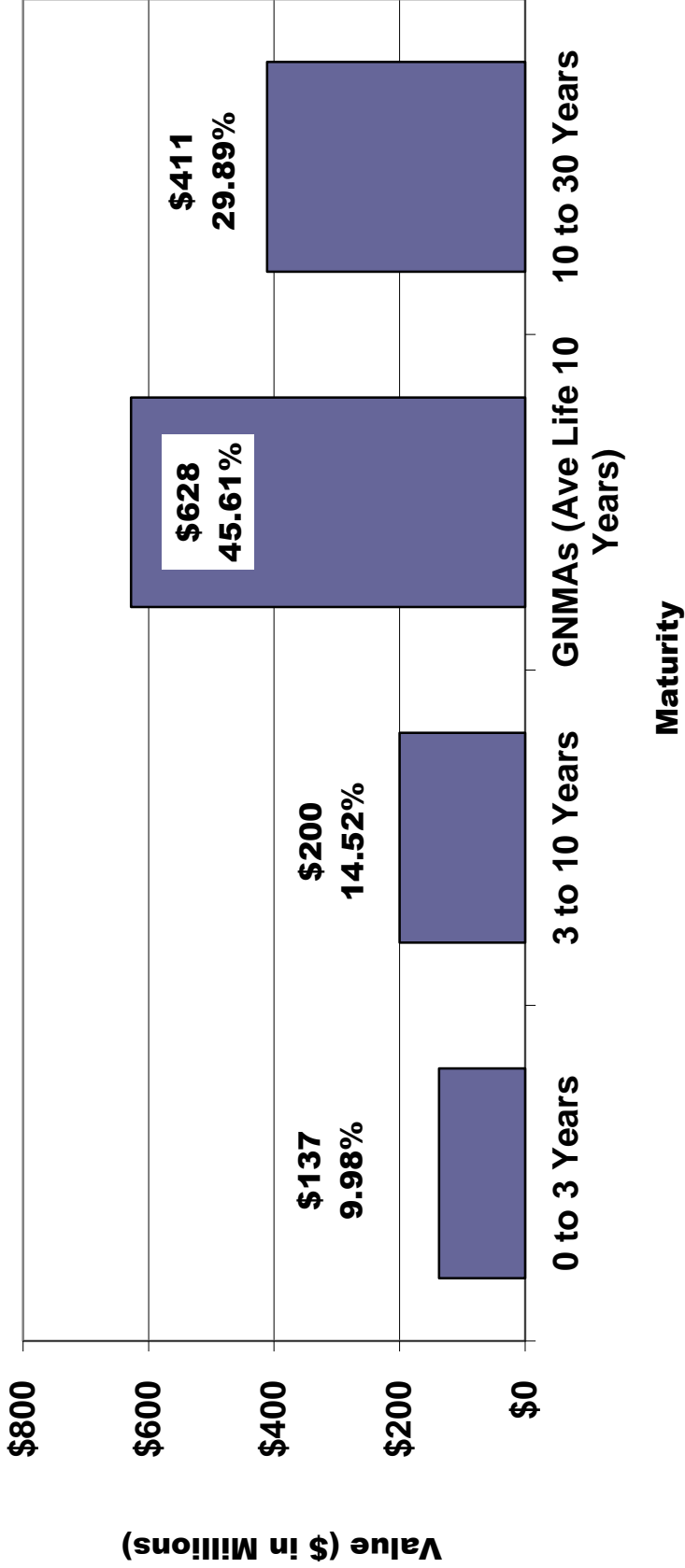


**SMRS**

**Fixed Income Internal Portfolio  
Government Portfolio Maturity Distribution**

As of 9/30/12

**Average Maturity of March 2023  
Total Market Value \$1,376 Million**



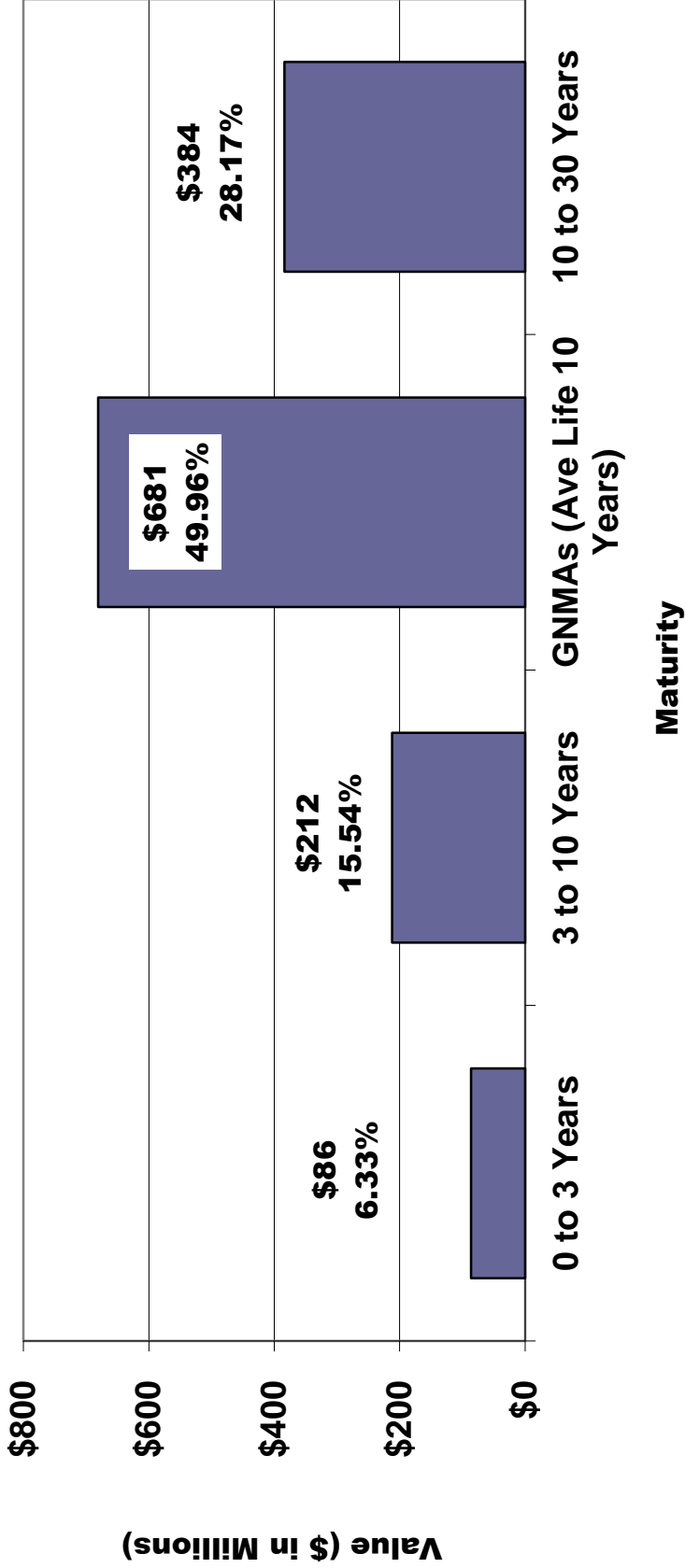


**SMRS**

**Fixed Income Internal Portfolio  
Government Portfolio Maturity Distribution**

As of 6/30/12

**Average Maturity of August 2023  
Total Market Value \$1,363 Million**





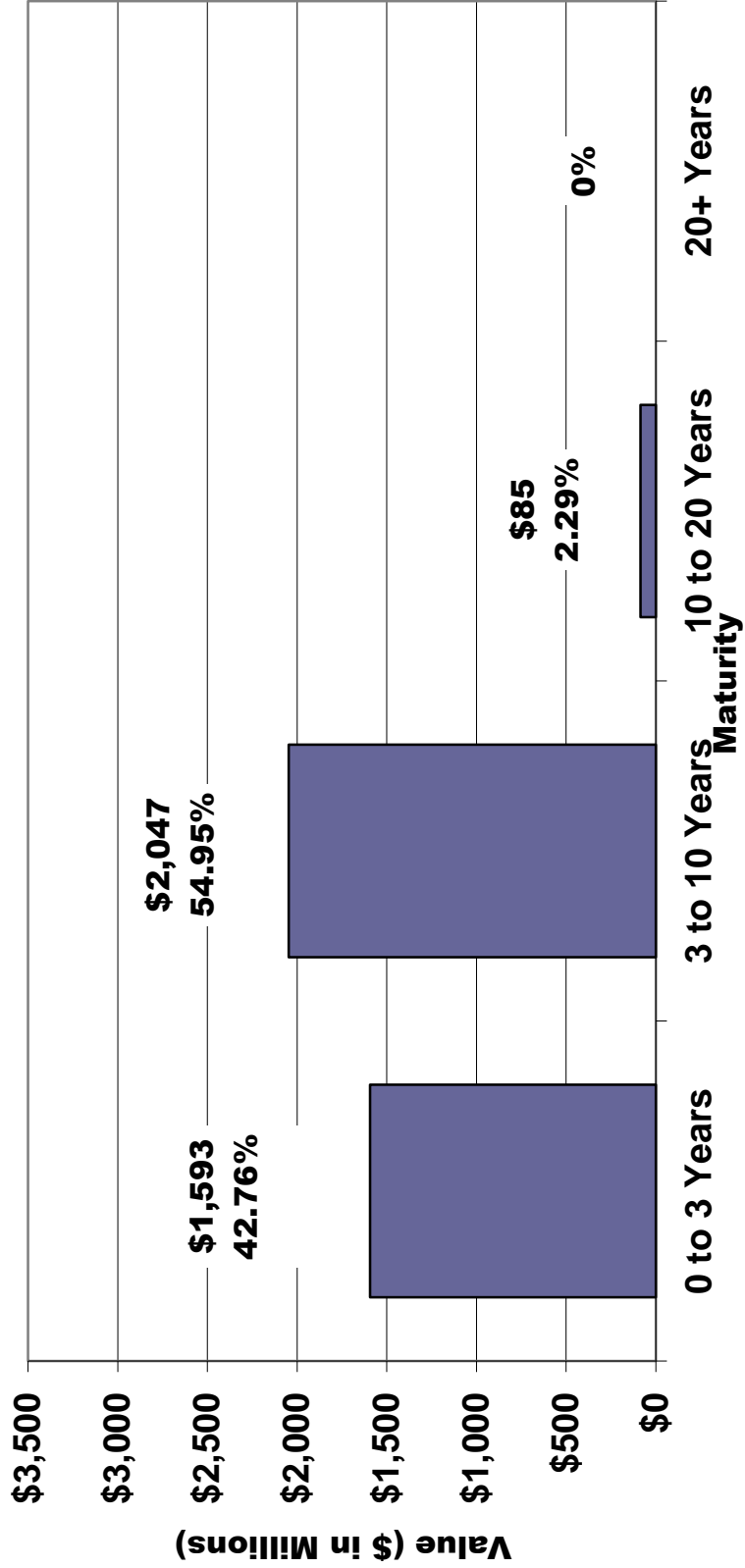


**SMRS**

## **Fixed Income Internal Portfolio Corporate Portfolio Maturity Distribution**

As of 9/30/12

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



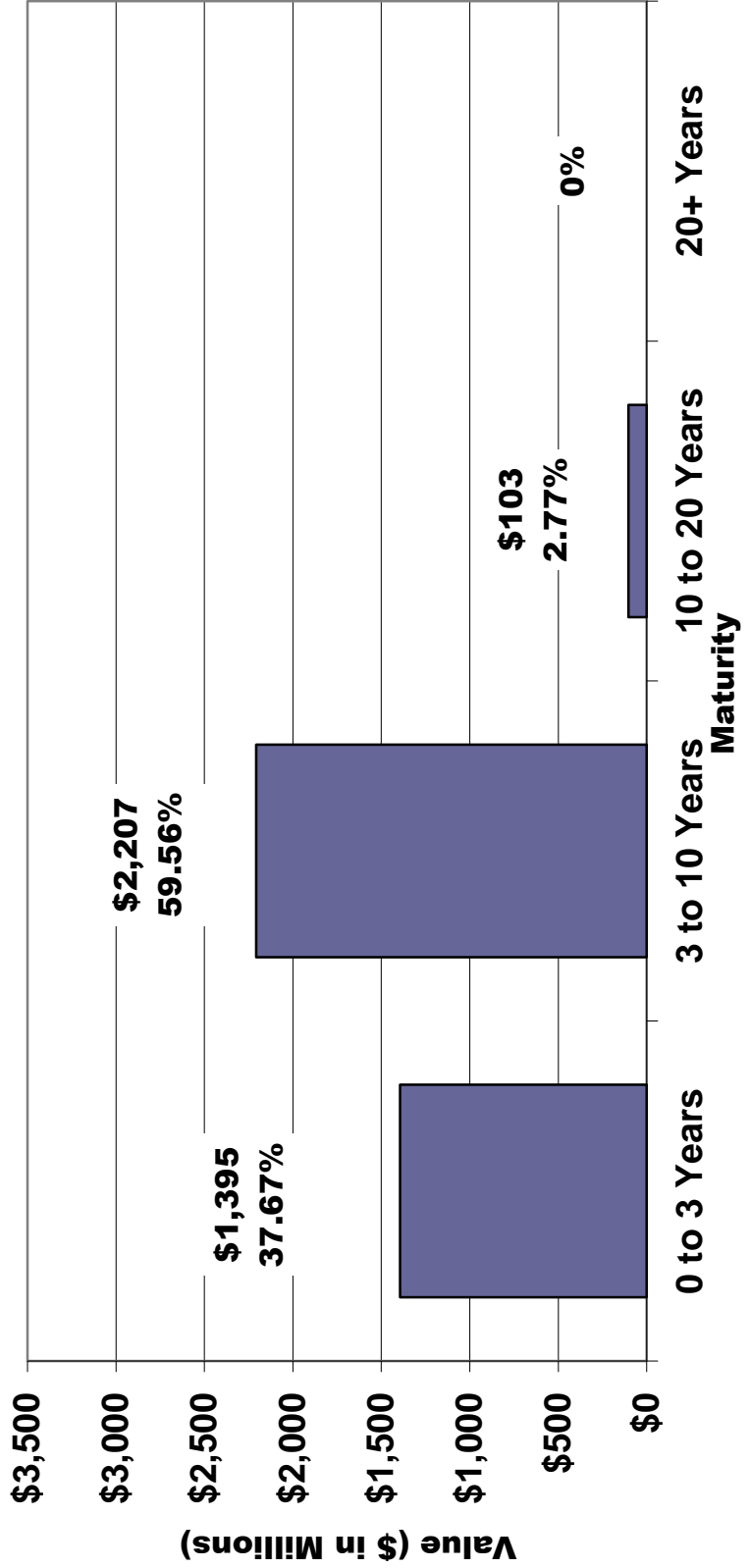


**SMRS**

## **Fixed Income Internal Portfolio Corporate Portfolio Maturity Distribution**

As of 6/30/12

**Average Maturity of October 2016  
Total Market Value \$3,705 Million**





# SMRS

## Fixed Internal Portfolio Top Ten Corporate Holdings

9/30/12				
<u>Name</u>	<u>Par Value</u>	<u>Market Value</u>	<u>Rating*</u>	<u>% of Total Portfolio</u>
General Electric Capital Corp.	\$181,675,000	\$182,970,600	A1/AA+	3.59%
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	1.55%
The Dow Chemical Co.	\$60,757,000	\$74,418,716	Baa3/BBB	1.46%
Target Corp.	\$60,000,000	\$72,672,527	A2/A+	1.42%
Emerson Electric	\$60,470,000	\$70,714,961	A2/A	1.39%
American Honda Finance Corp.	\$56,000,000	\$58,560,815	A1/A+	1.15%
Abbott Laboratories	\$49,969,000	\$56,421,583	A1/AA	1.11%
Consumers Energy Co.	\$45,905,000	\$56,347,973	Aa3/BBB+	1.10%
Allergan Inc.	\$49,000,000	\$55,957,528	A3/A+	1.10%
<b>TOTAL</b>	<b>\$704,526,000</b>	<b>\$790,661,454</b>		<b>15.50%</b>

6/30/12				
<u>Name</u>	<u>Par Value</u>	<u>Market Value</u>	<u>Rating*</u>	<u>% of Total Portfolio</u>
General Electric Capital Corp.	\$181,675,000	\$181,797,056	A1/AA+	3.56%
DTE Energy Co.	\$70,750,000	\$81,432,483	A2/A	1.60%
E.I. Du Pont de Nemours & Co.	\$70,000,000	\$78,797,024	A2/A	1.54%
Target Corp.	\$60,000,000	\$71,542,624	A2/A+	1.40%
The Dow Chemical Co.	\$60,757,000	\$71,527,193	Baa3/BBB	1.40%
Emerson Electric	\$60,470,000	\$69,835,168	A2/A	1.37%
American Honda Finance Corp.	\$56,000,000	\$58,258,812	A1/A+	1.14%
Consumers Energy Co.	\$45,905,000	\$56,550,338	Aa3/BBB+	1.11%
Abbott Laboratories	\$49,969,000	\$56,515,337	A1/AA	1.11%
Merck & Co.	\$50,000,000	\$56,018,470	Aa3/AA	1.10%
<b>TOTAL</b>	<b>\$705,526,000</b>	<b>\$782,274,505</b>		<b>15.33%</b>

\*Moody's/Standard & Poor's



## Fixed Income Internal Portfolio (Purchases) / Sales

**July 11, 2012 - September 30, 2012**

<b>GOVERNMENT PORTFOLIO</b>	
<i><b>Purchases</b></i>	<i><b>Market Value</b></i>
U.S. Agencies	(\$198,706,611)
Gov Guar	(18,923,842)
GNMA'S	<u>(14,245,257)</u>
Total Purchases	(231,875,710)
<i><b>Sales/Calls/Maturities</b></i>	
U.S. Agencies	\$175,351,464
U.S. Guaranteed	12,212,010
GNMA's	0
Total Sales/Calls/Maturities	<u>\$187,563,474</u>
<b>NET PURCHASES</b>	<b><u><u>(\$44,312,236)</u></u></b>

<b>CORPORATE PORTFOLIO</b>	
<i><b>Purchases/Transfers</b></i>	<i><b>Market Value</b></i>
AA	\$0
A	0
BBB	<u>(89,302,180)</u>
Total Purchases/Transfers	(\$89,302,180)
<i><b>Sales/Calls/Maturities</b></i>	
AAA	0
AA	0
A	42,379,239
BBB	<u>68,151,230</u>
Total Sales/Calls/Maturities	\$110,530,469
<b>NET SALES</b>	<b><u><u>\$21,228,289</u></u></b>



**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**REAL ESTATE AND  
INFRASTRUCTURE REVIEW**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**DECEMBER 6, 2012**



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



## REAL ESTATE EXECUTIVE SUMMARY

- Total real estate market value ended the third quarter at \$5 billion with a total return of 2.85%; its tenth 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 occupancies continued. International valuations declined due to global economic concerns.
- The real estate portfolio leverage ratio was reduced to 48.8%. REID's goal is to continue to deleverage the portfolio to approximately 45%.
- 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 for AAA-rated securities decreased 40 basis points (bp). CMBS delinquencies declined to 8.37% (60-day delinquent). New issuance for CMBS in 2012 is projected by Commercial Mortgage Alert to be better than expected at \$45 billion.
- Unfunded capital commitments for real estate totaled \$263 million. It is expected that market transaction activity will be modest, except for the major coastal markets, where demand for high quality core properties remains strong. Our real estate managers are being very selective, taking advantage of distressed opportunities from owners and lenders in markets that have potential for growth and long-term liquidity.
- 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.



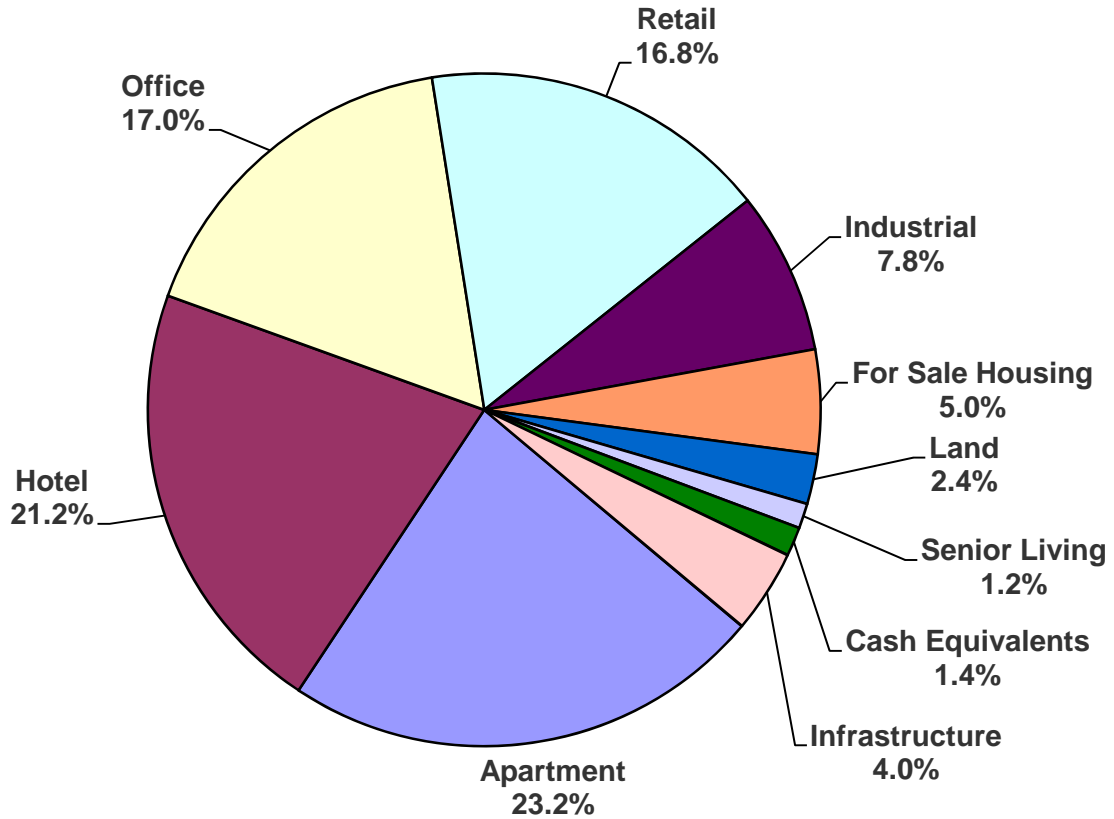
## INFRASTRUCTURE EXECUTIVE SUMMARY

- Total market value of infrastructure investments ended the third quarter at \$187 million (not including \$24 million in Short-Term Investments) with a total return of 2.41% 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 are robust, as investor sentiment toward the asset class continues to improve from the depths of the global financial crisis. According to data provided by Prequin Infrastructure, unlisted infrastructure funds reaching a final close through October 2012, had raised \$19.6 billion, which is nearly equal the amount raised for the entire year in 2011 (\$21.5 billion).
- Europe continues to dominate the deal landscape, accounting for 46% of global infrastructure deal flow through the first nine months of 2012. North America stands at 29% and Asia 9% of global infrastructure deal volume year-to-date.
- REID made one new infrastructure commitment in the third quarter of 2012, committing \$50 million to Blackstone Energy Partners, LP, a commingled fund investing in global energy and related infrastructure.
- 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

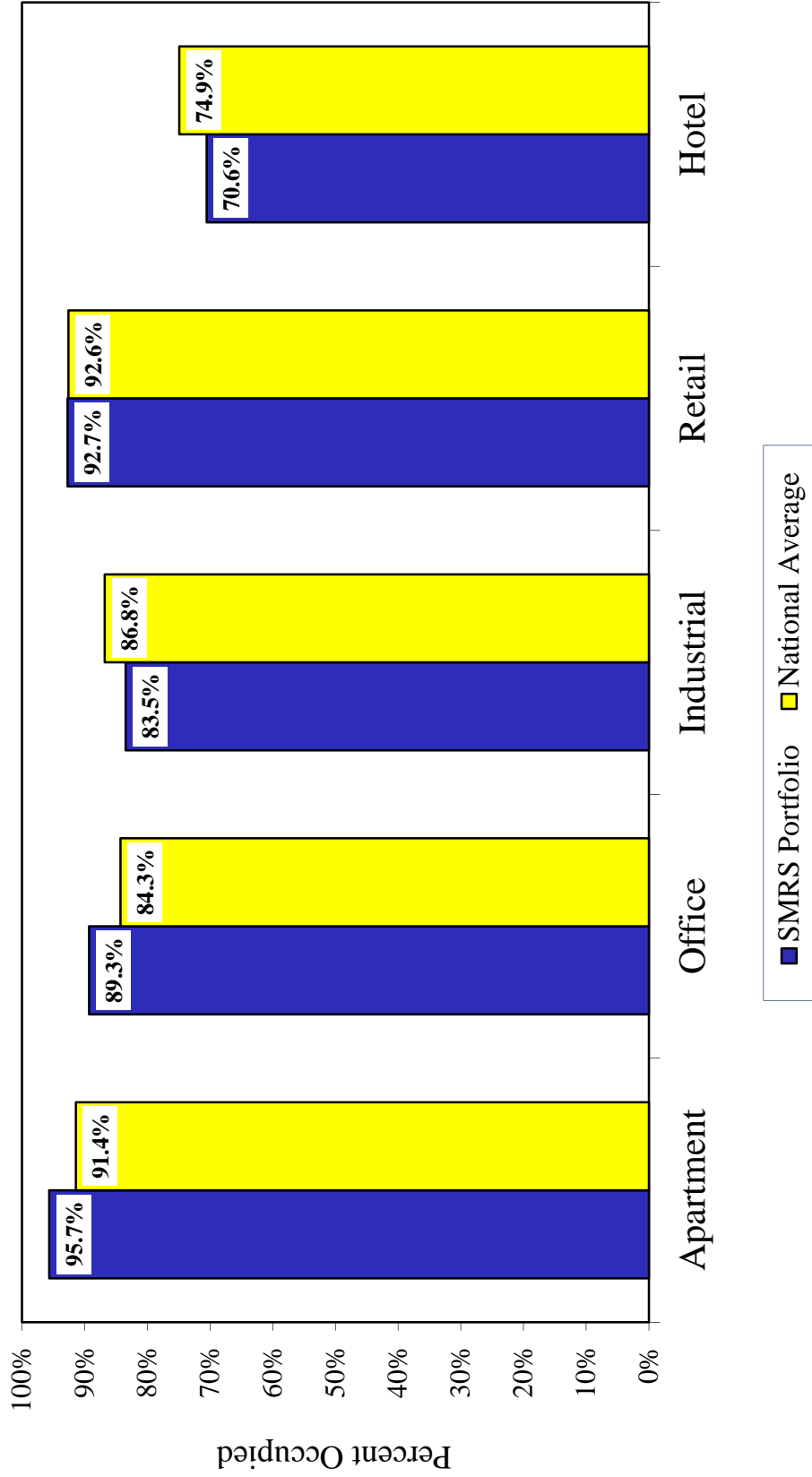
## Real Estate and Infrastructure Holdings By Property Type 9/30/12



<b>Market Value in Millions</b>				
	<u>9/30/2012</u>		<u>6/30/2012</u>	
Apartment	\$1,229	23.2%	\$1,177	22.4%
Hotel	1,122	21.2%	1,157	22.0%
Office	901	17.0%	913	17.4%
Retail	889	16.8%	893	17.0%
Industrial	412	7.8%	400	7.6%
For Sale Housing	263	5.0%	290	5.5%
Land	128	2.4%	122	2.3%
Senior Living	64	1.2%	63	1.2%
<b>Total Investments</b>	<b>\$5,008</b>	<b>94.6%</b>	<b>\$5,015</b>	<b>95.4%</b>
Infrastructure	211	4.0%	170	3.3%
Cash Equivalents	73	1.4%	66	1.3%
<b>Total</b>	<b>\$5,292</b>	<b>100.0%</b>	<b>\$5,251</b>	<b>100.0%</b>



# Real Estate Occupancy by Property Type 9/30/12



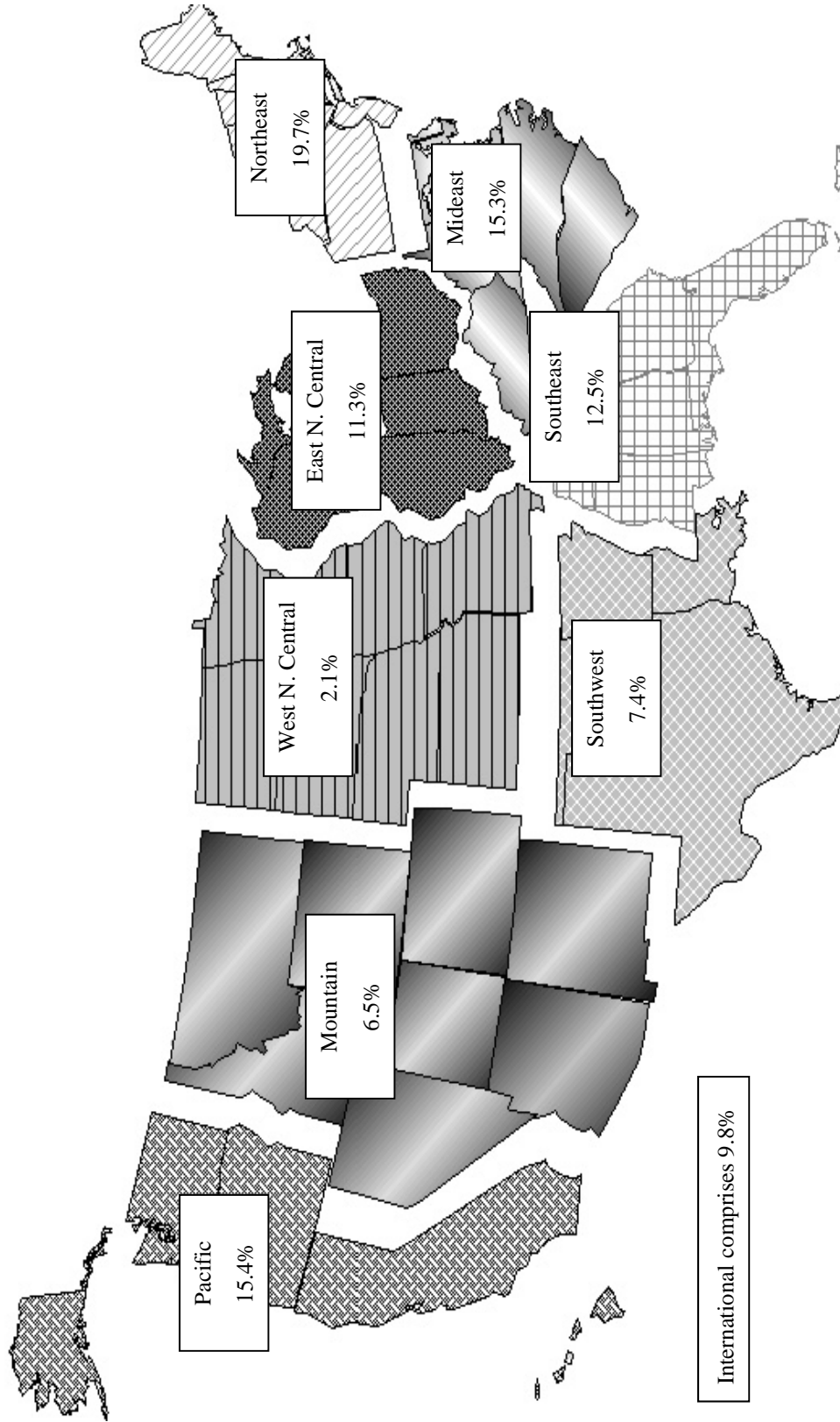
National Average Source: U.S. Census Bureau (Apartment), CB Richard Ellis (Office & Industrial), Property & Portfolio Research (Retail), Smith Travel Research (Hotel)  
*Excludes International Real Estate Investments*



# Real Estate by Region

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

9/30/12



Geographic regions defined by NCREIF, whose property index composition is: Pacific 28.1%, Mountain 5.9%, West N. Central 2.0%, Southwest 11.0%, East N. Central 8.2%, Southeast 11.2%, Northeast 19.1%, Mideast 14.5%



**SMRS**  
**Real Estate**

9/30/12

**Portfolio  
 Leverage Summary**

<u>Gross Market Value</u>	<u>Existing Debt *</u>	<u>Loan to Value %</u>
\$ 9,932,646,479	\$ 4,851,695,296	48.8%

**Top Ten  
 Advisors or Companies**

<u>Advisor or Company</u>	<u>Net Market Value</u>
Clarion Partners (formerly ING Clarion)	\$ 910,914,027
MWT Holdings, LLC **	765,841,659
Edens & Avant Investments, LP	608,261,060
KBS Realty Advisors, Inc.	294,545,302
Principal Real Estate Investors	265,562,309
Kensington Realty Advisors, Inc.	250,786,829
Five Star Realty Partners, LLC	219,261,279
CIM Group, Inc.	157,862,344
Blackstone Real Estate Advisors	146,245,709
Bentall Kennedy LP	136,082,500
	<u>\$ 3,755,363,018</u>

**Footnotes:**

\* Existing debt is comprised of property level debt.

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



# Real Estate

## Net Market Values by Ownership Entity

09/30/12

	Net Market Value	Unfunded Commitment
801 Grand Avenue Capital, LLC	\$ 108,258,495	\$ 0
AGL Annuity Contract GVA 0016	314,832,480	0
Avanath Affordable Housing I, LLC	5,872,952	18,776,217
Beacon Capital Strategic Partners IV, LP	19,323,187	0
Beacon Capital Strategic Partners V, LP	21,024,873	6,500,000
BlackRock Retail Opportunity Fund, LLC	11,104,371	6,000,000
Blackstone Real Estate Partners V, LP	57,438,447	2,208,906
Blackstone Real Estate Partners VI, LP	88,807,260	5,815,411
Capri Select Income II	6,861,535	0
Capri Urban Investors, LLC	19,447,338	0
CIM Fund III, LP	76,628,958	13,572,475
CIM Urban REIT, LLC	80,213,161	0
CIM VI (Urban REIT), LLC	1,020,225	23,849,155
City Lights Investments, LLC	114,417,044	6,500,000
Cobalt Industrial REIT	50,873,389	0
Cobalt Industrial REIT II	71,527,676	0
CPI Capital Partners N.A., LP	10,937,038	0
Devon Real Estate Conversion Fund, LP	6,117,062	0
Domain Hotel Properties, LLC	757,499,501	0
Dynamic Retail Trust	54,645,273	0
Edens & Avant Investments, LP	553,615,787	25,000,000
Federal Street, LLC	2,603,985	0
Gateway Capital R/E Fund II, LP	93,695,082	1,276,875
Great Lakes Property Group Trust	240,462,365	0
Invesco Mortgage Recovery Feeder Fund	25,738,956	15,922,329
JBC Opportunity Fund III, LP	17,791,665	0
KBS/SM Fund III, LP	204,869,870	0
L & B Medical Properties Partners, LP	3,107,103	2,384,389
Landmark Real Estate Partners V, LP	36,595,943	4,973,727
LaSalle Asia Opportunity Fund II, LP	8,636,413	0
LaSalle Asia Opportunity Fund III, LP	42,993,165	15,000,000
Lion Industrial Trust	109,733,944	0
Lion Mexico Fund, LP	43,680,583	0
Lowe Hospitality Investment Partners	2,975,274	0
MERS Acquisitions, Ltd.	120,450,595	0
MG Alliance, LLC	4,073,604	15,932,112
Morgan Stanley R/E Fund V - International	13,608,188	0
Morgan Stanley R/E Fund VI - International	39,586,531	0
Morgan Stanley R/E Fund V - U.S.	7,848,890	0
MSRE Mezzanine Partners LP	193,407	0
Morgan Stanley R/E Special Situations Fund III	68,885,454	0
MWT Holdings, LLC	765,841,659	0
Northpark-Land Associates, LLLP	25,808,856	0
Paladin Realty Brazil Investors III (USA), LP	23,377,094	9,924,317
Principal Separate Account	157,303,813	0
Rialto Real Estate Fund, LP	58,160,835	0
SM Brell II, LP	89,675,432	0
Stockbridge Real Estate Fund II-C, LP	25,440,486	2,527,500
Strategic LP	128,192,671	53,610,494
SWA Acquisitions, Ltd.	789,287	0
Trophy Property Development LP	123,919,948	11,250,000
True North High Yield Investment Fund II	35,244,994	14,915,957
Venture Center, LLC	40,085,990	0
Western National Realty Fund II, LP	15,890,268	7,535,178
	\$ 5,007,728,402	-
<b>Short Term Investments and Other</b>	73,222,781	-
<b>Total Real Estate Investments</b>	<b>\$ 5,080,951,183</b>	<b>\$ 263,475,042</b>

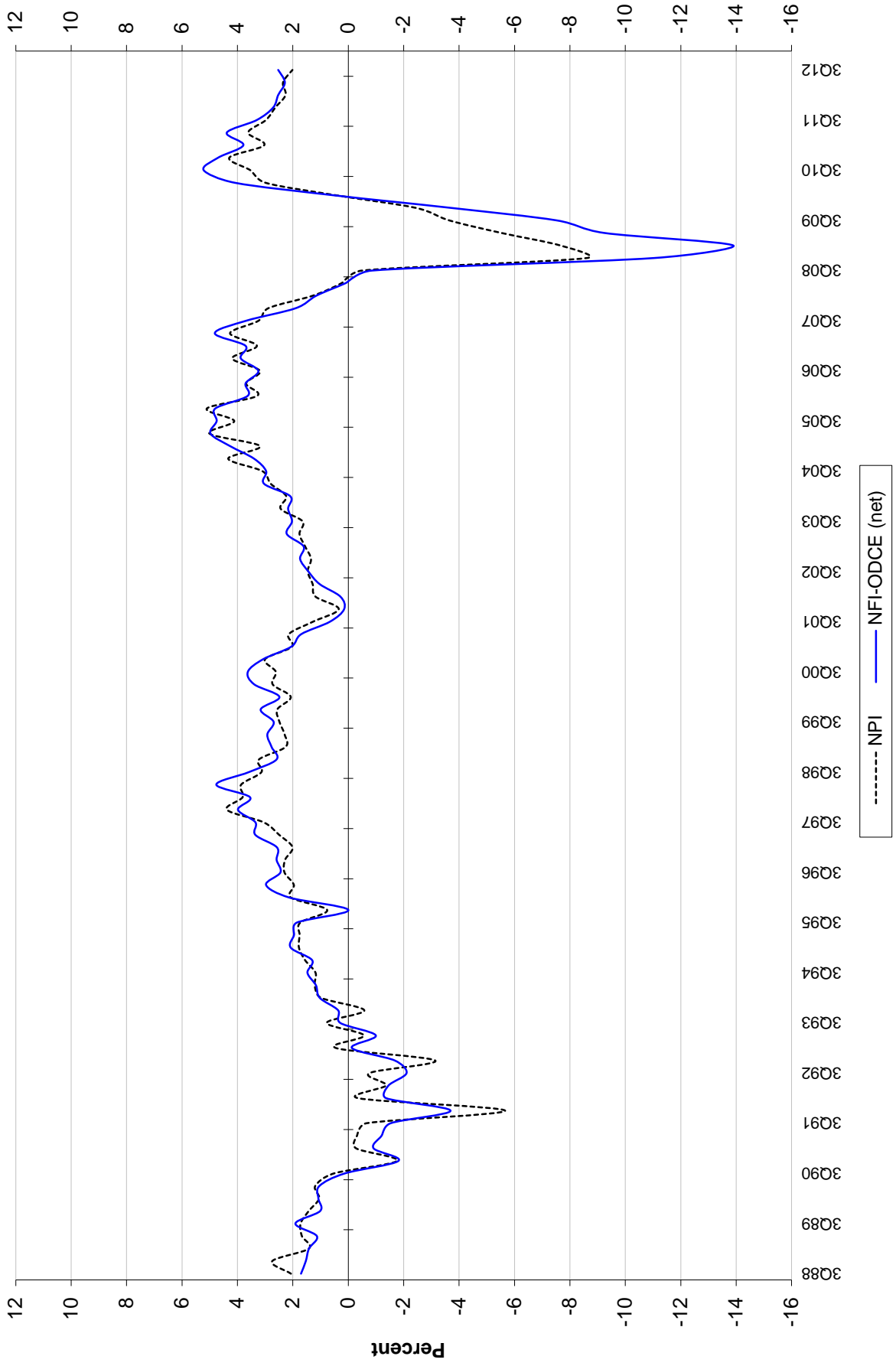


**Infrastructure Investments**  
**Net Market Values by Ownership Entity**  
9/30/12

	<u>Net Market Value</u>	<u>Unfunded Commitment</u>
<b>Blackstone Energy Partners, LP **</b>	\$ 7,228,851	\$ 42,771,149
CSG Infrastructure Investment Program, LP	45,000,000	0
Customized Infrastructure Strategies, LP	61,792,468	43,885,896
JPMorgan AIRRO India Sidecar Fund US, LLC	64,129,088	6,831,750
KKR Global Infrastructure Investors, LP	<u>8,532,279</u>	<u>66,483,000</u>
	\$ 186,682,686	-
<b>Short-Term Investments and Other</b>	<u>24,028,674</u>	<u>-</u>
<b>Total Infrastructure Investments</b>	<b>\$ 210,711,360</b>	<b>\$ 159,971,795</b>

\*\* New commitment made during the quarter reported.

### NCREIF Quarterly Returns NPI and NFI-ODCE







**STATE OF MICHIGAN  
RETIREMENT SYSTEMS**

**BASKET CLAUSE REVIEW**

**INVESTMENT ADVISORY COMMITTEE MEETING**

**DECEMBER 6, 2012**



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





**SMRS**

**BASKET CLAUSE INVESTMENTS**

The basket clause investments at September 30, 2012, were \$4,015 million fair market value (“FMV”) or 7.940% of the total portfolio market value of \$50,563 billion.

		<u>September 30, 2012</u>	
Total Absolute and Real Return	(FMV)	\$3,829,367,327	7.574%
Total International Equity	(FMV)	<u>\$ 185,292,904</u>	0.366%
<b>Total investments to date</b>	<b>(FMV)</b>	<b>\$4,014,660,231</b>	<b>7.940%</b>

**STATE OF MICHIGAN RETIREMENT SYSTEMS**  
**Section20D Investment Holding - 9/30/2012**

<b>COMPANY NAME</b>	<b>FAIR MARKET VALUE</b>
<b>ABSOLUTE AND REAL RETURN</b>	
Abernathy Fund	260,199,869
Absolute Return Capital	51,407,715
Apollo Capital Credit Fund	265,756,534
Apollo Credit Strategies	122,550,808
Apollo European Principal Finance Fund	4,561,967
Brevan Howard Multi-Strategy Fund	101,974,893
Elliott International Limited	9,745,847
Emerald Performance Materials	44,053,256
Energy Recap and Restructuring	13,621,570
Entrust White Pine	252,638,454
Fairfield Settlement Partners	63,338,244
FrontPoint Michigan Strategic Partnership Fund	6,078,091
Galaxie Avenue, LLC	101,891,649
Global Maritime Investment Fund	1,753,565
Hopen Life Sciences Fund II	1,638,444
HPS Senior Loan Fund II	165,832,389
HPS Senior Loan Fund III	21,011,186
KKR Lending Partners	46,644,045
Lakewater II, LLC	123,503
Lakewater LLC	129,078,902
PSAM - Spartan Fund	29,562,297
Red Kite Mining Fund	21,949,848

<b>COMPANY NAME</b>	<b>FAIR MARKET VALUE</b>
Renaissance Venture Cap Fund II	710,039
Sand Hill, LLC	1,044,334,921
SJC Direct Lending Fund	152,459,738
Social Network Holdings, LLC	585,556,588
Structured Credit	44,393,626
Tahquamenon LP	286,499,339
<b>TOTAL ABSOLUTE AND REAL RETURN</b>	<b><u>\$3,829,367,327</u></b>
<b>INTERNATIONAL EQUITY</b>	
LACM Emerging Markets Fund	185,292,904
<b>TOTAL INTERNATIONAL EQUITY</b>	<b><u>\$185,292,904</u></b>
<b>GRAND TOTAL</b>	<b><u>\$4,014,660,231</u></b>
<b>TOTAL 20D INVESTMENTS</b>	7.940%
<b>as % of TOTAL PORTFOLIO (MKT)</b>	
\$50,563 million	



# **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.**



