

# INVESTMENT ADVISORY COMMITTEE MEETING

## June 16, 2016

### State of Michigan Retirement Systems

#### Quarterly Investment Review



Nick A. Khouri, State Treasurer

Prepared by Bureau of Investments  
Michigan Department of Treasury



# INVESTMENT ADVISORY COMMITTEE MEETING

JUNE 16, 2016

## Agenda



- 9:30 a.m. Call to Order and Opening Remarks
- 9:40 a.m. Approval of the 3/2/16 IAC Meeting Minutes
- 9:45 a.m. Executive Summary & Performance for Periods Ending 3/31/16
- 10:00 a.m. Current Asset Allocation Review  
Markets Review and Outlook
- 10:15 a.m. Fidelity Investments ~ Jeffrey Moore, CFA, Portfolio Manager
- Review of Investment Reports – *Receive and File*
- Absolute and Real Return/Oppportunistic
  - Domestic Equity
  - Fixed Income
  - International Equity
  - Private Equity
  - Real Estate & Infrastructure
- Basket Clause – *Receive and File*
- 11:00 a.m. Closing Remarks ~ Adjournment



### 2016 Meeting Schedule

Thursday, September 1, 2016  
Thursday, December 15, 2016

All meetings start at 9:30 a.m.

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# State of Michigan Retirement Systems

## MINUTES

Investment Advisory Committee Meeting

June 16, 2016



Jon M. Braeutigam  
Chief Investment Officer  
Bureau of Investments



## INVESTMENT ADVISORY COMMITTEE

The Investment Advisory Committee (IAC) held its quarterly meeting on Wednesday, March 2, 2016, at the Bureau of Investments, Great Lakes Conference Room, 2501 Coolidge Road, Suite 400, East Lansing, Michigan.

Members Present:

James B. Nicholson, Chair – via phone  
L. Erik Lundberg  
Reginald Sanders  
John Roberts, DTMB – via phone  
Allan Pohl, LARA

In attendance from the Department of Treasury:

Treasurer Nick A. Khouri – via phone	Jon M. Braeutigam	Gregory J. Parker
Jim Elkins	Peter Woodford	Karl Borgquist
Richard Holcomb	Dave Klauka	Woody Tyler
Marge McPhee	Emma Khavari	Janet Sudac

Others in attendance:

Max Kotary	Tim McEnery	Joe Hernandez
Molly Jason		

### **Call to Order**

Mr. James B. Nicholson called the March 2, 2016, IAC meeting to order at 9:30 a.m.

### **Approval of Minutes**

- Mr. Nicholson asked for a motion to approve the minutes of the September 3, and December 1, 2015, IAC meetings. Mr. Erik Lundberg so moved, seconded by Mr. Reginald Sanders, there were no objections – motion carried.

### **Executive Summary Tab – Performance Section**

- Mr. Braeutigam stated the return for the plan for calendar year 2015 was 2.8%, a good number relative to peers.
- Mr. Braeutigam noted that out of 30 public pension plans in the State Street Report Universe greater than \$10 billion, SMRS ranked first over the past one, three, and five years. Over the past ten years, SMRS ranked second. Chairman Nicholson and Mr. Lundberg agreed this was exceptional performance.
- Mr. Braeutigam noted that over the past five years, these results added over \$6 billion in extra fund value above the median plan returns.
- Mr. Reginald Sanders and Erik Lundberg discussed the strategy for their portfolios, noting that their focus is on being less dependent on the stock markets. Mr. Parker

echoed these comments, explaining that had been a strategy for SMRS over the past three to five years as well.

### **Asset Allocation Tab**

- Mr. Greg Parker discussed the funding of the \$2.2 billion in net benefit payments in 2016. The funding will come from Absolute Return and Real Estate and U.S. equity will be tapped should more appreciation occur.
- He noted that over \$1 billion of new commitments were made in the quarter ending December 2015.
- In both international and domestic credit markets, credit spreads were wide and widening.
- The Federal Reserve, the Atlanta Fed, have a model that is pretty accurate; their forecast for the economy, in the first quarter, called for higher growth. Therefore, there is reason to believe that the economy is on solid footing.
- Mr. Parker explained that China has been identified as being a wild card. It is uncertain, at this time, what role the adjustments in the Chinese will play in the capital markets.
- He stated that gasoline prices are even lower this year than last year, which is a tailwind for the U.S. consumer.

### **Markets Review and Outlook Tab**

- Mr. Parker stated that in 2015, the best performing asset class was real estate returning over 13%. The next best return was about 1% in U.S. Equities. The plan has a 10% allocation to real estate.

### **Absolute and Real Return/Oppportunistic**

- Mr. James Elkins discussed the funds the division received from the tactical shift in asset allocation, noting the objective was to further diversify the holdings and target returns above investment-grade fixed income with lower volatility.
- He noted that redemptions have been and will continue to be a source of capital for the portfolio.
- He discussed the private lending portfolio, noting that it continued to perform well and that during the fourth quarter, lending to larger companies improved credit quality.
- Mr. Elkins discussed his observations for the items driving the weak technicals noting that dealers are no longer holding inventory and there was large retail market trading in mutual funds.

### **Domestic Equity**

- Mr. Jack Behar discussed domestic equity. The group lagged the S&P 1500 on a one year and a five year basis, while the three, seven, and ten year performance roughly matched the benchmark. Domestic equity was at or near the top third of its peer group over most long-term periods.

- He discussed the S&P 1500 and how it is poised to return approximately 8.6% over the long term.
- He noted that active equity remains over-weight to both the financial sector and to defensive stocks.
- Mr. Behar noted that growth stocks have outperformed value stocks by a cumulative 58% over the past seven years. This has been a headwind to past performance and a potential tailwind to future performance.
- He noted that there is expectation that the total active equity PE ratio will at least partially converge with the S&P 1500 over the next five years, driving annualized outperformance.

### **Fixed Income**

- Mr. Daniel Quigley explained that 2015 was a flat year for fixed income with the Barclay's Aggregate returning 0.55%.
- He noted that the division outperformed the benchmark and peer group on a one-year basis during 2015.
- He explained that the best performing strategy in the division's portfolio was the internally managed core portfolio due to strong security selection and a credit quality bias.
- Mr. Quigley discussed positioning the portfolio by increasing allocation to high yield at wider spreads.

### **International Equity**

- Mr. Richard Holcomb discussed the investment returns on international equities and noted that all three strategies – indexed funds, stock plus funds, and external managers – added value.
- He noted that geopolitical uncertainties continue to negatively impact global trade and that slower Chinese economic growth remains an issue.
- Mr. Holcomb explained that emerging markets are expected to continue to reflect energy and commodity pricing challenges, and developed markets face political populism trends that challenge European Union integration and cooperation.

### **Private Equity**

- Mr. Peter Woodford explained that performance in 2015 was strong showing a 10.6% return for the year, beating its benchmark by 820 basis points. Although returns were very strong it is uncertain if this pace will continue.
- Mr. Woodford explained that one key driver of private equity's outperformance was the continued strength in the M&A market. This market was propelled by corporate buyers flush with cash as well as access to inexpensive debt. Private equity firms took advantage by selling their portfolio investments at a brisk pace.
- Mr. Woodford explained that going forward the near term focus will be on mezzanine debt.

## **Real Estate and Infrastructure**

- Mr. Brian Liikala explained that performance in real estate was strong as a result of increased rental income and valuations in for-rent housing and hospitality assets. Also contributing to the strong performance were credit strategies and unique opportunities sourced by staff within the division.
- He noted that the return was negatively impacted by the decline in foreign currency primarily for offshore infrastructure investments.
- He discussed the strategy of obtaining the highest risk-adjusted returns which focuses on developing apartments and industrial warehouse buildings in select markets.
- Mr. Liikala further discussed the CMBS market and the widening of the spreads, explaining that SMRS managers are taking advantage of those yields at various levels of the capital stack. Also, SMRS has been increasing its investment in real estate debt.

## **Basket Clause**

In the spirit of time, this report was received and filed.

## **Closing Remarks**

Chairman Nicholson thanked everyone for attending.

## **Next Meeting Date and Adjournment**

The next Investment Advisory Committee Meeting is scheduled for Thursday, June 16, 2016. The tentative topic will be on the Fixed Income Markets; the effects of negative interest rates. The meeting was adjourned by Chairman Nicholson at 11:08 a.m.

Approved:

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James B. Nicholson, Chairman

State of Michigan Retirement Systems

# EXECUTIVE SUMMARY

Investment Advisory Committee Meeting

June 16, 2016



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



# EXECUTIVE SUMMARY

March 2016

## Performance

*An overview.*

MPSERS Plan (3/31/16)	1-Year	3-Years	5-Years	7-Years	10-Years
Annualized Returns	1.4%	8.6%	8.2%	11.3%	6.2%
Policy Return	2.2%	8.7%	8.4%	12.5%	6.3%
Peer Median Return	0.0%	6.7%	7.0%	10.8%	5.6%

- The peer group is the State Street Universe of U.S. public funds that are greater than \$10 billion in assets, and 32 plans met this criteria last year. Over the past one, three, five, and ten years, the MPSERS plan returns had some of the best returns in the public plan peer universe.
- The returns fell below the policy benchmark over the past year by -0.8%. In general, it was a tough market for alpha strategies in the absolute return and the active domestic equity portfolio.
- The returns beat the peer median over the past year by 1.4%. Outperformance was helped by selectivity in private equity as well as domestic equity. The overweight in real estate and private equity as well as the underweight to international equity also added relative value versus peers.

## Asset Allocation

*Building up commitments in private markets.*

- Given the historically low rates of return available in the capital markets for safe, short term bonds, and in order for the assets to earn the long-term actuarial rate of return of 8%, risk (primarily equity risk) must be assumed.
- Liquidity is another fundamental risk that is managed through asset allocation. The combined systems paid out approximately \$2.2 billion net of contributions over the past twelve months ending in March 2016.
- Over the past year, the plans put to work \$1 billion in real return opportunistic strategies, \$750 million in international equities and \$350 million in long-term fixed income. Over the same time period, the plans reduced the allocation to domestic equity by \$2.4 billion and private equity by \$1.2 billion. Absolute return and real estate both received modest allocations during the period as well. The allocation to short term cash decreased by \$700 million.
- According to the State Street peer universe data, the peer median allocation for the long-term fixed income asset class is 23.8% versus the plan's allocation of 13.0%. The strategic target allocation for fixed income is 10.5%. With the 10-year U.S. Treasury yielding approximately 1.8% and cash yielding approximately 60 basis points (bps) at the end of April 2016, the lower allocation is justified as it will be difficult to earn the target rate of 8%.
- The plans have outstanding capital commitments to fund approximately \$9.3 billion in illiquid asset classes, primarily private equity. This figure is about 15.5% of the March 2016 market value and is an additional liquidity consideration. In the March 2016 quarter, over \$1.6 billion of new commitments were made.
- The plans are modestly defensive in allocation. The plans are 3.5% underweight equities; private equity, international equity, and domestic equity and 3.5% overweight fixed income; long term and short term.

## **Capital Markets**

*Risk assets in focus.*

- Capital market assumptions used for determining strategic asset allocations are being reduced across the board. This is the general opinion for most consultants, investment banks, and other market participants. The reason for this is the low interest rate environment caused by the policies of the Federal Reserve and other central banks, as well as the run-up in prices for most risk assets over the past seven years after the depths of the Great Recession.
- The U.S. stock market, as measured by the S&P 500, experienced the worst return on record for the month of January in 2016. During February 2016, the market hit a correction level of -14%. For the period ending March 2016, the broad domestic market index, S&P 1500, returned 1.2% over the past year, 11.6% over the past three years, and 11.4% per year over the past five years.
- Over the past ten years, growth stocks have significantly outperformed value stocks. This recent ten-year stretch is one of the greatest on record rivaling the dot-com era and the Great Depression. In the five years subsequent to those prior two periods of fantastic growth style outperformance, value went on to outperform by more than 10% annualized.
- International equities continue to lag their domestic counterparts however. Over the past one, three, five, seven, and ten years ending March 2016, the international market index, MSCI ACWI ex USA, underperformed the S&P 1500 index by -10.4%, -11.3%, -11.1%, -8.0%, and -5.1% annualized respectively.
- The 10-year U.S. Treasury closed April 2016 at 1.8%, nearly 20 bps lower than one year prior. Perhaps in anticipation of additional tightening of Federal Reserve Board policy, the yields in 2-year U.S. Treasuries ended April at 0.8% and 20 bps higher than the year prior. The curve is about average in terms of steepness, though it is as flat as it has been in the past 8.5 years. Credit spreads are slightly elevated and offer some opportunistic values.

## **Economic Backdrop**

*U.S. economy continues to slowly grow.*

- After months of anticipation, at its December 2015 meeting, the Federal Reserve Board voted to increase short-term interest rates by 25 basis points. This marks the first time in roughly seven years that the Fed Funds rate is higher than effectively zero percent. As of April 2016, the market was pricing in a low likelihood of additional tightening in 2016.
- The most recent reading of the annualized U.S. GDP growth was 0.7%, slightly below the consensus estimate of 0.8%. Current estimates for 2016 GDP growth for the U.S. are 2.4%. Nearly all economists expect the U.S. economy to continue to grow in 2016, although at a low rate.
- There are a number of tailwinds to the U.S. economy. Over the last two years, the price of crude oil has dropped by approximately \$60 per barrel. A study by Union Bank of Switzerland concludes that for every \$10 drop in oil, the U.S. economy gets a boost of 0.1% growth the following year. The price of crude has rebounded since the lows in February 2016, however markets have so far seen this as a welcome stabilization rather than potential headwinds.
- Inflation, excluding food and energy, is now measured to be over 2%. From its February 2016 lows, crude oil ended April 75% higher, the same level it was 9 months earlier. Food input prices were up over 11% from their 2016 lows, at the same level as a year ago.
- As commodity prices normalized, inflation could begin to feel stronger than it has been over the past business cycle. This could have implications on future Fed policy. Noted bond investor Jeff Gundlach recently stated that it is his belief that “the Fed has shifted from, ‘if the data pattern improves we will have the green light to hike,’ to ‘unless the data pattern weakens we have the green light to hike’”.

**Investment Update***Highlighting the quarter.*

(\$ Millions)

**NEW COMMITMENTS****January 1 – March 31, 2016**

<b>Asset Class</b>	<b>Fund Name / (Managed By)</b>	<b>Commitment</b>
<b>Private Equity</b>		
	Advent International GPE VIII-B	\$250.0
	Berkshire Fund IX	200.0
	Green Equity Investors VII	200.0
	Vista Equity Partners VI	75.0
	Accel Growth IV	22.0
	Accel XIII	10.0
	Accel Leaders Fund	5.5
<b>Real Estate &amp; Infrastructure</b>		
	Rialto Credit Partnership, LP; (Rialto Capital Management LLC)	200.0
	Apollo Asia Real Estate Fund I	75.0
	TSP Spartan C-1, LLC; (Transwestern Strategic Partners)	20.0
	IMRF II Coinvest Spiga, LP; (Invesco)	15.0
<b>Real Return &amp; Opportunistic</b>		
	HPS Red Cedar Fund, LP; (Highbridge Principal Strategies, LLC)	250.0
	SJC Direct Lending Fund III, LP; (Czech Asset Management)	250.0
	Warwick (SMRS) Co-Invest, LP	25.0
	Specialty Equity Strategy, LP; (JP Morgan)	20.0
<b>TOTAL</b>		<b>\$1,617.5</b>



State of Michigan Retirement Systems

# PERFORMANCE

Investment Advisory Committee Meeting

June 16, 2016



Jon M. Braeutigam  
Chief Investment Officer  
Bureau of Investments



# ***Bureau of Investments***

## ***Mission Statement***

*The Bureau of Investments continually strives to provide quality investment management services, broad professional expertise, and independent advice to the State Treasurer as fiduciary of the State of Michigan Retirement Systems, and various Michigan trust funds and the State's common cash.*

## ***SMRS Goals***

*Maintain sufficient liquidity to pay benefits.*

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

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

*Diversify assets to reduce risk.*

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

# MPERS PENSION

## Time-Weighted Rates of Return Periods Ending March 31, 2016

	% of Portfolio 3/31/16	Ten Years <sup>1</sup>		Seven Years <sup>1</sup>		Five Years <sup>1</sup>		Three Years <sup>1</sup>		One Year		Current Quarter	
		Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank
<b>TOTAL PLAN</b>	<b>100.0</b>	<b>6.2</b>	<b>11</b>	<b>11.3</b>	<b>31</b>	<b>8.2</b>	<b>5</b>	<b>8.6</b>	<b>4</b>	<b>1.4</b>	<b>7</b>	<b>0.5</b>	<b>92</b>
Median - Greater than \$10 Billion <sup>2</sup>		5.6		10.8		7.0		6.7		0.0		1.2	
MPERS Total Plan Policy		6.3		12.5		8.4		8.7		2.2		2.7	
<b>DOMESTIC EQUITIES</b>	<b>27.2</b>	<b>7.0</b>	<b>34</b>	<b>16.9</b>	<b>41</b>	<b>11.0</b>	<b>24</b>	<b>11.6</b>	<b>24</b>	<b>-0.7</b>	<b>47</b>	<b>0.9</b>	<b>53</b>
S&P 500 Index		6.6		16.5		10.4		10.8		-1.4		1.0	
Median <sup>2</sup>		7.1		17.2		11.4		11.6		1.2		1.6	
<b>PRIVATE EQUITIES</b>	<b>16.0</b>	<b>12.3</b>	<b>6</b>	<b>14.1</b>	<b>10</b>	<b>13.7</b>	<b>8</b>	<b>14.7</b>	<b>15</b>	<b>9.9</b>	<b>12</b>	<b>1.7</b>	<b>26</b>
Median <sup>2</sup>		9.2		10.9		9.6		10.4		5.7		0.7	
Alternative Blended Benchmark <sup>3</sup>		11.2		21.5		15.6		18.3		4.5		7.8	
<b>INTERNATIONAL EQUITIES</b>	<b>15.4</b>	<b>1.6</b>	<b>86</b>	<b>11.1</b>	<b>27</b>	<b>2.0</b>	<b>62</b>	<b>1.9</b>	<b>54</b>	<b>-7.5</b>	<b>49</b>	<b>-0.8</b>	<b>60</b>
Median <sup>2</sup>		2.7		10.6		2.3		2.3		-7.5		-0.7	
International Blended Benchmark <sup>4</sup>		0.6		8.1		0.6		0.5		-9.2		-0.4	
<b>BONDS</b>	<b>13.0</b>	<b>5.6</b>	<b>39</b>	<b>5.8</b>	<b>71</b>	<b>4.2</b>	<b>47</b>	<b>3.0</b>	<b>31</b>	<b>2.3</b>	<b>21</b>	<b>2.9</b>	<b>56</b>
Median <sup>2</sup>		5.4		6.6		4.2		2.4		1.5		3.0	
Barclays Aggregate		4.9		4.5		3.8		2.5		2.0		3.0	
<b>REAL ESTATE &amp; INFRASTRUCTURE</b>	<b>10.5</b>	<b>5.4</b>	<b>30</b>	<b>5.6</b>	<b>63</b>	<b>12.2</b>	<b>49</b>	<b>13.7</b>	<b>30</b>	<b>11.3</b>	<b>58</b>	<b>3.0</b>	<b>45</b>
Median <sup>2</sup>		4.3		6.4		12.1		12.4		11.9		3.0	
NCREIF - Property Blended Index <sup>5</sup>		6.2		7.7		10.5		10.5		10.4		1.9	
NCREIF Open Fund Index Net		5.4		8.1		12.2		12.6		12.6		2.0	
<b>REAL RETURN AND OPPORTUNISTIC</b>	<b>8.1</b>					<b>8.6</b>		<b>11.6</b>		<b>3.9</b>		<b>-1.5</b>	
50% (CPI + 300 bps) + 50% (8% actual rate)						7.2		6.9		6.9		1.9	
<b>ABSOLUTE RETURN</b>	<b>6.7</b>			<b>7.1</b>		<b>3.0</b>		<b>2.6</b>		<b>-6.7</b>		<b>-6.3</b>	
HFRI FOF Cons 1 month lagged				3.2		1.6		2.2		-3.1		-2.7	
<b>CASH EQUIVALENTS</b>	<b>3.1</b>	<b>1.1</b>		<b>0.8</b>		<b>0.4</b>		<b>0.4</b>		<b>0.6</b>		<b>0.2</b>	
1 Month T-Bill		1.0		0.1		0.0		0.0		0.1		0.1	

<sup>1</sup> Annualized Returns and Percentile Rank.

<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> SP 500 + 300 bps thru 12/31/06. Ending market value (EMV) weighted blend of 10 yr yield + 300 bps and SP 500 + 300 bps 12/31/06 to 9/30/09. EMV weighted blend of 10 yr yield + 300 bps and SP 500 + 300 bps 3-month lagged 9/30/09 to present.

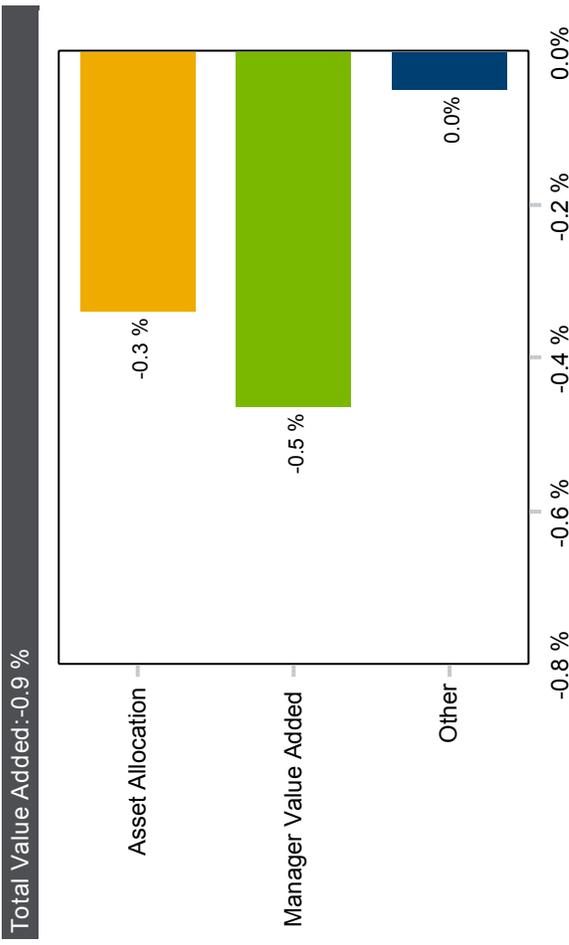
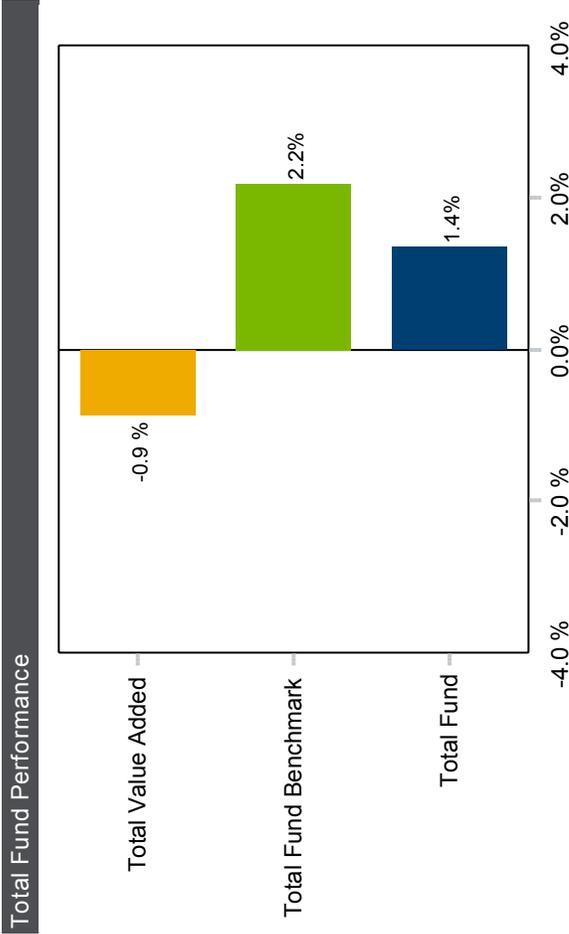
<sup>4</sup> International blended benchmark is S&P Developed BMI-EPAC 50/50 prior to 1/1/2010. S&P Developed BMI-EPAC 75 USD / 25 Local, 1/1/2010 to 9/30/10. MSCI ACWI Ex USA Gross 10/1/2010 to present.

<sup>5</sup> NCREIF - Property Blended Index is NPI minus 75 bps prior to October 2005, NPI minus 130 bps current.

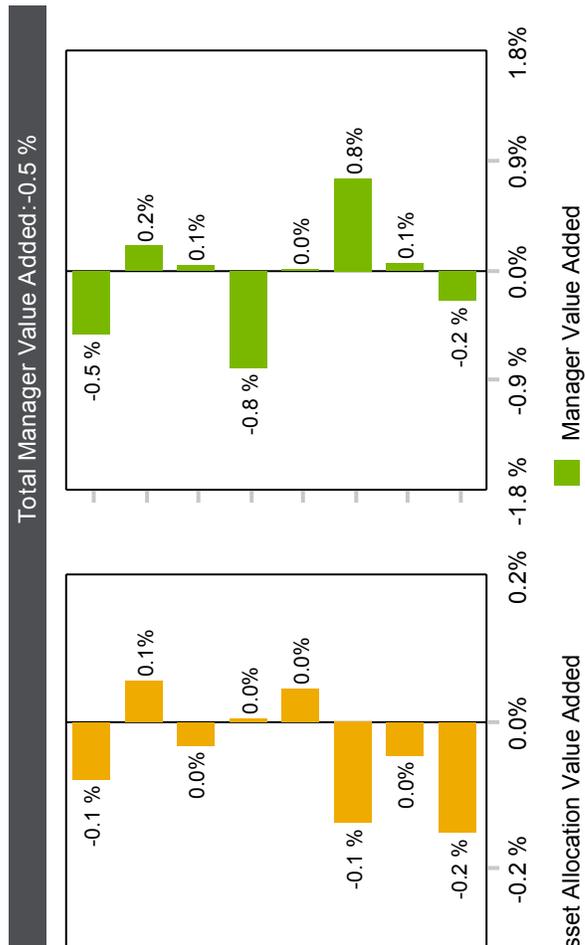
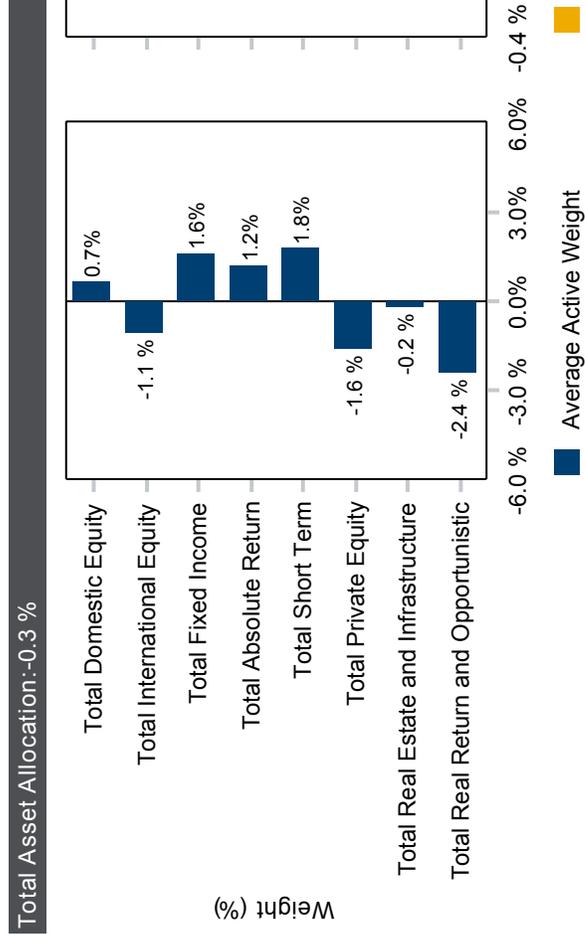
Source: State Street Analytics; the NCREIF - NPI (Property Index) source is NCREIF; the S&P BMI-EPAC Index source is S&P.

Total Fund Attribution

Total Michigan vs. Total Fund Benchmark



3



# Cumulative and Consecutive Total Fund Returns

<b>MPSERS</b>										
<b>Cumulative For Years Ending 3/31/16</b>										
	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year
<b>MPSERS</b>	1.4	5.2	8.6	9.1	8.2	9.2	11.3	5.8	5.5	6.2
<b>Public Plan - Median (&gt; \$10 billion)*</b>	0.0	3.3	6.7	7.5	7.0	8.2	10.8	5.1	4.7	5.6
<b>Rank</b>	7	4	4	5	5	7	31	17	15	11
<b>bp Difference - Median</b>	133	195	196	152	126	98	47	70	84	54
<b>Consecutive For Years Ending</b>										
	3/16	3/15	3/14	3/13	3/12	3/11	3/10	3/09	3/08	3/07
<b>MPSERS</b>	1.4	9.3	15.7	10.4	5.0	14.2	24.3	-25.5	3.3	12.1
<b>Public Plan - Median (&gt; \$10 billion)*</b>	0.0	7.0	13.1	10.5	4.6	13.1	27.4	-28.0	2.1	12.0
<b>Rank</b>	7	9	10	53	36	30	86	30	33	47
<b>bp Difference - Median</b>	133	227	263	-10	42	117	-301	251	114	11

<b>MSERS</b>										
<b>Cumulative For Years Ending 3/31/16</b>										
	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year
<b>MSERS</b>	1.3	5.2	8.6	9.0	8.2	9.1	11.2	5.7	5.4	6.1
<b>Public Plan - Median (&gt; \$1 billion)*</b>	-0.2	3.1	6.5	7.4	6.8	7.9	10.8	5.1	4.7	5.6
<b>Rank</b>	7	3	3	5	6	7	39	26	16	18
<b>bp Difference - Median</b>	158	216	210	162	135	121	37	59	72	50
<b>Consecutive For Years Ending</b>										
	3/16	3/15	3/14	3/13	3/12	3/11	3/10	3/09	3/08	3/07
<b>MSERS</b>	1.3	9.2	15.6	10.4	4.8	14.1	24.1	-25.7	3.1	12.1
<b>Public Plan - Median (&gt; \$1 billion)*</b>	-0.2	6.8	13.0	10.4	4.4	13.9	29.1	-28.0	1.8	11.9
<b>Rank</b>	7	9	13	53	31	44	92	29	23	41
<b>bp Difference - Median</b>	158	242	255	-3	45	19	-504	234	132	26

\*State Street Public Funds Universe

# Cumulative and Consecutive Total Fund Returns

<b>MSPRS</b>										
<b>Cumulative For Years Ending 3/31/16</b>										
	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year
<b>MSPRS</b>	1.3	5.2	8.5	9.0	8.2	9.2	11.1	5.7	5.4	6.1
<b>Public Plan - Median (&gt; \$1 billion)*</b>	-0.2	3.1	6.5	7.4	6.8	7.9	10.8	5.1	4.7	5.6
<b>Rank</b>	7	3	3	6	6	7	39	27	16	18
<b>bp Difference - Median</b>	158	216	206	158	133	122	32	58	74	52
<b>Consecutive For Years Ending</b>										
	3/16	3/15	3/14	3/13	3/12	3/11	3/10	3/09	3/08	3/07
<b>MSPRS</b>	1.3	9.2	15.5	10.4	4.9	14.3	23.6	-25.5	3.4	12.2
<b>Public Plan - Median (&gt; \$1 billion)*</b>	-0.2	6.8	13.0	10.4	4.4	13.9	29.1	-28.0	1.8	11.9
<b>Rank</b>	7	9	16	55	31	43	92	27	21	40
<b>bp Difference - Median</b>	158	241	245	-7	51	33	-548	249	161	34

<b>MJRS</b>										
<b>Cumulative For Years Ending 3/31/16</b>										
	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year
<b>MJRS</b>	1.3	5.1	8.3	8.8	8.0	9.0	10.7	5.5	5.2	5.9
<b>Public Plan - Median (&gt; \$1 billion)*</b>	-0.2	3.1	6.5	7.4	6.8	7.9	10.8	5.1	4.7	5.6
<b>Rank</b>	7	4	6	11	9	9	53	41	23	21
<b>bp Difference - Median</b>	157	208	181	135	114	105	-9	34	52	31
<b>Consecutive For Years Ending</b>										
	3/16	3/15	3/14	3/13	3/12	3/11	3/10	3/09	3/08	3/07
<b>MJRS</b>	1.3	9.1	14.9	10.2	4.9	14.2	21.7	-24.9	3.4	12.0
<b>Public Plan - Median (&gt; \$1 billion)*</b>	-0.2	6.8	13.0	10.4	4.4	13.9	29.1	-28.0	1.8	11.9
<b>Rank</b>	7	9	25	61	31	44	94	23	21	44
<b>bp Difference - Median</b>	157	227	182	-27	49	27	-745	305	160	16

\*State Street Public Funds Universe



State of Michigan Retirement Systems

# ASSET ALLOCATION REVIEW

Investment Advisory Committee Meeting

June 16, 2016



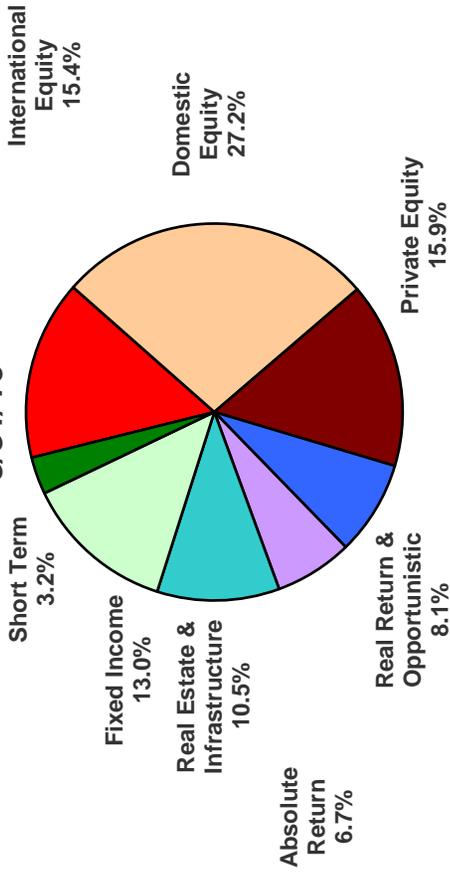
Jon M. Braeutigam  
Chief Investment Officer  
Bureau of Investments





# STATE OF MICHIGAN RETIREMENT SYSTEMS PROFILE - MARCH 2016

## Asset Allocation 3/31/16



## Asset Allocation By Market Value (In Millions)

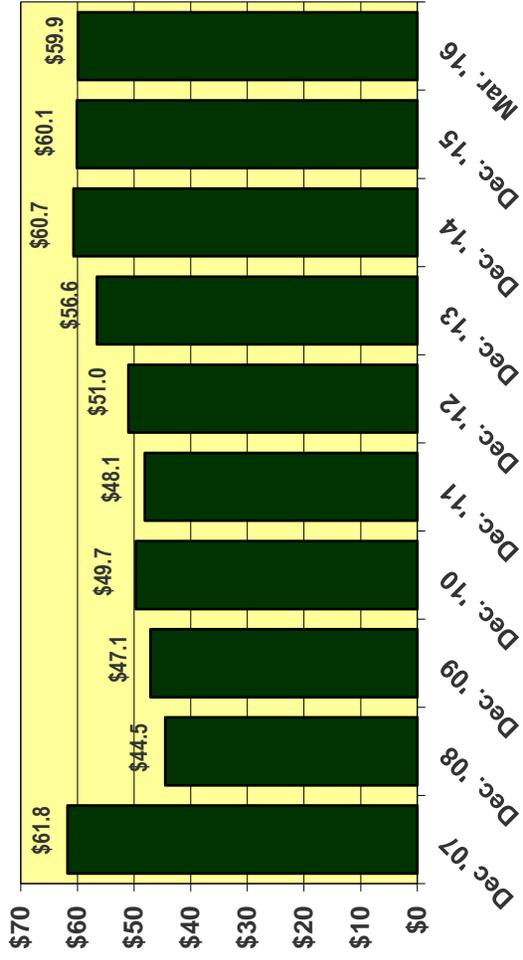
Investment Strategies	3/31/16	12/31/15
Domestic Equity	\$16,294	\$16,724
Private Equity	9,553	9,659
International Equity	9,208	9,034
Fixed Income	7,771	7,301
Real Estate & Infra.	6,276	6,157
Real Return & Opport.	4,852	4,681
Absolute Return	4,012	4,544
Short Term***	1,904	1,971
<b>TOTAL</b>	<b>\$59,870</b>	<b>\$60,071</b>

## Short Term Equivalents (in Billions)

Short Term Strategy***	\$1.9
Short Term in Other Inv. Strategies	0.9
<b>TOTAL SHORT TERM</b>	<b>\$2.8</b>

4.7% of Total Funds

## Market Value\* (Billions of Dollars)



## Market Value By Plan ~ 3/31/16 (in Millions)

	Pension Plan		OPEB**		Combined	
	Mkt. Value	%	Mkt. Value	%	Mkt. Value	%
MPSERS	\$42,266		\$3,927		\$46,193	77.2%
MSERS - (closed)	10,694		1,389		12,083	20.2%
MSPRS	1,240		101		1,341	2.2%
MJRS - (closed)	252		1		253	0.4%
<b>TOTAL</b>	<b>\$54,452</b>		<b>\$5,418</b>		<b>\$59,870</b>	<b>100.0%</b>



18th Largest DB Public Pension Fund in the U.S.  
19th Largest DB Pension Fund in the U.S.



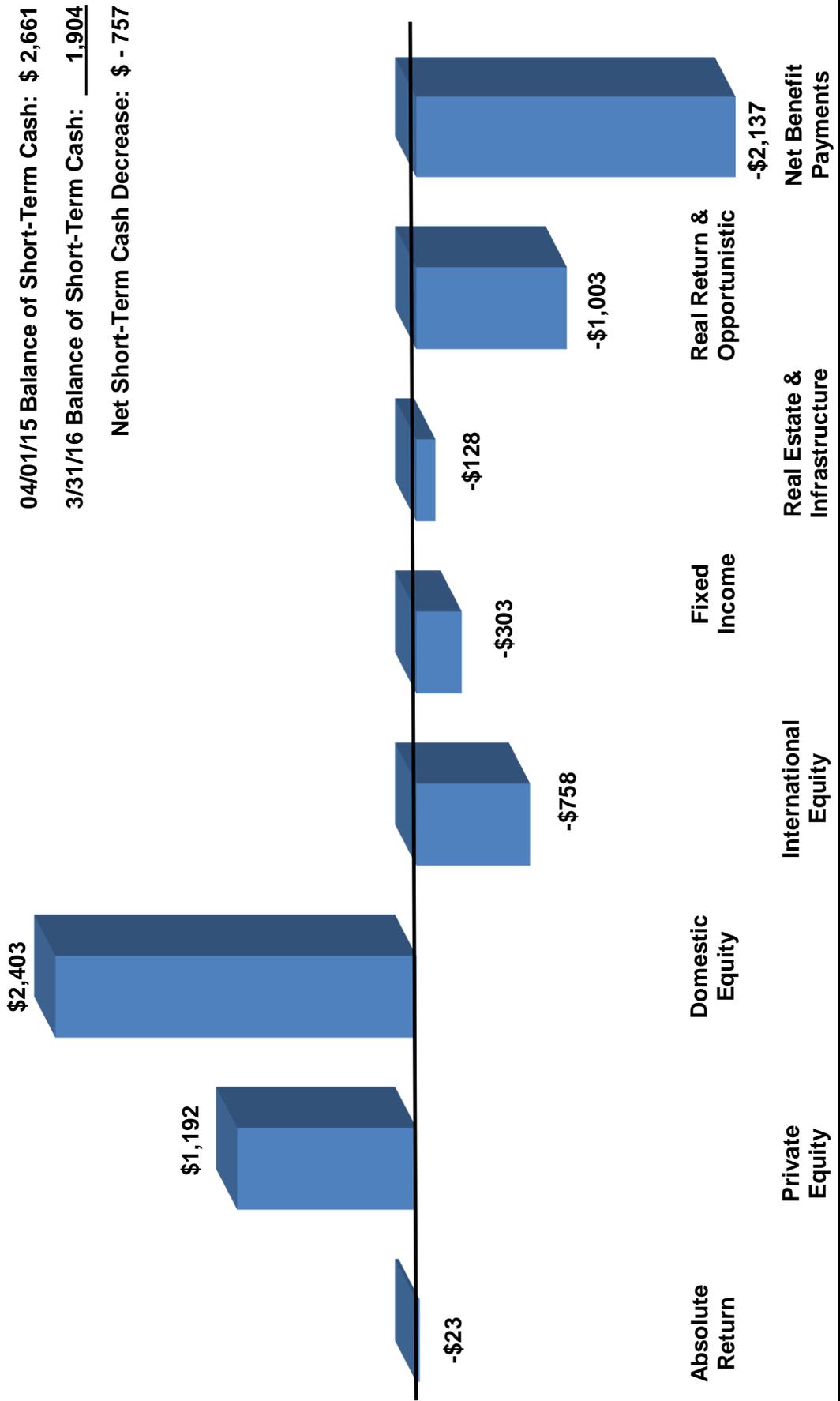
Pensions & Investments Survey - February 8, 2016 Issue

\*The combined net payout for the plans for FY 2015 was \$2.2 billion with \$19.9 billion paid out since 2008 (SOMCAFR). This represents the amount paid to beneficiaries in excess of employer and employee contributions.

\*\*OPEB - Other Post Employment Benefits

# Sources and Uses of Cash

## April 2015 ~ March 2016



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 As of 3/31/16

Asset Class	MPSPERS			MSERS			MSPRS			MJRS			SMRS
	Actual 3/31/16	Target 9/30/16	Target* 9/30/17	Ranges									
<b>Broad U.S. Equity</b>	27.2%	28.0%	28.0%	27.3%	28.0%	28.0%	27.2%	28.0%	28.0%	27.4%	28.0%	28.0%	20% - 50%
<b>Private Equity</b>	16.0%	17.0%	18.0%	16.0%	17.0%	18.0%	16.0%	17.0%	18.0%	16.0%	17.0%	18.0%	10% - 25%
<b>Broad Int'l Equity</b>	15.4%	15.5%	16.0%	15.4%	15.5%	16.0%	15.4%	15.5%	16.0%	15.5%	15.5%	16.0%	10% - 20%
<b>U.S. Fixed Income Core</b>	13.0%	11.5%	10.5%	13.0%	11.5%	10.5%	13.0%	11.5%	10.5%	13.0%	11.5%	10.5%	8% - 25%
<b>Real Estate / Infrastructure</b>	10.5%	10.0%	10.0%	10.6%	10.0%	10.0%	10.6%	10.0%	10.0%	10.6%	10.0%	10.0%	0% - 15%
<b>Real Return / Opportunistic</b>	8.1%	8.5%	9.5%	8.1%	8.5%	9.5%	8.1%	8.5%	9.5%	8.1%	8.5%	9.5%	0% - 15%
<b>Absolute Return</b>	6.7%	7.0%	6.0%	6.7%	7.0%	6.0%	6.7%	7.0%	6.0%	6.7%	7.0%	6.0%	0% - 12%
<b>Cash</b>	3.1%	2.5%	2.0%	2.9%	2.5%	2.0%	3.0%	2.5%	2.0%	2.7%	2.5%	2.0%	1% - 9%
<b>TOTAL</b>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

\*Complies with basket clause and international restrictions.



State of Michigan Retirement Systems

# MARKETS REVIEW AND OUTLOOK

Investment Advisory Committee Meeting

June 16, 2016



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



# CAPITAL MARKETS

## Return and Risk Assumptions, Benchmark and Outlook

*A starting point.*

<b>MPSERS Plan</b>	<b>Assumed Return* (Arithmetic)</b>	<b>Standard Deviation*</b>	<b>Trailing 10-Year (Benchmark**)</b>	<b>Tactical (Short Term) Expectations***</b>
Private Equity	11.3%	24.0%	11.2%	Hold
International Equity	9.7%	20.9%	1.9%	Hold
Domestic Equity	8.0%	17.4%	7.1%	Trim
Real Estate (Core)	6.1%	11.5%	6.2%	Trim
Absolute Return	5.4%	9.0%	5.0%	Hold
Real Ret/Opportunistic	7.3%	12.1%	7.5%	Add
Long-Term Fixed	2.5%	3.5%	4.9%	Hold
Short-Term	1.7%	1.0%	1.0%	Hold

\* Aon Hewitt Investment Consultants 2016 Long-Term Return/Risk Assumptions

\*\* Investment Policy Statement; Annualized Returns

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

## Overview

*Softening the outlook for risk assets.*

- Capital market assumptions used for determining strategic asset allocations are being reduced across the board, and especially for safer, publicly traded fixed income securities. This is the general opinion for most consultants, investment banks, and other market participants. The reason for this phenomenon is the low interest rate environment caused by the policies of the Federal Reserve and other central banks, as well as the run-up in prices for most risk assets over the past five years after the depths of the Great Recession.
- The broad domestic market index, S&P 1500, returned 1.2% for the year ending March 2016. Large cap stocks outperformed small cap stocks by 12.8% and growth style continued its run of beating value by 3.5% for the year. The recent ten-year stretch of growth stocks outperforming value stocks is one of the greatest on record rivaling the dot-com era and the Great Depression.
- Over the past one, three, five, seven, and ten years ending March 2016, the international market index, MSCI ACWI ex USA, underperformed the S&P 1500 index by -10.4%, -11.3%, -11.1%, -8.0%, and -5.1% annualized respectively.
- The 10-year U.S. Treasury closed March 2016 at 1.8%, 20 bps lower than one year prior. The curve is about average in terms of steepness, though it is as flat as it has been in the past 8.5 years. Spreads widened dramatically during the March 2016 quarter, but have normalized some since.
- Valuations in the commercial real estate market are full in some areas, though opportunities are selectively available. One clue to the next turn of the REIT Index is the direction of the bond market. Since June 2013, the movement in returns of the REIT Index and the Barclays U.S. Aggregate Bond index have been very similar.
- At the end of March 2016, commodity prices, as measured by the Thomson Reuters CRB Index, corrected by -20% since one year prior. Since its peak in 2008, prices are down by more than -60%, and prices are now less than at the March 2009 levels.

## **Domestic Equity**

*Is value at a turning point?*

- Since the seven year anniversary of the stock market bottom of 2009, the value of the U.S. stock market is up three-fold. On an annualized basis, this equates to 17.2% per year on average.
- However over the last twelve months the U.S. stock market return was just 1.2%, and from a technical perspective the market is losing some of its steam. Tactically selling into market strength, from the beginning of March 2015 through the end of March 2016, \$3 billion has been raised through selling of domestic equity.
- Valuation metrics are above average and the absolute returns over the next cycle will not likely be as strong as the historical average. Small cap stocks look slightly expensive by some measures.
- Over the past year ending March 2016, large cap stocks outperformed small cap stocks by 12.8%, one of the best relative 12-month periods since the late 1990's. Over the past three, five years, seven and ten years large has outperformed small-cap returns by 4.7%, 4.1%, 0.5% and 1.7% on an annualized basis.
- Over the past year, growth beat value by 3.5%; and over the past three, five, seven, and ten years by 1-3% annually. The recent ten-year stretch of growth stocks outperforming value stocks is one of the greatest on record rivaling the dot-com era and the Great Depression. In the next five years subsequent to those prior two periods of fantastic growth style outperformance, value went on to outperform by more than 10% annualized.
- The active portfolio has a pronounced value style overweight relative to the S&P 1500 benchmark. The portfolio trades at a discount on traditional value metrics such as P/E and P/B, and the largest sector overweight is in Financials.

## **International Equity**

*Weakness in emerging markets continue.*

- International equities continue to underperform domestic. Over the past one, three, five, seven, and ten years ending March 2016, the international market index, MSCI ACWI ex USA, underperformed the S&P 1500 index by -10.4%, -11.3%, -11.1%, -8.0%, and -5.1% annualized respectively.
- Within international equities, developed markets continue to outperform emerging markets. Over the past one, three, five, and seven years developed has outperformed emerging by 4.1%, 6.5%, 6.0% and 1.2% on an annualized basis. Over the past ten years, emerging has outperformed developed by 1.2%.
- The price trends (measured in local currency) of developed international and emerging market indexes are neutral.
- The plan is underweight international equity against a global benchmark (approximately 36% versus 50%) and it is also slightly underweight peers; 15.4% versus 17.6%. Over the past year ending March 2016, an additional \$750 million has been invested into developed international markets.
- Based on a price-to-earnings valuation multiple, excluding non-earning companies, developed international equity markets trade at a 10% discount to the U.S. counterparts, while emerging markets trade at over a 35% discount. However, it appears that most of this valuation gap is due to the sector weights of the non-U.S. indexes rather than a true valuation discrepancy.

## **Interest Rates**

*A flattening curve.*

- The 10-year U.S. Treasury closed March 2016 at 1.8%, 20 bps lower than one year prior. The curve is about average in terms of steepness, though it is as flat as it has been in the past 8.5 years.
- Spreads in both high yield and investment grade securities demonstrated significant widening during January and February of 2016 only to normalize by the end of the March quarter. At the end of March 2016, investment grade was about 30 bps and high-yield spreads were about 100 bps above their long-term averages.
- Inflation expectations are being priced lower in the bond markets. The ten-year breakeven rates at the end of March 2016 were priced at 1.6%, 40 bps below the average of the past five years and 20 bps lower than a year ago. This is also lower than the Fed's target rate of long-term 2% inflation; the market is betting against the Fed.
- The Index's sensitivity to changes in interest rates has slightly decreased since last year as measured by the modified adjusted duration. At the end of March 2016, the Barclays Aggregate Index had a duration of 5.4 compared to 5.9 a year ago. Credit risk offers some selective value.

## **Real Estate**

*Rich valuations and following the bond market.*

- The publicly traded FTSE Nareit REITs Index was up 4.8% over the past year ending March 2016, outperforming the broad domestic equity market by 5.5%. Over the past three and five years, the index is up 9.9% and 11.6% respectively.
- Though still a little below its all-time high, the FTSE Nareit REITs Index rallied almost 18% off the 2016 market lows.
- The REIT Index is priced modestly cheap relative to bonds, while other valuation metrics indicate that the index is very expensively priced. In other words, real estate is not expected to deliver high absolute returns over the longer term. However stretched the valuations have become, timing of the softer than normal returns is tricky.
- One clue to the next turn of the REITs Index is the direction of the bond market. Since June 2013, the movement in returns of the REITs Index and the Barclays U.S. Aggregate Bond index have been very similar.

## **Commodities**

*Rebounding some.*

- At the end of March 2016, commodity prices, as measured by the Thomson Reuters CRB Index, corrected by -20% since one year prior. Since its peak in 2008, prices are down by more than -60%, and prices are now less than at the March 2009 levels.
- Commodity prices may be rebounding though. From its February 2016 lows, crude oil ended April 75% higher, the same level it was nine months earlier. Food input prices were up over 11% from their 2016 lows, at the same level as a year ago.
- The U.S. dollar has lost some of its strength. As measured by the DXY Index, the U.S. dollar actually decreased in value over the past year ending in March 2016 by 3.5%. Over the past two years, the U.S. dollar is almost 20% higher though. The pull-back in the dollar was not entirely surprising, the ascent from 2014 – 2015 was at the high end.

# ECONOMIC OUTLOOK

## Select Historic Economic Growth with Forecasts

*An eye to 2017.*

Real GDP Growth Actual/Forecasts	2014	2015	2016	2017	2018
World	3.4	3.1	3.0	3.2	3.4
U.S.	2.4	2.4	1.8	2.3	2.1
Developed (G8)	1.6	1.7	1.5	1.8	1.8
Asia	4.8	4.8	4.7	4.8	5.0
EMEA	2.2	0.9	1.8	2.8	2.6
Europe	0.9	1.6	1.5	1.6	1.5
Latin America	1.0	-0.5	-1.2	2.0	2.0
China	7.3	6.9	6.5	6.3	6.4

\*Source: Bloomberg

## Economic Overview

*U. S. economy remains the bright spot.*

- The most recent reading of the annualized U.S. GDP growth was 0.5%, slightly below the consensus estimate of 0.7%. Current estimates for 2016 GDP growth for the U.S. is 1.8%. Coincidental economic indicators such as the Institute for Supply Management's Manufacturing and Non-Manufacturing PMI Indexes are above 50, indicating that there currently is a modest expansion in the U.S. economy.
- The jobs market is fairly healthy. The national unemployment rate is 5% and in April 2016 the 3-month average figures for both initial jobless and continuing claims were near the lowest levels in over 40 years. Anecdotally, wages are increasing across the U.S. However, wage growth has been depressed for a number of years prior, so it is difficult to become too concerned about wage-cost inflation right now.
- U.S. housing is a bright spot. At nearly 5.3 million, total existing home sales is at its highest level in eight years. Demand is more robust than supply; housing inventory-to-sales ratios are at the low end of a 25-year range. At 1.1 million, new housing starts are also at late 2007 levels.





State of Michigan Retirement Systems

# ABSOLUTE AND REAL RETURN REVIEW

Investment Advisory Committee Meeting

June 16, 2016



James L. Elkins  
Senior Investment Manager  
Short-Term, Absolute and Real Return Division



# EXECUTIVE SUMMARY

## Absolute Return

### Performance

MPSERS Plan	1-Year	3-Years	5-Years	7-Years	10-Years
Absolute Return	-6.7%	2.6%	3.0%	7.1%	N/A
HFRI FOF Conservative*	-3.1%	2.2%	1.6%	3.2%	N/A

\*One month lag on the index

- Total Absolute Return value was \$4 billion with a total one-year return of -6.7%. All strategies across the portfolio contributed to the weak result, but the performance can be primarily attributed to poor performance for the broader equity long-short space, which experienced the most challenged alpha environment in observed history.

### Strategy Update

- The objective of the Absolute Return portfolio is to diversify the total plans' holdings targeting returns above investment grade fixed income with lower volatility than the equity portfolio. The portfolio utilizes a diverse mix of managers that invest both long and short to target specific exposures and hedge out unwanted risk.
- In terms of strategy allocations, we remain cautious on taking material directional risks in the portfolio and continue to shift towards more diversifying, lower net exposures in fundamental and quantitative strategies. Given recent dynamics in credit markets, giving way to substantial dislocations, we expect the liquid strategies to be a potential source of opportunity going forward. Tactically, we intend to shift capital into this space in hopes of better capturing these opportunities.
- During the quarter, no new commitments were closed.

### Market Environment

- Multi-Strategy/Event – The strategy was largely flat for the quarter. Positive performance was driven by managers with emerging market debt exposure, particularly Argentina, as well as managers with select exposure to a few midstream and E&P positions.
- Credit – Performance for credit managers was negative for the quarter. Spreads across credit products widened further early in the quarter, causing much of the lag in performance. Lower-quality bonds underperformed much of the start to the quarter, with distressed issuers down materially.
- Equity – Performance over the quarter was challenged and the strategy as a whole ended the quarter as the largest detractor to performance. Over the last six months, widely owned hedge fund longs under-performed the market, while widely held hedge fund shorts modestly out-performed the market. As hedge funds de-risked throughout February and March, crowded shorts were squeezed to levels unseen since 2009. By de-risking their portfolios, equity managers were largely unable to participate in the market rally in March, further widening the gap between the S&P and the strategy more broadly.

## **Real Return and Opportunistic**

### **Performance**

<b>MPSERS Plan</b>	<b>1-Year</b>	<b>3-Years</b>	<b>5-Years</b>	<b>7-Years</b>	<b>10-Years</b>
Real Return and Opport.	3.9%	11.6%	8.6%	N/A	N/A
Custom Benchmark	6.9%	6.9%	7.2%	N/A	N/A

- Total Real Return and Opportunistic value was \$4.8 billion with a total one-year return of 3.9%. The portfolio held up in weak performance period for energy and other commodity exposures.

### **Strategy Update**

- The objective of the Real Return & Opportunistic portfolio is to provide an inflation hedge or to gain exposure to attractive opportunities that may not fit in another plan portfolio.
- In terms of strategy allocations, we continue to favor private credit opportunities over equity in most situations due to the expected return for the level of risk. This has been a consistent theme for many quarters that has continually yielded a healthy pipeline of opportunities as financial markets evolve in the current regulatory environment.
- The Real Return & Opportunistic portfolio has approximately \$2.3 billion of unfunded commitments. New commitments closed during the quarter include:
  - \$250 million in HPS Red Cedar Fund, LP, a middle market direct lending separate account, managed by Highbridge Principal Strategies, LLC.
  - \$250 million SJC Direct Lending Fund III, LP, a middle market direct lending fund, managed by Czech Asset Management.
  - \$25 million Warwick (SMRS) Co-Invest, LP, a non-operated energy working interests.
  - \$20 million Specialty Equity Strategy, LP, an opportunistic real estate fund, managed by JP Morgan.

### **Market Environment**

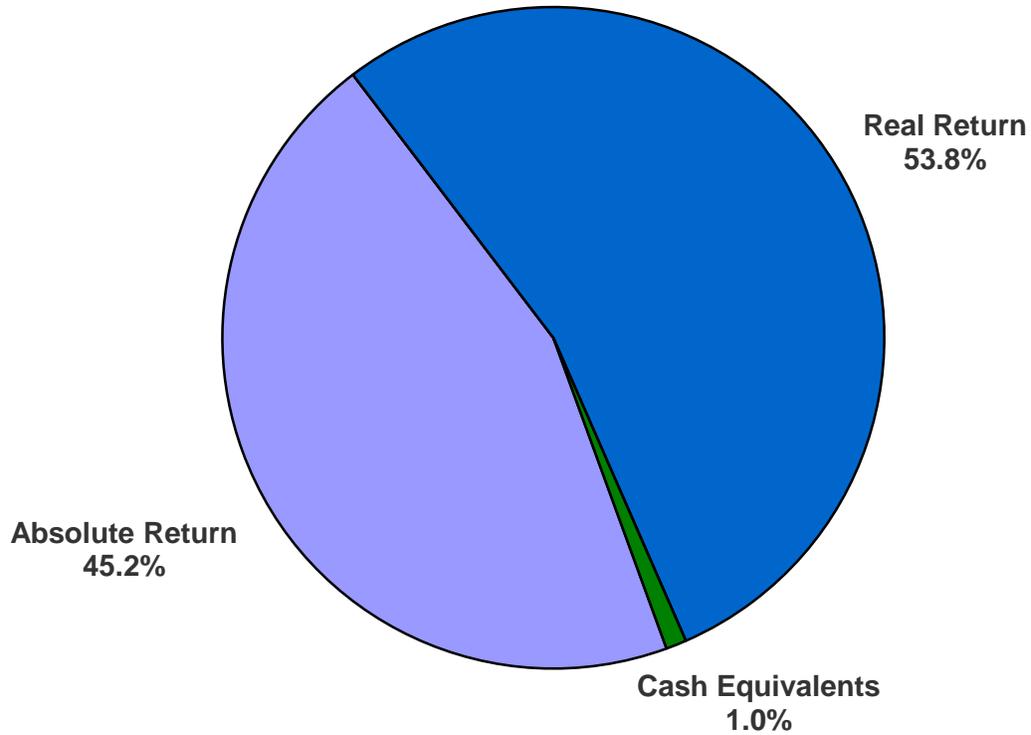
- Senior Secured Credit – At the end of March, the spread on the LSTA Leveraged Loan Index was L+581, 42 basis points tighter than at the start of 2016. The yield on the Merrill Lynch High Yield Master II Index stood at 8.39%, 37 bps tighter than at the start of 2016. With four new defaults in March, the default rate by principal amount increased to 1.75%. Despite the uptick in the number of defaulted loans (1.54% at the start of the year), it should be noted that default activity continues to remain concentrated within the energy and metals and mining industries as well as well below the 3.1% long-term average.
- Direct Lending – As of March 31, 2016, the yield in the syndicated bank loan market was 6.48%. As a source of comparison, the weighted average unlevered cash coupon (not including upfront fees or discount accretion) of all of the loans in the STARR direct lending portfolio was 8.16% as of that same date. This difference totals approximately 170 bps over the syndicated bank loan market, truly highlighting the consistent premium that we believe can be achieved by investing in private credit.
- Energy Funds –For the quarter, Spot WTI crude prices were up 3.5% but long-dated contracts decreased by 4-8%, with the larger losses sustained in the contracts past 2019. Spot natural gas prices were down 16%, with long-dated contracts sustaining smaller losses generally in the 2-4% range. With only approximately 27% of our energy commitments presently invested, a substantial amount of uncalled commitments remain ready to capitalize on the opportunities presented by lower energy prices should they persist.



# SMRS

## Absolute, Real Return and Opportunistic

### 3/31/16



Market Value in Millions				
	3/31/16		12/31/15	
Absolute Return	\$4,002	45.2%	\$4,533	49.1%
Real Return	4,772	53.8%	4,621	50.1%
Cash Equivalents	90	1.0%	71	0.8%
<b>Total Investments</b>	<b>\$8,864</b>	<b>100.0%</b>	<b>\$9,225</b>	<b>100.0%</b>



**SMRS**  
**Absolute Return**  
**3/31/16**

**Net Market Values by Entity**

	<u>Net Market Value</u>	
Apollo Offshore Credit Strategies Fund Ltd.	\$	138,667,430
Drawbridge Opportunities Fund		186,501,944
* EnTrust White Pine Partners L.P.		321,017,328
JM IV, LP		27,500,915
MP Securitized Credit Master Fund, L.P.		65,334,187
* Tahquamenon Fund L.P.		3,170,048,924
Visium Balanced Fund LP		92,573,643
<b>Total Market Value</b>	<b>\$</b>	<b>4,001,644,371</b>

\* Fund of Funds

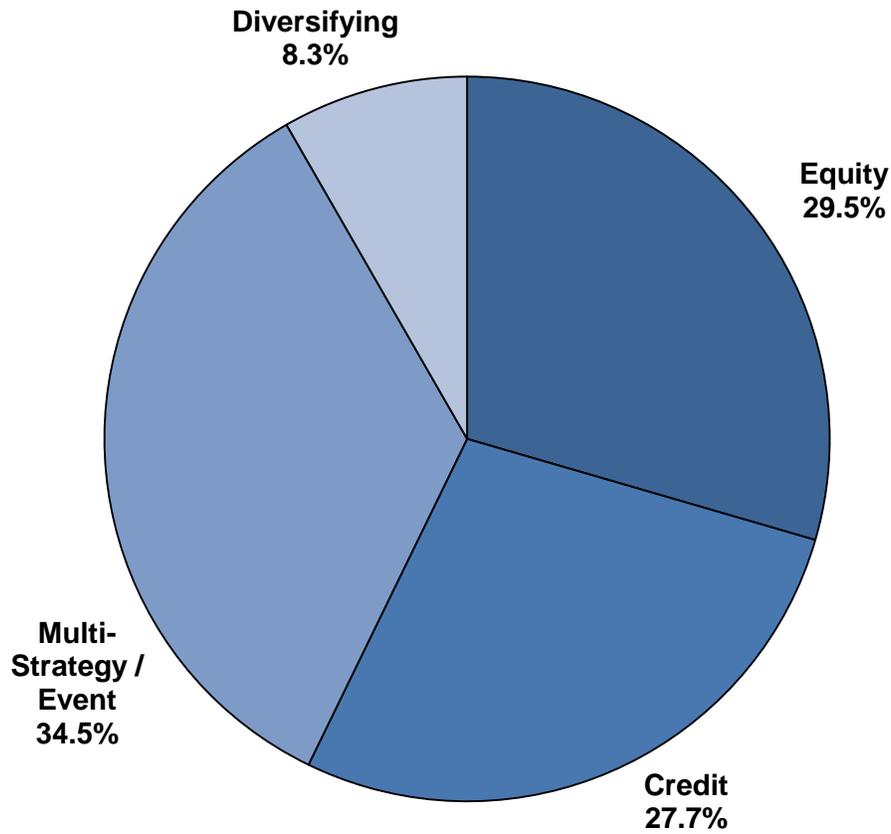


# SMRS

## Absolute Return

### 3/31/16

### Investments By Strategy



Strategy Breakdown			
Underlying Funds:	97	Median Position Size:	0.4%
Strategies:	4	Average Position Size:	1.0%
Relationships:	8	Largest Position Size:	9.5%



# SMRS

## Real Return and Opportunistic 3/31/16

### Net Market Value by Entity

	<u>Net Market Value</u>	<u>Unfunded Commitment</u>
* Abernathy Fund I, LLC	\$ 318,913,098	\$ 82,690,748
Apollo Credit Opportunities Fund III LP	63,182,941	29,045,708
Apollo European Principal Finance Fund II	47,954,005	13,885,979
Apollo Financial Credit Investments Fund II	369,486,615	145,406,390
Apollo HK TMS Investments Holdings LP	20,218,018	-
Apollo Offshore Credit Fund Ltd	234,920,630	-
Apollo Offshore Structured Credit Recovery Fund II	4,982,806	-
Apollo Offshore Structured Credit Recovery Fund III	119,588,428	96,701,504
Blackstone Strategic Capital Holdings LP	21,183,608	104,297,296
Blue Peninsula Fund LP	65,825,859	145,160,000
Carlyle Intl Energy Partners LP	12,027,355	38,920,030
Carlyle Energy Mezzanine Opportunity Fund	3,358,502	46,221,394
* Content Holdings LLC	483,291,825	96,557,002
Elegantree Fund SPC	45,138,014	5,076,770
Energy Recapitalization and Restructuring Fund LP	40,812,067	18,700,269
ERR Michigan Holdings LP	7,346,512	2,335,070
* Fairfield Settlement Partners, LLC	65,995,344	15,758,404
FCO MA MI LP	42,467,521	66,891,765
Fortress MSR Opportunities Fund I A LP	113,469,589	-
Fortress Transport	28,246,153	-
* Galaxie Ave. Partners, LLC	99,900,000	-
GSO Credit Alpha Fund LP	28,983,393	66,891,765
Highbridge Principal Strategies - Specialty Loan Fund III	132,132,470	13,634,934
Hopen Life Sciences Fund II	6,622,354	3,900,000
** <b>HPS Red Cedar Fund</b>	<b>39,639,678</b>	<b>210,324,190</b>
Innocor	30,000,000	-
JP Morgan Global Maritime Investment Fund LP	82,216,303	33,458,310
KANG Fund LP	13,297,615	-
KKR EI&G Fund	25,609,153	37,563,014
KKR Lending Partners I LP	62,158,494	13,282,965
KKR Lending Partners II LP	34,476,815	67,156,238
Lakewater LLC, Series 1	129,849,465	5,367,918
Lakewater LLC, Series 2	284,230,653	14,111,838
Lakewater LLC, Series 3	332,369,038	-
Lakewater LLC, Series 4	60,030,936	16,529,650
Lakewater LLC, Series 5	50,218,047	199,307,336
Merit Energy Partners LP	902,593	34,154,498
MidCap FinCo Holdings LTD	295,199,826	-
Napier Park Aircraft Leasing Vehicle I, LLC	32,340,339	65,356,807
Orion Coinvest III LP	20,408,212	2,236,552
Orion Mine Finance Fund 1A LP	42,617,833	6,156,537

	<u>Net Market Value</u>	<u>Unfunded Commitment</u>
Orion Mine Finance Fund I LP	108,333,445	12,184,268
Renaissance Venture Cap Fund II LP	6,871,620	18,500,000
REOG Fund II Coinvest LP	11,312,237	15,579,217
Ridgewood Energy Oil & Gas II	56,445,492	55,840,665
Ridgewood Energy Oil & Gas III	5,991,413	223,864,278
RPEP SMRS Holdings, LLC	65,000,021	-
SJC Direct Lending Fund I, LP	41,587,959	17,165,637
SJC Direct Lending Fund II, LP	290,663,208	37,146,696
** <b>SJC Direct Lending Fund III, LP</b>	<b>54,948,379</b>	<b>195,051,621</b>
* Social Network Holdings, LLC	158,731,928	-
** <b>Specialty Equity Strategy LP</b>	<b>924,616</b>	<b>19,075,384</b>
Varo Coinvestment LP	12,715,481	940,992
Warwick Energy Partners III	39,335,687	9,673,667
** <b>Warwick (SMRS) Co-Invest, L.P.</b>	<b>4,535,919</b>	<b>20,464,081</b>
Income Accruals	2,663,014	
	<hr/>	<hr/>
<b>Total Market Value</b>	<b>\$ 4,771,672,525</b>	<b>\$ 2,322,567,388</b>
	<hr/> <hr/>	<hr/> <hr/>

\* Fund of Funds

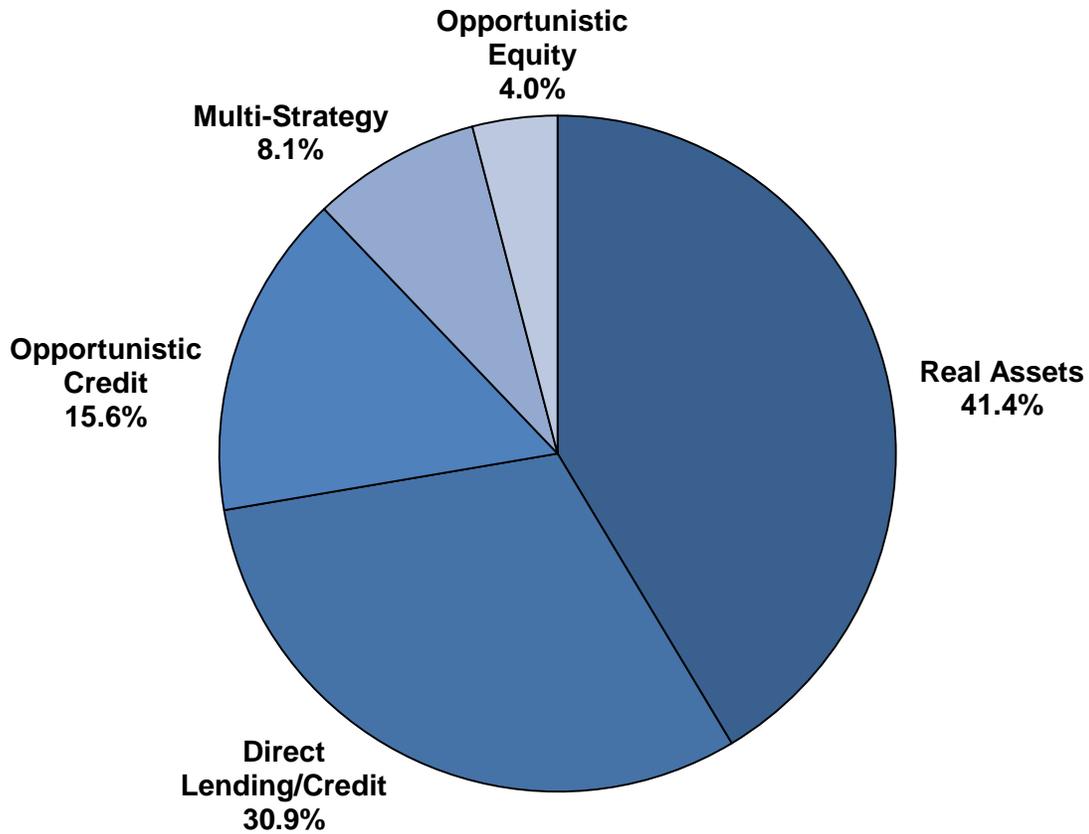
\*\* **New Commitment**



# SMRS

## Real Return and Opportunistic 3/31/16

### Investments By Strategy



Investment Strategy	
Real Assets	\$1,973,984,928
Direct Lending/Credit	\$1,474,932,548
Opportunistic Credit	\$741,943,567
Multi-Strategy	\$384,738,957
Opportunistic Equity	\$193,409,510

State of Michigan Retirement Systems

# DOMESTIC EQUITY REVIEW

Investment Advisory Committee Meeting

June 16, 2016



Jack A. Behar, CFA  
Senior Investment Manager  
Stock Analysis Division



## EXECUTIVE SUMMARY

### Performance

<b>Total Domestic Equity, Gross</b>	<b>1-Year</b>	<b>3-Years</b>	<b>5-Years</b>	<b>7-Years</b>	<b>10-Years</b>
Annualized Returns	-0.7%	11.6%	11.0%	16.9%	7.0%
S&P 1500	1.2%	11.6%	11.4%	17.2%	7.1%
Peer Median Return	-1.4%	10.8%	10.4%	16.5%	6.6%
Rank vs. Peers	47	24	24	41	34

<b>Total Domestic Equity, Net</b>	<b>1-Year</b>	<b>3-Years</b>	<b>5-Years</b>	<b>7-Years</b>
Annualized Returns	-0.7%	11.4%	10.9%	16.7%
S&P 1500	1.2%	11.6%	11.4%	17.2%
Lipper Multi Core	-3.7%	9.2%	9.1%	15.7%
Rank vs. Lipper Multi Core	25	18	26	34

<b>Total Active Equity, Net</b>	<b>1-Year</b>	<b>3-Years</b>	<b>5-Years</b>	<b>7-Years</b>
Annualized Returns	-2.3%	11.2%	10.5%	16.3%
S&P 1500	1.2%	11.6%	11.4%	17.2%
Lipper Multi Core	-3.7%	9.2%	9.1%	15.7%
Rank vs. Lipper Multi Core	39	21	32	39

- In a difficult stretch for active management, Total Domestic Equity trailed the S&P 1500 in all time periods.
  - Gross of fees, Total Domestic Equity's performance was in the top quartile of its peer group over three and five years and the top half of its peer group over other time periods.
  - Net of fees, Total Domestic Equity's performance versus peers was significantly better than described above, because SMRS pays roughly 6 basis points (bps) per year in both active and passive equity management fees versus its peer group at 30 bps.
- Total Active Equity also trailed its benchmark in all time periods. Such performance, while not satisfactory, was generally at or near the top third of its peer group.
  - Growth stocks have outperformed value stocks by a cumulative 37% over the past seven years, and 65% over the past ten years, which has been a headwind to performance.
    - Historically value stocks have outperformed growth stocks over extended periods of time.

- Total Active Equity remains significantly over-weighted to value stocks, which will provide the portfolio with a substantial tailwind if and when this trend reverses.

## **Strategy Update**

- LA Capital is now Total Active Equity's largest externally managed relationship, totaling over \$1 billion in assets post first quarter.
- Post first quarter LA Capital Deep Value is the division's largest externally managed fund, as a result of its attractively priced portfolio and solid risk process.
- The division hired ARK Investments, a thematic growth manager, based on the firm's superior due diligence process and the role it can play as a strategic research partner to the SMRS investment team.
- The division continues to pay 12 bps per year in fees across the division, or less than those of the Vanguard S&P 500 Index Fund (VFINX).
- Total Active Equity's portfolio continues to trade at an estimated 20% discount to the S&P 1500 on the basis of normalized earnings, with similar volatility and rates of growth going forward.
  - Six of the division's top ten holdings trade at PE ratios of less than 13x. All are high quality companies with significant competitive advantages.
  - Total Active Equity remains over-weighted to both the financial sector and to defensive stocks. It is now also slightly over-weighted to the technology sector post first quarter.
  - We expect Total Active Equity's PE ratio to at least partially converge with that of the S&P 1500 over the next five years, driving annualized outperformance.
  - If PE ratios do not converge, we nonetheless expect long-term outperformance on the basis of a higher net dividend yield (dividends + buybacks) than the benchmark alongside similar or faster rates of earnings reinvestment.

## **Market Environment and Outlook**

- At ~18.5x normalized earnings, equity markets are slightly rich relative to history, but attractively priced for an environment where bond yields stay abnormally low.
- Assuming a 2.0% normalized dividend yield, expected share count reductions of 1.6% via share buybacks and 4.7% long-term expected earnings growth, the S&P 1500 is poised to return approximately 8.3% over the long-term.
  - This compares to the 30-year U.S. Treasury at 2.5%, and a historical average return for the S&P 500 of 9.5% from 1928 - 2015.



# SMRS

## Domestic Equities

3/31/16

Markets	Amount	Total	% of Total
<b>Internal</b> (in millions)			
Indexed Portfolios	\$7,276		
<b>Total Indexed</b>		<b>\$7,276</b>	<b>44.7%</b>
<b>Internal</b>			
Active Portfolios	\$5,468		
<b>Total Active</b>		<b>\$5,468</b>	<b>35.2%</b>
<b>Active</b>			
Los Angeles Capital	\$834		
Fisher Investments	726		
Seizert Capital Partners	591		
Clarkston Capital Partners	469		
Attucks Asset Management	224		
ARK Investments	215		
Bivium Capital	205		
Northpointe Capital	153		
Munder Capital Management	133		
<b>Total Active</b>		<b>\$3,550</b>	<b>21.8%</b>

**TOTAL**

**\$16,294**

**100.0%**

## Combined Active Equity Portfolio, Return Expectations 3/31/16

### Return Assumption Estimates

	<u>Expected Return ****</u>	<u>Normal Dividend Yield **</u>	<u>LT Growth Rate ***</u>
<b>SAD Combined Active Equity</b>	<b>9.9%</b>	<b>5.4%</b>	<b>4.5%</b>
S&P 1500 All-Cap	8.3%	3.6%	4.7%
S&P 500 Large-Cap	8.3%	3.8%	4.5%
S&P 500 Historical Average	9.5%		
S&P 400 Mid-Cap	8.2%	2.2%	6.0%
S&P 600 Small-Cap	7.8%	0.8%	7.0%
US 30-Year Treasury	2.5%	2.5%	0.0%

### Normal Dividend Yield Decomposition

	<u>Normal Price/Earnings</u>	<u>Normal Earnings Yield*</u>	<u>Normal Payout Ratio</u>	<u>Normal Dividend Yield**</u>
<b>SAD Combined Active Equity</b>	<b>13.7</b>	<b>7.3%</b>	<b>74%</b>	<b>5.4%</b>
S&P 1500 All-Cap	18.6	5.4%	66%	3.6%
S&P 500 Large-Cap	18.2	5.5%	69%	3.8%
S&P 400 Mid-Cap	19.7	5.1%	44%	2.2%
S&P 600 Small-Cap	20.9	4.8%	18%	0.8%

### Portfolio and Benchmark Risk Estimates

	<u>Expected Return ****</u>	<u>Standard Deviation</u>	<u>Expected Return/Volatility</u>
<b>SAD Combined Active Equity</b>	<b>9.9%</b>	<b>16.4%</b>	<b>0.6</b>
S&P 1500 All-Cap	8.3%	16.5%	0.5
S&P 500 Large-Cap	8.3%	16.6%	0.5
S&P 400 Mid-Cap	8.2%	16.9%	0.5
S&P 600 Small-Cap	7.8%	17.8%	0.4
US 30-Year Treasury	2.5%	28.4%	0.1

\*Earnings Yield = Earnings/Price

\*\*Includes Share Buybacks

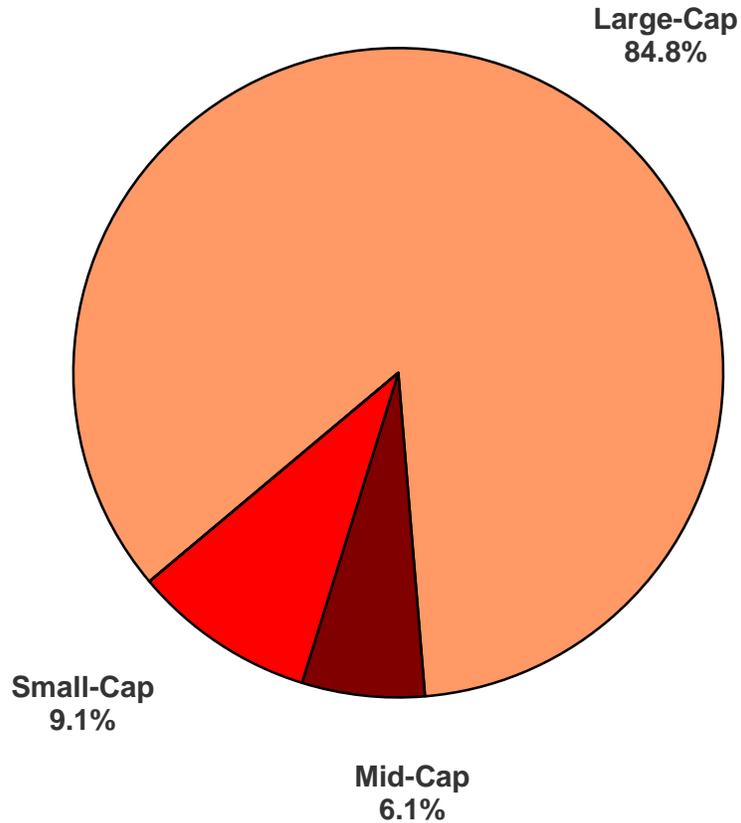
\*\*\*LT Growth Rate Calculation: Return on Equity \* (1-Dividend Payout Ratio)

\*\*\*\*Expected Return Formula: Dividend Yield + LT Growth Rate



# SMRS

## Domestic Equity Exposure By Market Cap 3/31/16



### Market Value in Millions

	3/31/16		
	<u>Assets</u>	<u>Percent</u>	<u>S&amp;P 1500</u>
Large-Cap (>\$10B)	\$13,817	84.8%	85.8%
Mid-Cap (>\$4 <\$10B)	994	6.1%	8.0%
Small-Cap (<\$4B)	1,483	9.1%	6.2%
<b>Total Domestic Equity</b>	<b><u>\$16,294</u></b>	<b><u>100.0%</u></b>	<b><u>100.0%</u></b>



# SMRS

## Domestic Equities Composite 3/31/16

<b>Date:</b>	<u>3/31/16</u>	<u>12/31/15</u>	<u>9/30/15</u>	<u>6/30/15</u>
Assets (\$million):	\$16,294	\$16,724	\$16,605	\$18,521
Number of Securities:	1,305	1,258	1,217	1,209
Active Share:	35%	34%	34%	34%

Benchmark: S&P 1500

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

<b>Characteristics:</b>	<u>SMRS</u>	<u>S&amp;P 1500</u>
Weighted Average Capitalization (\$billion):	\$141.6	\$125.3
Trailing 12-month P/E:	16.7x	19.6x
Forecast P/E:	15.1x	17.0x
Price/Book:	2.4x	2.6x
Beta:	1.00	1.00
Dividend Yield:	2.3%	2.1%
3-5 Year EPS Growth Estimate:	10.4%	10.2%
Return on Equity:	14.4%	13.3%

### TOP TEN HOLDINGS - Domestic Equities 3/31/16

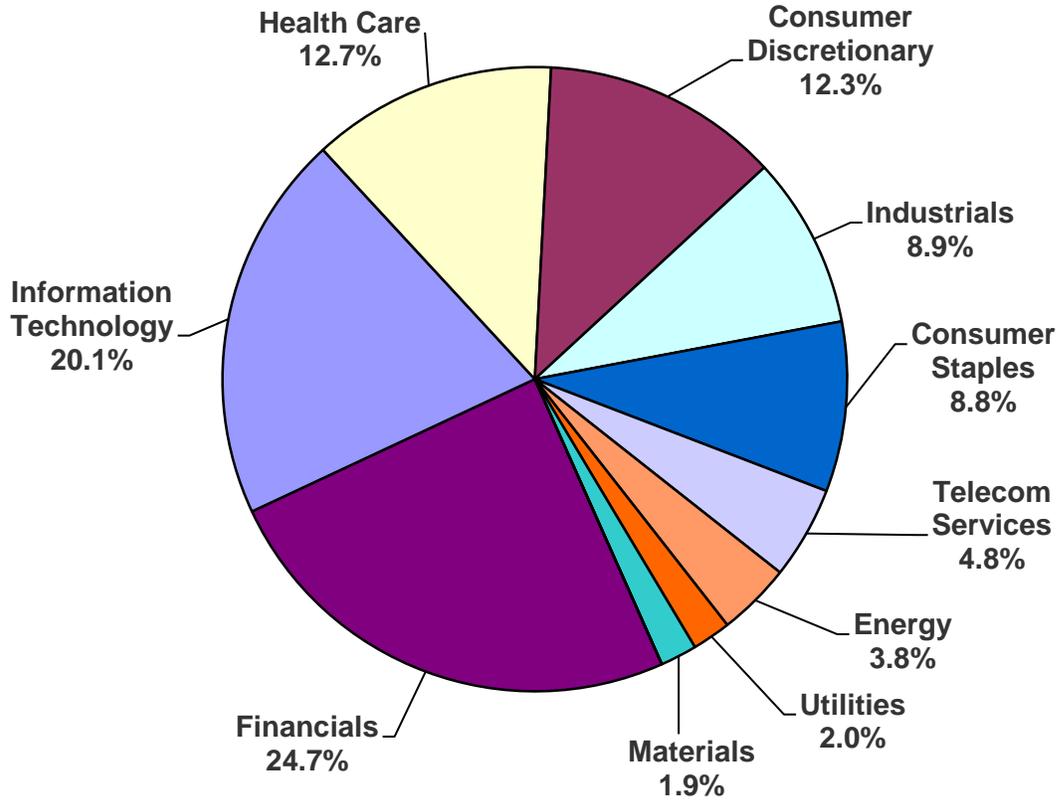
	<u>Portfolio Weight</u>	<u>Total Shares</u>	<u>3/31/16 Price</u>	<u>YTD16 Total Return</u>	<u>Market Value</u>
Wells Fargo & Company	4.1%	13,731,469	\$48.36	-10.3%	\$664,053,841
Verizon Communications, Inc.	3.8%	11,504,511	\$54.08	18.5%	622,163,955
Apple, Inc.	3.5%	5,290,081	\$108.99	4.1%	576,565,928
SPDR S&P 500 ETF Trust	2.8%	2,189,950	\$205.52	1.3%	450,078,524
U.S. Bancorp	2.3%	9,150,496	\$40.59	-4.3%	371,418,633
Microsoft Corporation	2.2%	6,561,979	\$55.23	0.3%	362,418,100
Gilead Sciences, Inc.	2.2%	3,847,301	\$91.86	-8.8%	353,413,070
Wal-Mart Stores, Inc.	1.8%	4,333,133	\$68.49	12.6%	296,776,279
Home Depot, Inc.	1.7%	2,024,379	\$133.43	1.4%	270,112,890
Berkshire Hathaway, Inc. Class B	<u>1.6%</u>	1,888,623	\$141.88	7.5%	<u>267,957,831</u>
<b>TOTAL</b>	<u>26.0%</u>				<u>\$4,234,959,051</u>



# SMRS

## Domestic Equity By Sector

### 3/31/16



<b>Market Value in Millions</b>				
<b>3/31/16</b>				
	<u>Assets</u>	<u>Percent</u>	<u>Benchmark</u>	<u>Difference</u>
Financials	\$4,025	24.7%	16.6%	8.1%
Information Technology	3,283	20.1%	20.4%	-0.3%
Health Care	2,073	12.7%	13.8%	-1.1%
Consumer Discretionary	2,001	12.3%	13.0%	-0.7%
Industrials	1,445	8.9%	10.7%	-1.8%
Consumer Staples	1,442	8.8%	9.7%	-0.9%
Telecom Services	775	4.8%	2.5%	2.3%
Energy	625	3.8%	6.4%	-2.6%
Utilities	320	2.0%	3.7%	-1.7%
Materials	305	1.9%	3.2%	-1.3%
<b>Total</b>	<b><u>\$16,294</u></b>	<b><u>100.0%</u></b>	<b><u>100.0%</u></b>	

Benchmark: S&P 1500



# SMRS

## Actively Managed Composite

### 3/31/16

Date:	<u>3/31/16</u>	<u>12/31/15</u>	<u>9/30/15</u>	<u>6/30/15</u>
Assets (\$million):	\$9,018	\$9,517	\$9,118	\$10,222
Numbers of Securities:	969	922	888	872
Active Share:	63%	59%	62%	61%

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.

Characteristics:	<u>SMRS</u>	<u>S&amp;P 1500</u>
Weighted Average Capitalization (\$billion):	\$150.6	\$125.3
Trailing 12-month P/E:	15.2x	19.6x
Forecast P/E:	13.9x	17.0x
Price/Book:	2.3x	2.6x
Beta:	1.00	1.00
Dividend Yield:	2.4%	2.1%
3-5 Year EPS Growth Estimate:	10.5%	10.2%
Return on Equity:	15.1%	13.3%

### TOP TEN HOLDINGS - Actively Managed 3/31/16

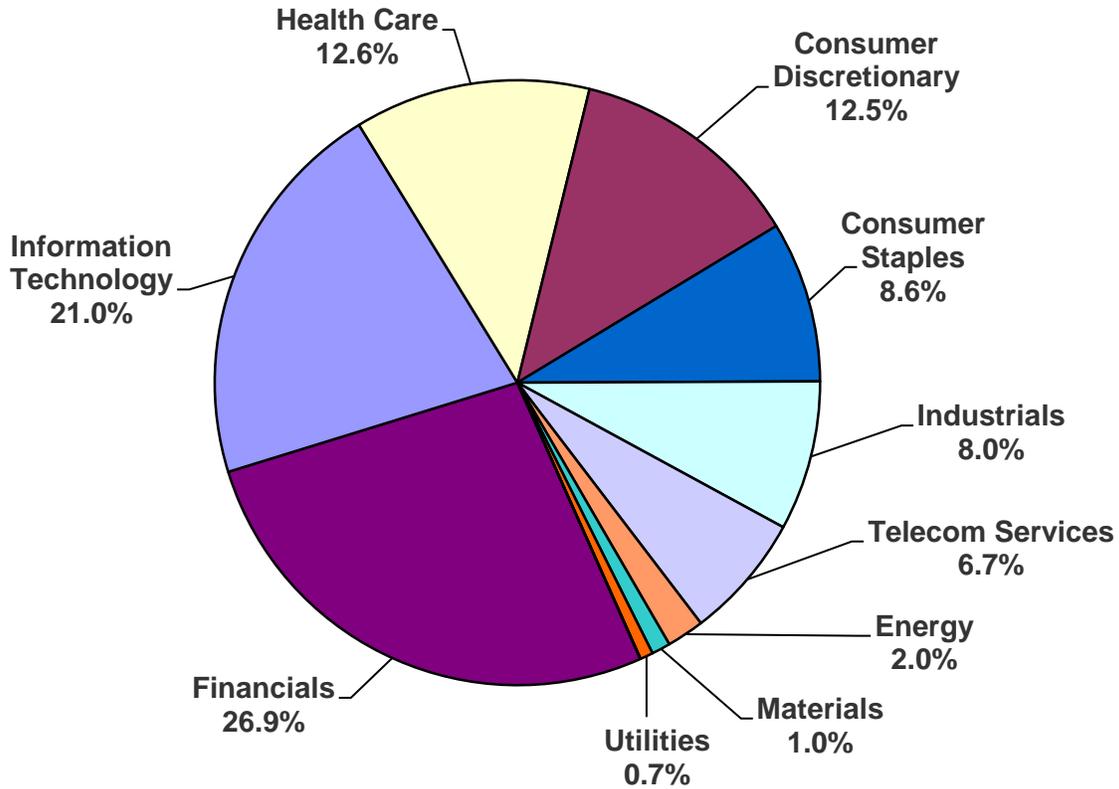
	<u>Portfolio Weight</u>	<u>Total Shares</u>	<u>3/31/16 Price</u>	<u>YTD16 Total Return</u>	<u>Market Value</u>
Wells Fargo & Company	6.5%	12,140,835	\$48.36	-10.3%	\$587,130,781
Verizon Communications, Inc.	6.1%	10,101,840	\$54.08	18.5%	546,307,507
Apple, Inc.	4.1%	3,381,050	\$108.99	4.1%	368,500,640
U.S. Bancorp	3.9%	8,588,158	\$40.59	-4.3%	348,593,333
Gilead Sciences, Inc.	3.4%	3,376,689	\$91.86	-8.8%	310,182,652
Wal-Mart Stores, Inc.	2.9%	3,792,899	\$68.49	12.6%	259,775,653
Microsoft Corporation	2.4%	3,838,710	\$55.23	0.3%	212,011,953
Home Depot, Inc.	2.3%	1,587,839	\$133.43	1.4%	211,865,358
Aflac, Inc.	2.3%	3,240,625	\$63.14	6.2%	204,613,063
Berkshire Hathaway, Inc. Class B	<u>2.2%</u>	1,417,957	\$141.88	7.5%	<u>201,179,739</u>
TOTAL	<u>36.0%</u>				<u>\$3,250,160,677</u>



# SMRS

## Active Equity By Sector

### 3/31/16



<b>Market Value in Millions</b>				
<b>3/31/16</b>				
	<u>Assets</u>	<u>Percent</u>	<u>Benchmark</u>	<u>Difference</u>
Financials	\$2,426	26.9%	16.6%	10.3%
Information Technology	1,895	21.0%	20.4%	0.6%
Health Care	1,139	12.6%	13.8%	-1.2%
Consumer Discretionary	1,122	12.5%	13.0%	-0.5%
Consumer Staples	772	8.6%	9.7%	-1.1%
Industrials	724	8.0%	10.7%	-2.7%
Telecom Services	604	6.7%	2.5%	4.2%
Energy	183	2.0%	6.4%	-4.4%
Materials	86	1.0%	3.2%	-2.2%
Utilities	67	0.7%	3.7%	-3.0%
<b>Total</b>	<b><u>\$9,018</u></b>	<b><u>100.0%</u></b>	<b><u>100.0%</u></b>	

Benchmark: S&P 1500

## Manager Performance - Net of Fees

3/31/16

<u>Fund Name</u>	<u>Market Value</u>	<u>1-Year</u>	<u>3-Years</u>	<u>5-Years</u>	<u>7-Years</u>	<u>Inception</u>	<u>Inception Date</u>
<b>SMRS Large-Cap Core</b>	<b>\$2,276,840,592</b>	<b>-6.0%</b>	<b>11.8%</b>	<b>11.4%</b>	<b>17.2%</b>	<b>6.4%</b>	<b>8/31/07</b>
S&P 500		1.8%	11.8%	11.6%	17.0%	6.4%	
Style & Risk Adjusted Benchmark		-2.0%	8.1%	9.2%	15.9%	5.4%	
Lipper Large-Cap Core		-0.9%	10.0%	10.0%	15.5%	5.5%	
<i>Excess Return</i>		-7.8%	-0.1%	-0.2%	0.2%	0.0%	
<i>Alpha</i>		-4.0%	3.7%	2.2%	1.3%	1.0%	
<i>Pct Rank vs Lipper Large-Cap Core</i>		95	16	19	12	23	
<b>SMRS Large-Cap Growth</b>	<b>1,598,588,542</b>	<b>0.4%</b>	<b>14.5%</b>	<b>12.9%</b>	<b>17.3%</b>	<b>8.7%</b>	<b>5/31/05</b>
S&P 500 Growth Index		3.5%	14.0%	13.1%	17.7%	8.7%	
Style & Risk Adjusted Benchmark		2.6%	13.8%	12.8%	18.1%	8.8%	
Lipper Large Growth		-1.1%	12.2%	10.9%	16.4%	8.2%	
<i>Excess Return</i>		-3.1%	0.6%	-0.2%	-0.5%	-0.1%	
<i>Alpha</i>		-2.2%	0.7%	0.0%	-0.8%	-0.2%	
<i>Pct Rank vs Lipper Large-Cap Growth</i>		34	10	14	30	34	
<b>SMRS All-Cap Garp</b>	<b>980,949,047</b>	<b>-2.2%</b>	<b>11.4%</b>	<b>--</b>	<b>--</b>	<b>13.4%</b>	<b>4/30/11</b>
S&P 1500 Super Composite		1.2%	11.6%	--	--	11.4%	
Style & Risk Adjusted Benchmark		0.8%	10.7%	--	--	10.9%	
Lipper Multi Core		-3.7%	9.2%	--	--	9.1%	
<i>Excess Return</i>		-3.4%	-0.2%	--	--	2.1%	
<i>Alpha</i>		-3.0%	0.7%	--	--	2.6%	
<i>Pct. Rank vs. Lipper Multi Core</i>		37	19	--	--	2	
<b>Fisher All-Cap</b>	<b>726,374,121</b>	<b>1.5%</b>	<b>11.4%</b>	<b>7.3%</b>	<b>18.1%</b>	<b>9.5%</b>	<b>10/31/04</b>
S&P 1500/S&P 600 Value Blend		1.2%	11.6%	10.4%	18.5%	8.4%	
Style & Risk Adjusted Benchmark		3.8%	13.2%	12.5%	19.5%	8.9%	
Lipper Multi Core		-3.7%	9.2%	9.1%	15.7%	7.2%	
<i>Excess Return</i>		0.3%	-0.2%	-3.0%	-0.5%	1.1%	
<i>Alpha</i>		-2.2%	-1.8%	-5.1%	-1.5%	0.6%	
<i>Pct. Rank vs. Lipper Multi Core</i>		9	18	79	13	3	
<b>Seizert Capital Partners</b>	<b>590,568,229</b>	<b>-5.5%</b>	<b>7.8%</b>	<b>9.6%</b>	<b>--</b>	<b>13.3%</b>	<b>11/30/09</b>
S&P 1500/S&P 400 Value Blend		1.2%	11.6%	11.2%	--	16.1%	
Style & Risk Adjusted Benchmark		-0.6%	9.5%	10.5%	--	13.0%	
Lipper Multi Core		-3.7%	9.2%	9.1%	--	12.1%	
<i>Excess Return</i>		-6.7%	-3.8%	-1.6%	--	-2.8%	
<i>Alpha</i>		-4.9%	-1.7%	-0.9%	--	0.3%	
<i>Pct. Rank vs. Lipper Multi Core</i>		71	76	49	--	31	
<b>LA Capital All-Cap Growth</b>	<b>436,957,811</b>	<b>7.5%</b>	<b>16.7%</b>	<b>13.0%</b>	<b>20.8%</b>	<b>11.4%</b>	<b>5/31/05</b>
S&P 1500 Growth		2.7%	13.5%	12.7%	17.9%	8.8%	
Style & Risk Adjusted Benchmark		-0.7%	10.1%	10.0%	17.1%	9.0%	
Lipper Multi-Cap Growth		-4.6%	10.3%	9.0%	16.1%	8.0%	
<i>Excess Return</i>		4.7%	3.2%	0.3%	2.9%	2.6%	
<i>Alpha</i>		8.1%	6.6%	3.0%	3.6%	2.4%	
<i>Pct. Rank vs. Lipper Multi-Cap Growth</i>		1	1	3	2	1	
<b>LA Capital Deep Value</b>	<b>396,589,449</b>	<b>-1.0%</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-1.0%</b>	<b>4/1/15</b>
S&P 1500 Value		-0.7%	--	--	--	-0.7%	
Style & Risk Adjusted Benchmark		-0.8%	--	--	--	-0.8%	
Lipper Multi-Cap Value		-4.8%	--	--	--	-4.8%	
<i>Excess Return</i>		-0.3%	--	--	--	-0.3%	
<i>Alpha</i>		-0.1%	--	--	--	-0.1%	
<i>Pct. Rank vs. Lipper Multi-Cap Value</i>		13	--	--	--	13	

<u>Fund Name</u>	<u>Market Value</u>	<u>1-Year</u>	<u>3-Years</u>	<u>5-Years</u>	<u>7-Years</u>	<u>Inception</u>	<u>Inception Date</u>
<b>Clarkston Capital Large-Cap</b>	<b>264,519,366</b>	<b>6.2%</b>	--	--	--	<b>6.2%</b>	<b>1/1/14</b>
S&P 500		1.8%	--	--	--	1.8%	
Style & Risk Adjusted Benchmark		-0.4%	--	--	--	-0.4%	
Lipper Large-Cap Core		-0.9%	--	--	--	-0.9%	
<i>Excess Return</i>		4.4%	--	--	--	4.4%	
<i>Alpha</i>		6.7%	--	--	--	6.7%	
<i>Pct. Rank vs. Lipper Small-Cap Core</i>		2	--	--	--	2	
<b>Attucks Asset Management</b>	<b>224,275,064</b>	<b>-3.1%</b>	<b>8.6%</b>	<b>8.7%</b>	<b>15.4%</b>	<b>5.0%</b>	<b>11/30/07</b>
S&P 1500 Super Composite		1.2%	11.6%	11.4%	17.2%	5.9%	
Style & Risk Adjusted Benchmark		1.1%	11.2%	10.9%	16.9%	6.8%	
Lipper Small-Cap Core		-3.7%	9.2%	9.1%	15.7%	4.7%	
<i>Excess Return</i>		-4.3%	-2.9%	-2.6%	-1.8%	-0.9%	
<i>Alpha</i>		-4.2%	-2.6%	-2.1%	-1.5%	-1.8%	
<i>Pct. Rank vs. Lipper Multi Core</i>		45	66	62	58	46	
<b>Ark Investments</b>	<b>215,311,668</b>	--	--	--	--	<b>7.7%</b>	<b>3/1/16</b>
S&P 1500 Growth		--	--	--	--	6.7%	
Style & Risk Adjusted Benchmark		--	--	--	--	--	
Lipper All-Cap Growth		--	--	--	--	6.2%	
<i>Excess Return</i>		--	--	--	--	0.9%	
<i>Alpha</i>		--	--	--	--	--	
<i>Pct. Rank vs. Lipper All-Cap Growth</i>		--	--	--	--	10	
<b>Clarkston Capital Small-Cap</b>	<b>204,665,915</b>	<b>4.0%</b>	--	--	--	<b>11.8%</b>	<b>1/1/14</b>
S&P 600		-3.2%	--	--	--	2.8%	
Style & Risk Adjusted Benchmark		-2.1%	--	--	--	3.7%	
Lipper Small-Cap Core		-7.9%	--	--	--	-0.3%	
<i>Excess Return</i>		7.2%	--	--	--	9.0%	
<i>Alpha</i>		6.1%	--	--	--	8.1%	
<i>Pct. Rank vs. Lipper Small-Cap Core</i>		1	--	--	--	1	
<b>Bivium Capital Partners</b>	<b>\$204,611,746</b>	<b>-7.1%</b>	<b>7.4%</b>	<b>8.0%</b>	<b>15.2%</b>	<b>4.3%</b>	<b>11/30/07</b>
S&P 1500 Value		-0.7%	9.4%	10.0%	16.4%	4.1%	
Style & Risk Adjusted Benchmark		-1.1%	10.7%	10.9%	17.4%	6.3%	
Lipper Multi Core		-4.8%	7.6%	7.8%	15.2%	4.0%	
<i>Excess Return</i>		-6.4%	-2.1%	-2.0%	-1.2%	0.2%	
<i>Alpha</i>		-6.0%	-3.3%	-2.9%	-2.2%	-2.0%	
<i>Pct. Rank vs. Lipper Multi Core</i>		74	65	57	51	40	
<b>NorthPointe All-Cap Core</b>	<b>153,294,628</b>	<b>-3.1%</b>	<b>9.3%</b>	<b>6.6%</b>	<b>15.5%</b>	<b>6.5%</b>	<b>10/31/04</b>
NorthPointe Blended Benchmark		-3.2%	10.4%	10.0%	18.2%	8.2%	
Style & Risk Adjusted Benchmark		-1.2%	10.0%	10.4%	19.2%	8.9%	
Lipper Multi Core		-3.7%	9.2%	9.1%	15.7%	7.2%	
<i>Excess Return</i>		0.1%	-1.1%	-3.3%	-2.7%	-1.7%	
<i>Alpha</i>		-1.9%	-0.7%	-3.8%	-3.7%	-2.4%	
<i>Pct. Rank vs. Lipper Multi Core</i>		45	56	87	54	75	
<b>Concentrated Equity</b>	<b>135,350,572</b>	<b>-15.2%</b>	--	--	--	<b>-3.3%</b>	<b>5/31/13</b>
S&P 1500 Super Composite		1.2%	--	--	--	11.3%	
Style & Risk Adjusted Benchmark		3.3%	--	--	--	13.8%	
Lipper Multi Core		-3.7%	--	--	--	9.1%	
<i>Excess Return</i>		-16.4%	--	--	--	-14.6%	
<i>Alpha</i>		-18.6%	--	--	--	-17.1%	
<i>Pct. Rank vs. Lipper Multi Core</i>		99	--	--	--	100	
<b>Munder Concentrated SMID Cap</b>	<b>133,322,776</b>	<b>-19.3%</b>	<b>5.2%</b>	<b>6.9%</b>	--	<b>15.3%</b>	<b>4/30/09</b>
S&P 400 Mid-Cap Growth		-4.0%	9.6%	9.3%	--	18.7%	
Style & Risk Adjusted Benchmark		-4.1%	10.4%	9.9%	--	17.5%	
Lipper Mid-Cap Growth		8.4%	8.3%	7.5%	--	16.0%	
<i>Excess Return</i>		-15.3%	-4.4%	-2.4%	--	-3.5%	
<i>Alpha</i>		-15.2%	-5.2%	-2.9%	--	-2.2%	
<i>Pct. Rank vs. Lipper Mid-Cap Growth</i>		97	87	59	--	72	

<u>Fund Name</u>	<u>Market Value</u>	<u>1-Year</u>	<u>3-Years</u>	<u>5-Years</u>	<u>7-Years</u>	<u>Inception</u>	<u>Inception Date</u>
<b>SMRS Large-Cap Value</b>	<b>107,129,145</b>	<b>-0.9%</b>	<b>8.5%</b>	<b>8.3%</b>	<b>13.5%</b>	<b>2.5%</b>	<b>7/31/07</b>
S&P 500 Value Index		-0.3%	9.4%	10.0%	16.2%	3.8%	
Style & Risk Adjusted Benchmark		-0.4%	8.4%	9.2%	14.6%	4.1%	
Lipper Large Value		-2.9%	8.6%	9.0%	14.8%	3.7%	
<i>Excess Return</i>		-0.6%	-1.0%	-1.6%	-2.7%	-1.3%	
<i>Alpha</i>		-0.5%	0.1%	-0.9%	-1.2%	-1.6%	
<i>Pct. Rank vs. Lipper Large-Cap Value</i>		25	58	66	76	77	
<b>Concentrated All-Cap Growth</b>	<b>24,604,750</b>	<b>-17.0%</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-7.0%</b>	<b>5/31/13</b>
S&P 600		-3.2%	--	--	--	10.8%	
Style & Risk Adjusted Benchmark		-2.8%	--	--	--	8.0%	
Lipper Small-Cap Core		-7.9%	--	--	--	7.2%	
<i>Excess Return</i>		-13.8%	--	--	--	-17.8%	
<i>Alpha</i>		-14.2%	--	--	--	-15.0%	
<i>Pct. Rank vs. Lipper Small-Cap Core</i>		98	--	--	--	100	
<b>Large-Cap Consistent Growth</b>	<b>24,126,967</b>	<b>4.1%</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>5.8%</b>	<b>3/1/15</b>
S&P 500		1.8%	--	--	--	0.2%	
Style & Risk Adjusted Benchmark		1.2%	--	--	--	0.1%	
Lipper Large-Cap Core		-0.9%	--	--	--	-2.2%	
<i>Excess Return</i>		2.3%	--	--	--	5.6%	
<i>Alpha</i>		2.9%	--	--	--	5.7%	
<i>Pct. Rank vs. Lipper Large-Cap Core</i>		5	--	--	--	1	

State of Michigan Retirement Systems

# FIXED INCOME REVIEW

Investment Advisory Committee Meeting

June 16, 2016



Daniel J. Quigley  
Senior Investment Manager  
Long-Term Fixed Income Division



## EXECUTIVE SUMMARY

### Performance

<b>MPSERS Plan (3/31/16)</b>	<b>1-Year</b>	<b>3-Years</b>	<b>5-Years</b>	<b>7-Years</b>	<b>10-Years</b>
Long-Term Fixed Income	2.3%	3.0%	4.2%	5.8%	5.6%
Barclays Aggregate	2.0%	2.5%	3.8%	4.5%	4.9%
Peer Median Return	1.5%	2.4%	4.2%	6.6%	5.4%
Rank vs. Peers	21	31	47	71	39

- Long-Term Fixed Income outperformed the Barclay's Aggregate benchmark and its peer group on a one-year basis. The fixed income portfolio has outperformed the benchmark across all time periods. This outperformance was aided by an overweight to corporate bonds and structured securities over longer time periods and by strong security selection on a one-year basis. The shorter duration of the portfolio hindered relative performance slightly on a one-year basis as long-term interest rates declined.

### Strategy Update

- Allocation to Long-Term Fixed Income has increased by \$350 million over the past twelve months, primarily in high yield.
- Long-Term Fixed Income continues to look to increase the overall rate of return by allocating to securities with attractive risk-adjusted yields when the market allows. The portfolio currently maintains an out-of-benchmark exposure to high yield credit managers (14.2% of portfolio assets) as well as securitized credit mandates (15.2% of portfolio assets). This strategy increases the credit risk of the portfolio, however, this risk is offset by relatively lower interest rate risk due to the portfolio's lower duration.
- The portfolio addresses liquidity concerns by maintaining an allocation to U.S. Treasuries and U.S. TIPS (16.1% of portfolio assets). This government bond allocation also increases the portfolio's diversification.
- As opportunities present themselves, Long-Term Fixed Income will look to diversify from Barclay's Aggregate and Barclay's Investment Grade Credit focused investment strategies. This is due to the relatively lower yield levels and longer durations of these benchmarks when compared with historical levels. These changes will occur at the margin as the overall characteristics of the fund will continue to meet the diversification requirements of a core bond portfolio.

### Market Environment and Outlook

- The U.S. Treasury yield curve has flattened on a year-over-year (YOY) basis as long-term interest rates have declined while short-term interest rates have increased. The spread between 2-year and 10-year U.S. Treasuries declined by 30 basis points (bps) during the year. Lower inflation, reduced global growth expectations, and central bank intervention have contained long-term interest rates. The Federal Reserve increased short-term interest rates as they tightened monetary policy during their December FOMC meeting.

- The U.S. investment grade credit spreads widened during the first half of the quarter before rallying during the second half. Spreads ended the quarter flat at 163 bps. These levels are 34 bps wider on a YOY basis.
- High-yield spreads decreased by 5 bps YTD despite weakness in the first half of the quarter. Spreads ended the quarter at 656 bps after reaching a level of 830 bps in February. Energy spreads also tightened dramatically during the last six weeks of the quarter as oil prices rebounded. HY Energy spreads remain elevated at 1,135 bps.
- Global weakness continued to suppress inflation expectations in developed markets. The breakeven inflation expectation implied by the yield of the 10-year U.S. TIPS ended the quarter at 1.63%, lower than the stated 2% inflation target of the Federal Reserve. This level did increase by 8 bps during the quarter, leading to relative outperformance of TIPS versus nominal U.S. Treasuries.
- The U.S. interest rates continued to trade at higher levels than those in many developed markets. This has been driven by the relative strength of the U.S. economy as well as the expected tightening of monetary policy by the Federal Reserve. This tightening has been contrasted by monetary easing and lower interest rates by many of the major global central banks. This relative yield pickup is highlighted by ten-year yields of 0.26% in Japan and 0.63% in Germany.
- The portfolio remains defensively positioned for interest rate increases. The duration remains short of the benchmark as we focus on intermediate securities. We have offset this short position by holding a larger allocation to securitized and corporate debt securities in order to increase the interest income of the portfolio.

## **Conclusion**

- Given the current level and shape of the yield curve, it seems appropriate to focus on intermediate duration securities. This area of the yield curve offers the best risk-adjusted return in this environment. We will continue to target investments that offer attractive yield pick-up for the portfolio as we believe that price appreciation opportunities are limited in a low yield environment. We will also look to maintain our overweight to securitized assets and high yield bonds within the portfolio.



# SMRS

## Long-Term Fixed Income

3/31/16

Markets	Amount	Total	% of Total
<b>Core</b> (in millions)			
LTFID Internal	\$4,368		
Dodge & Cox	226		
<b>Total Core</b>		<b>\$4,594</b>	<b>59.1%</b>
<b>Credit</b>			
Prudential	\$213		
<b>Total Credit</b>		<b>\$213</b>	<b>2.7%</b>
<b>Securitized Debt</b>			
Mid West Securitized Ops	\$663		
Principal Global	386		
Napier Park ABS Income	133		
<b>Total Securitized Debt</b>		<b>\$1,182</b>	<b>15.2%</b>
<b>High Yield</b>			
Columbia Management	\$630		
Prudential High Yield	471		
<b>Total High Yield</b>		<b>\$1,101</b>	<b>14.2%</b>
<b>Tactical</b>			
Pyramis	\$265		
Loomis Core Plus	208		
<b>Total Tactical</b>		<b>\$473</b>	<b>6.1%</b>
<b>Global</b>			
T.Rowe Global Multi-Sector	\$208		
<b>Total Global</b>		<b>\$208</b>	<b>2.7%</b>

**TOTAL**

**\$7,771**

**100.0%**



# SMRS

## Fixed Income Holdings Portfolio Characteristics

**Benchmark: Barclays Aggregate**

**3/31/16**

<b><i>Characteristic</i></b>	<b><i>Portfolio</i></b>	<b><i>Benchmark</i></b>	<b><i>Relative (%)</i></b>
Average Life	6.9	8.5	81
Average Life w/Cash Equiv.	6.7	8.5	79
Duration (Yrs)	5.0	5.4	93
Duration (Yrs) w/Cash Equiv.	4.9	5.4	91
Coupon (%)	3.8	3.3	115
Yield to Maturity (%)	3.8	2.2	173
Moody's Credit Rating	Baa1	Aa2	
S&P Credit Rating	BBB	AA-	

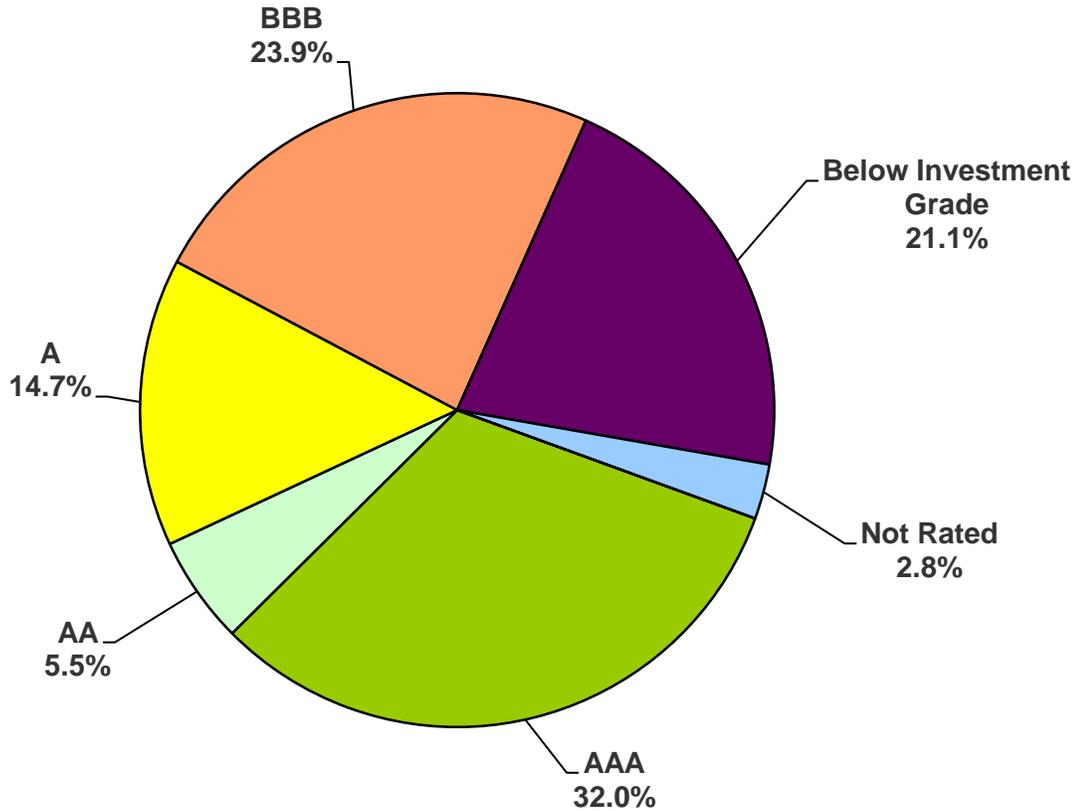


# SMRS

## Fixed Income By Rating

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

#### 3/31/16



<b>Market Value in Millions</b>				
<b>3/31/16</b>				
	<u>Assets</u>	<u>Percent</u>	<u>Benchmark</u>	<u>Difference</u>
AAA	\$2,484	32.0%	71.3%	-39.3%
AA	431	5.5%	5.3%	0.2%
A	1,140	14.7%	11.0%	3.7%
BBB	1,854	23.9%	11.3%	12.6%
Not Rated	222	2.8%	1.1%	1.7%
* Below Investment Grade	1,640	21.1%	0.0%	21.1%
<b>Total Investments</b>	<b><u>\$7,771</u></b>	<b><u>100.0%</u></b>	<b><u>100.0%</u></b>	

\* Comprised of approximately 15.8% High Yield Credit and 5.3% High Yield RMBS/ABS

Benchmark: Barclays US Aggregate

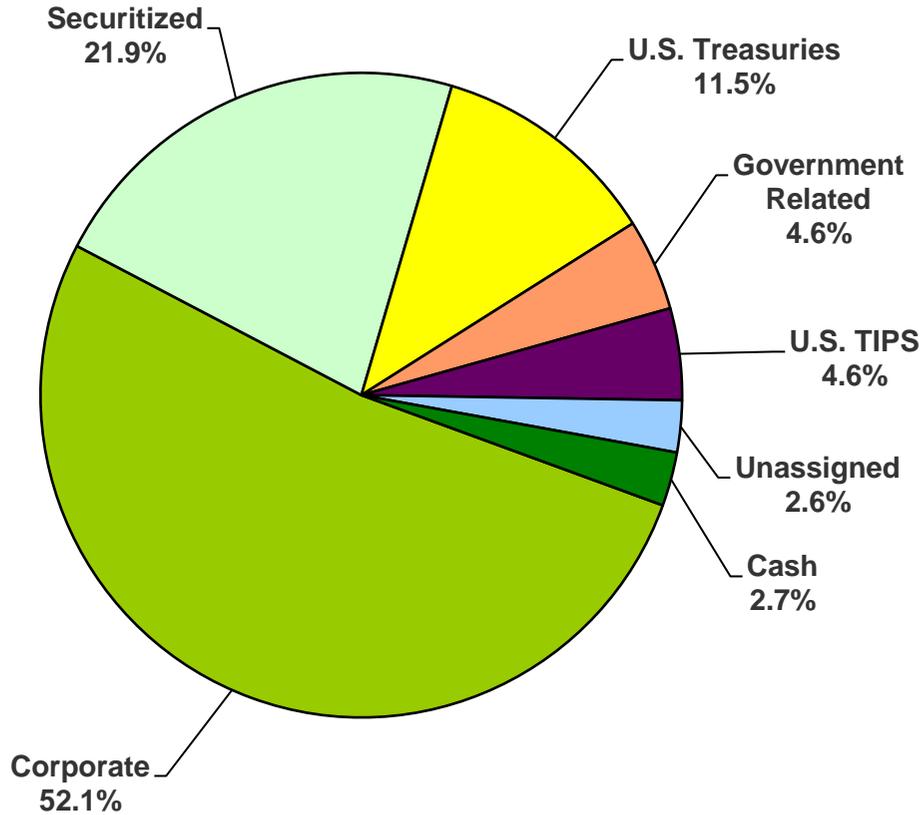


# SMRS

## Fixed Income By Asset Type

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

#### 3/31/16



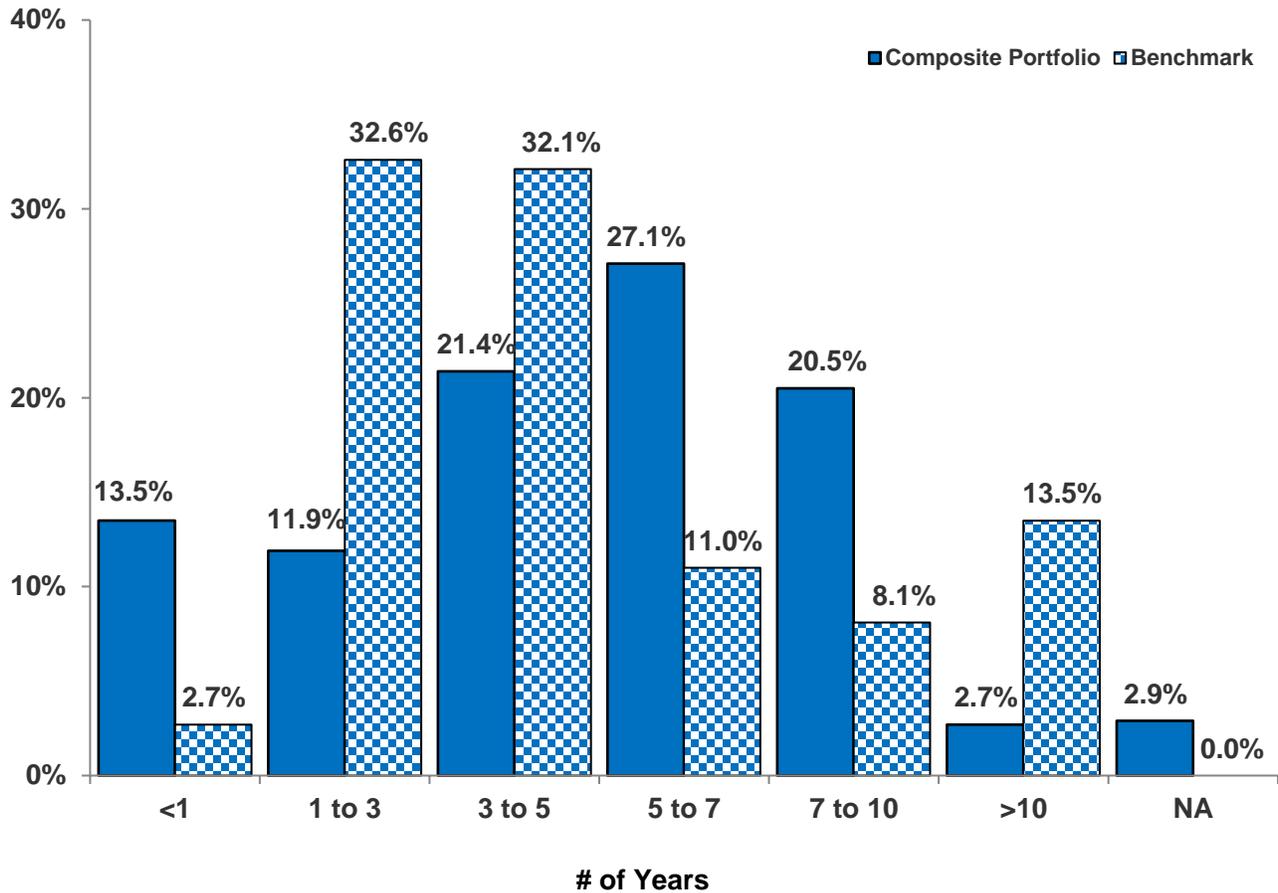
<b>Market Value in Millions</b>				
<b>3/31/16</b>				
	<u>Assets</u>	<u>Percent</u>	<u>Benchmark</u>	<u>Difference</u>
Corporate	\$4,048	52.1%	24.6%	27.5%
Securitized	1,703	21.9%	30.7%	-8.8%
U.S. Treasuries	892	11.5%	36.6%	-25.1%
Government Related	359	4.6%	8.1%	-3.5%
U.S. TIPS	358	4.6%	0.0%	4.6%
Unassigned	202	2.6%	0.0%	2.6%
Cash	209	2.7%	0.0%	2.7%
<b>Total Investments</b>	<b><u>\$7,771</u></b>	<b><u>100.0%</u></b>	<b><u>100.0%</u></b>	

Benchmark: Barclays US Aggregate



# SMRS

## Duration Distribution Fixed Income Composite Versus Benchmark 3/31/16



Source: Factset

Market Value in Millions					
Duration	Assets	Portfolio Weight	Benchmark Weight	Portfolio Duration*	Benchmark Duration*
<1	\$1,047	13.5%	2.7%	2.3	2.0
1 to 3	925	11.9%	32.6%	2.5	2.5
3 to 5	1,661	21.4%	32.1%	4.1	4.3
5 to 7	2,107	27.1%	11.0%	6.0	5.9
7 to 10	1,594	20.5%	8.1%	7.9	7.9
>10	207	2.7%	13.5%	15.2	15.4
NA	230	2.9%	0.0%	0.0	0.0
<b>Total</b>	<b>\$7,771</b>	<b>100.0%</b>	<b>100.0%</b>	<b>5.4</b>	<b>5.6</b>

\* Effective Duration

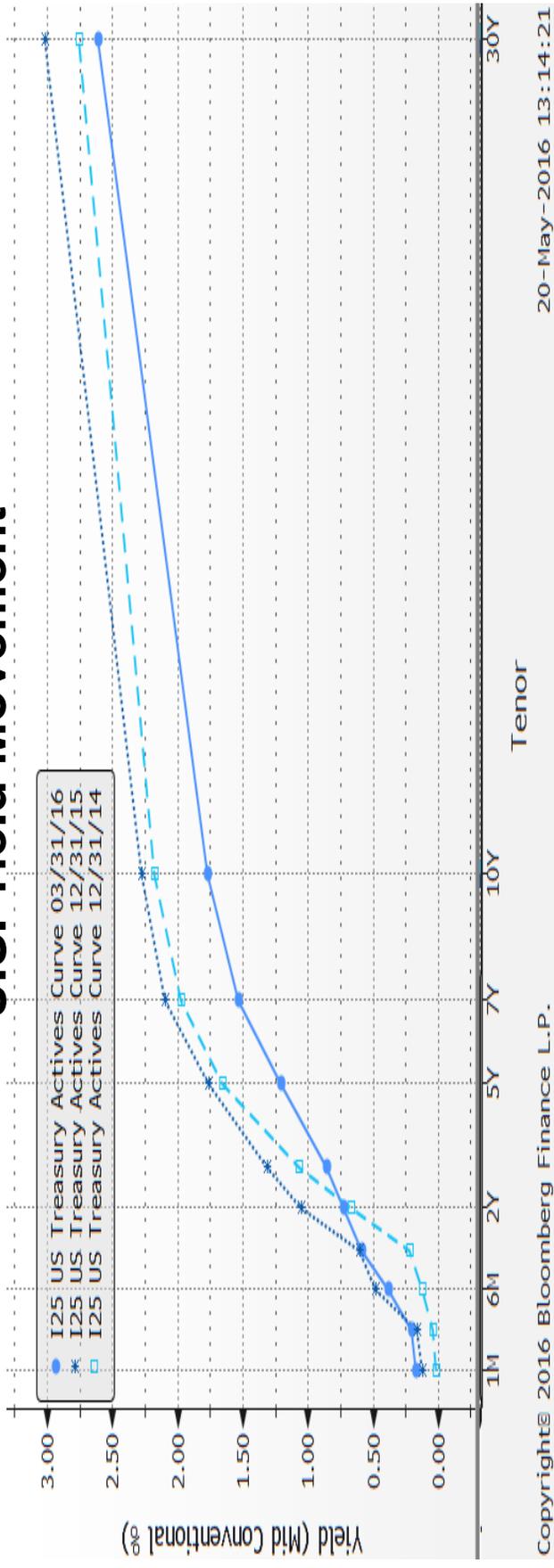
## SMRS Internal/External Manager Performance – Net of Fees

3/31/16

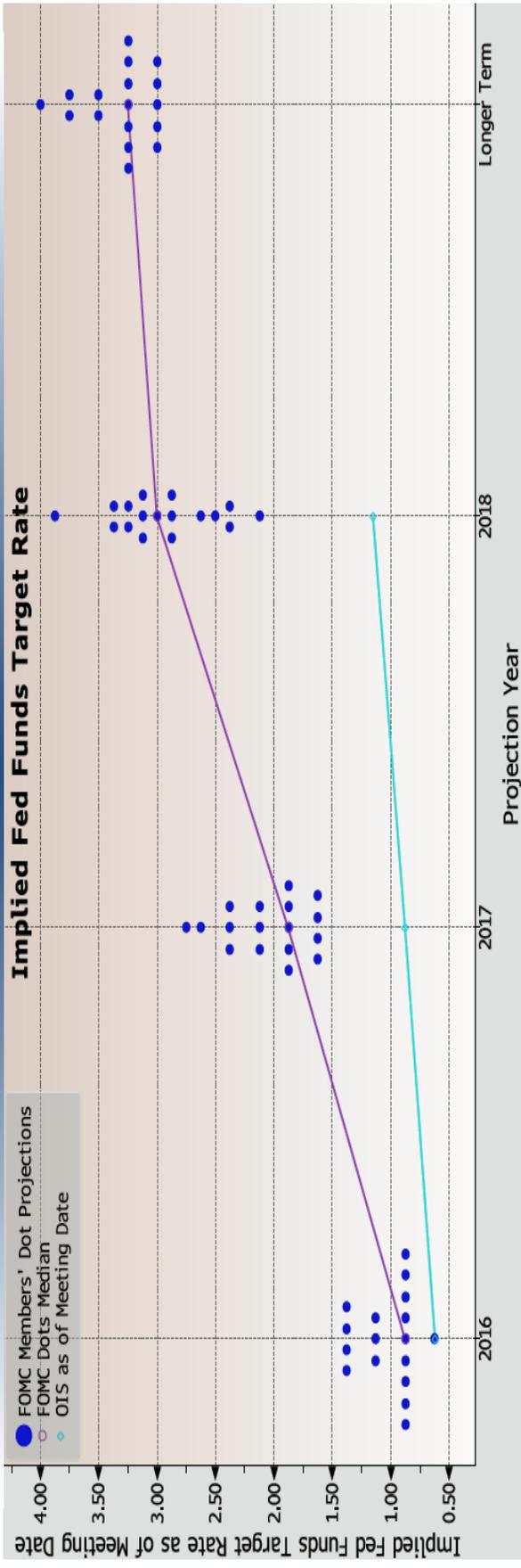
### Total Fixed Income Performance, Net of Fees (MPSERS)

	<u>Market Value</u>	<u>1-Year</u>	<u>3-Years</u>	<u>5-Years</u>	<u>7-Years</u>	<u>10-Years</u>
<b>Total Fixed Income</b>	<b>\$7,771,405,403</b>	<b>2.18%</b>	<b>2.84%</b>	<b>4.11%</b>	<b>5.71%</b>	<b>5.54%</b>
<i>Barclays Aggregate Bond Index</i>	<i>N/A</i>	<i>1.96%</i>	<i>2.50%</i>	<i>3.78%</i>	<i>4.52%</i>	<i>4.90%</i>
<b>Internal Fixed Income</b>	<b>\$4,367,930,623</b>	<b>3.41%</b>	<b>3.19%</b>	<b>4.12%</b>	<b>5.37%</b>	<b>5.60%</b>
<b>External Fixed Income</b>	<b>\$3,403,474,780</b>	<b>0.22%</b>	<b>2.24%</b>	<b>4.29%</b>	<b>6.48%</b>	<b>5.19%</b>
<b>MetWest Securitized Opportunities</b>	662,576,963	-0.41%	--	--	--	--
<b>Principal CMBS</b>	386,346,017	-0.27%	4.87%	6.16%	24.96%	--
<b>Pyramis Tactical Bond Fund</b>	265,076,301	-0.82%	--	--	--	--
<b>Prudential Investment Grade</b>	213,330,320	1.29%	3.28%	5.54%	8.31%	--
<b>Dodge &amp; Cox Core</b>	225,475,132	0.95%	2.72%	4.07%	6.02%	5.45%
<b>Loomis Sayles CorePlus</b>	208,226,178	-0.52%	--	--	--	--
<b>Napier Park ABS Income</b>	133,340,313	N/A				
<b>T. Rowe Global Multi-Sector</b>	207,750,895	N/A				
<i>Barclays Aggregate Bond Index</i>	<i>N/A</i>	<i>1.96%</i>	<i>2.50%</i>	<i>3.78%</i>	<i>4.52%</i>	<i>4.90%</i>
<b>Columbia Management High Yield</b>	629,873,082	-0.08%	--	--	--	--
<b>Prudential High Yield</b>	471,479,581	-0.50%	--	--	--	--
<i>Barclays US HY BA/B 2% Cap</i>	<i>N/A</i>	<i>-2.18%</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>

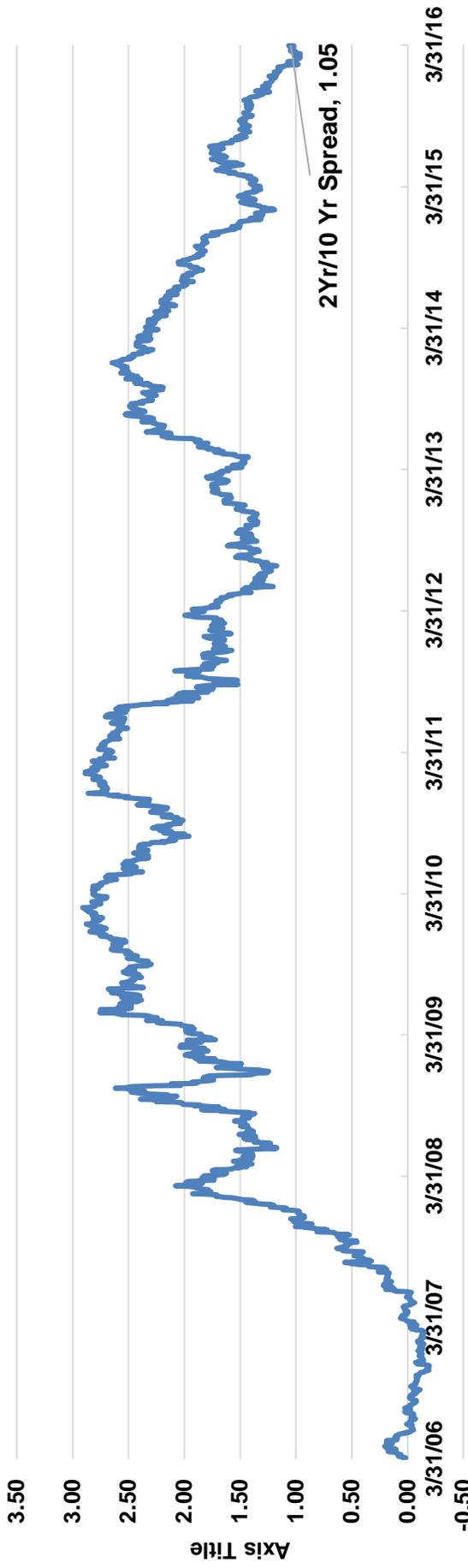
# U.S. Yield Movement



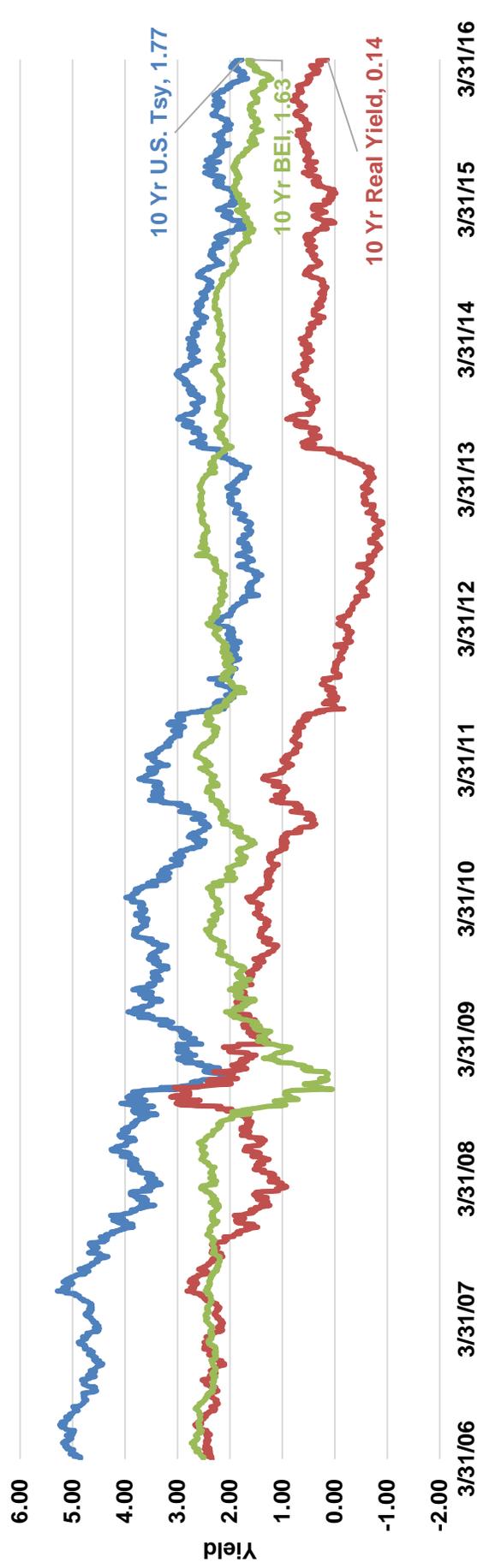
# FOMC DOT PLOT



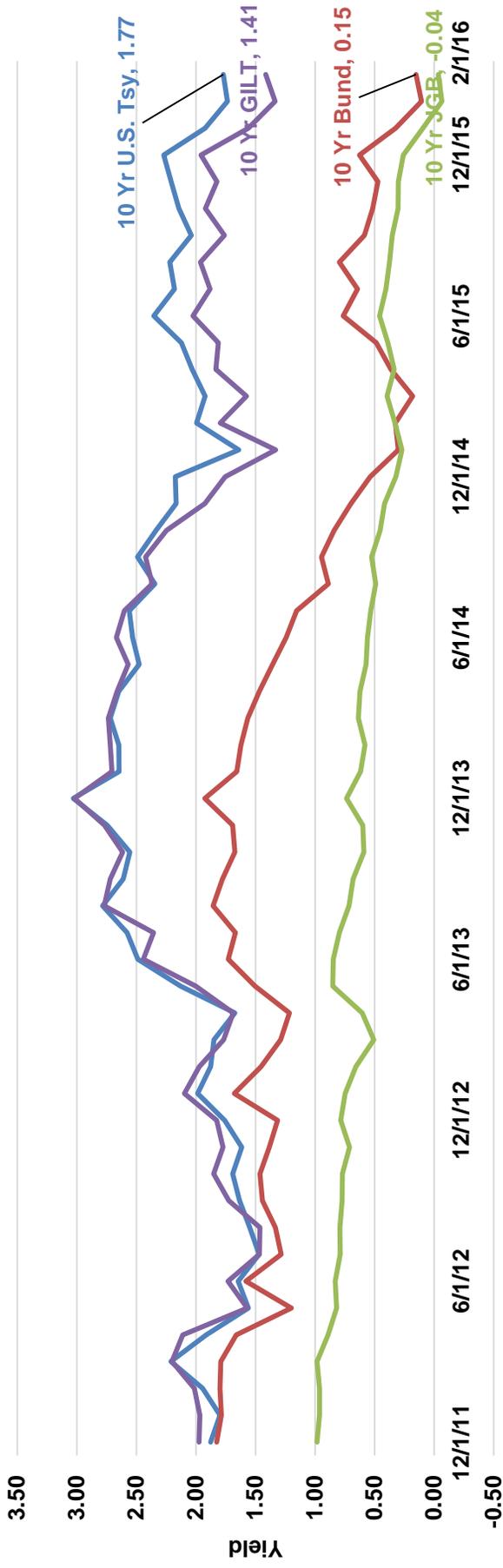
# 2-Year / 10-Year Spread



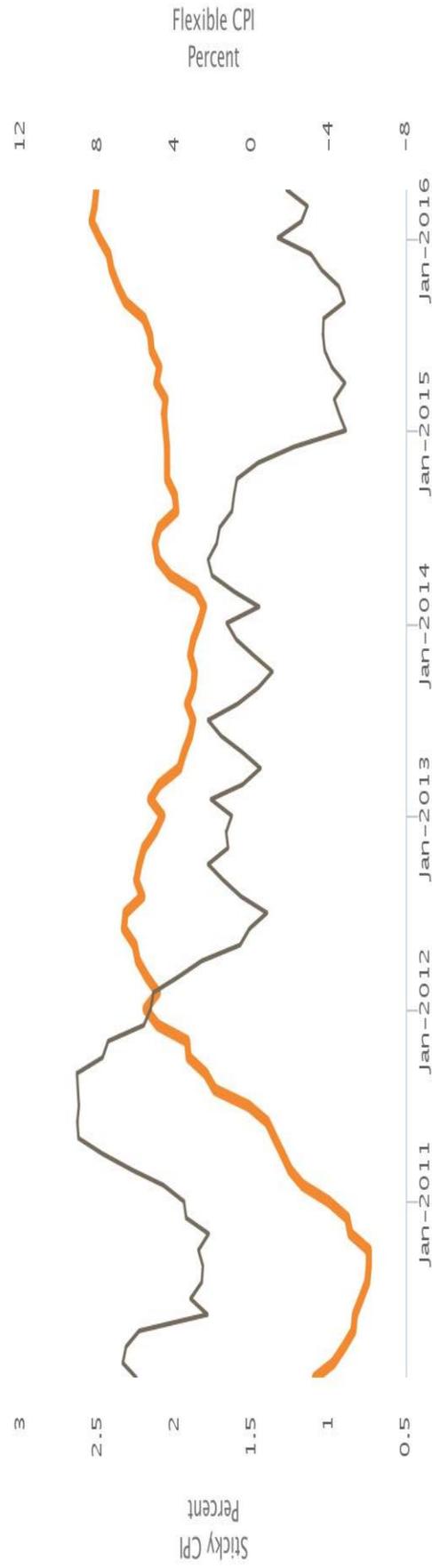
# Real and Nominal Yields



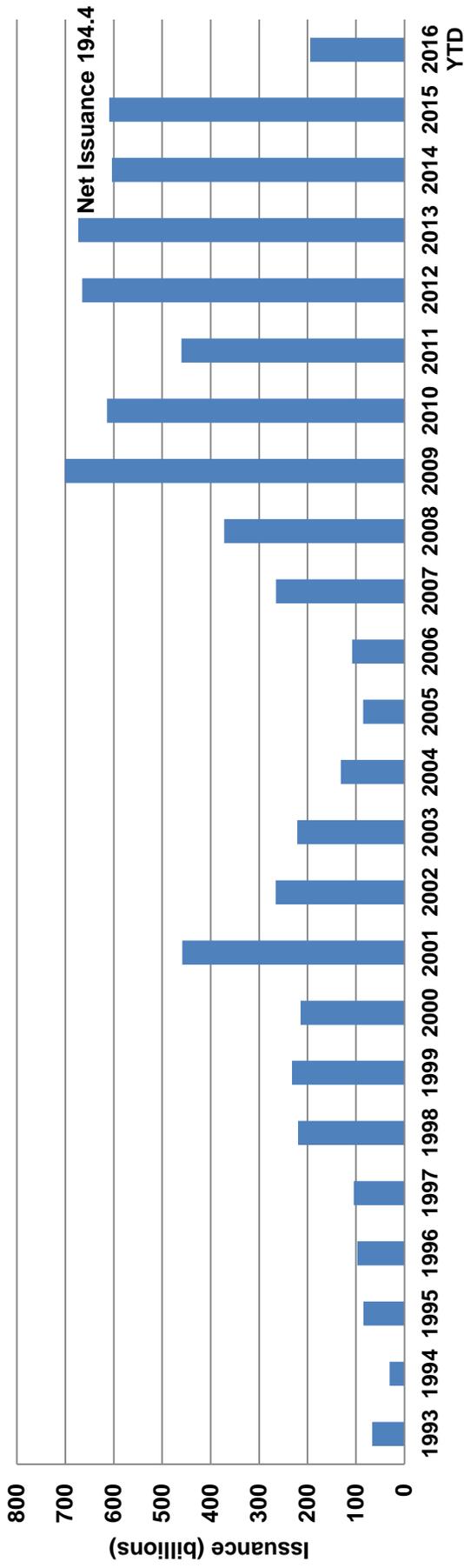
# Global 10-Year Sovereign Yields



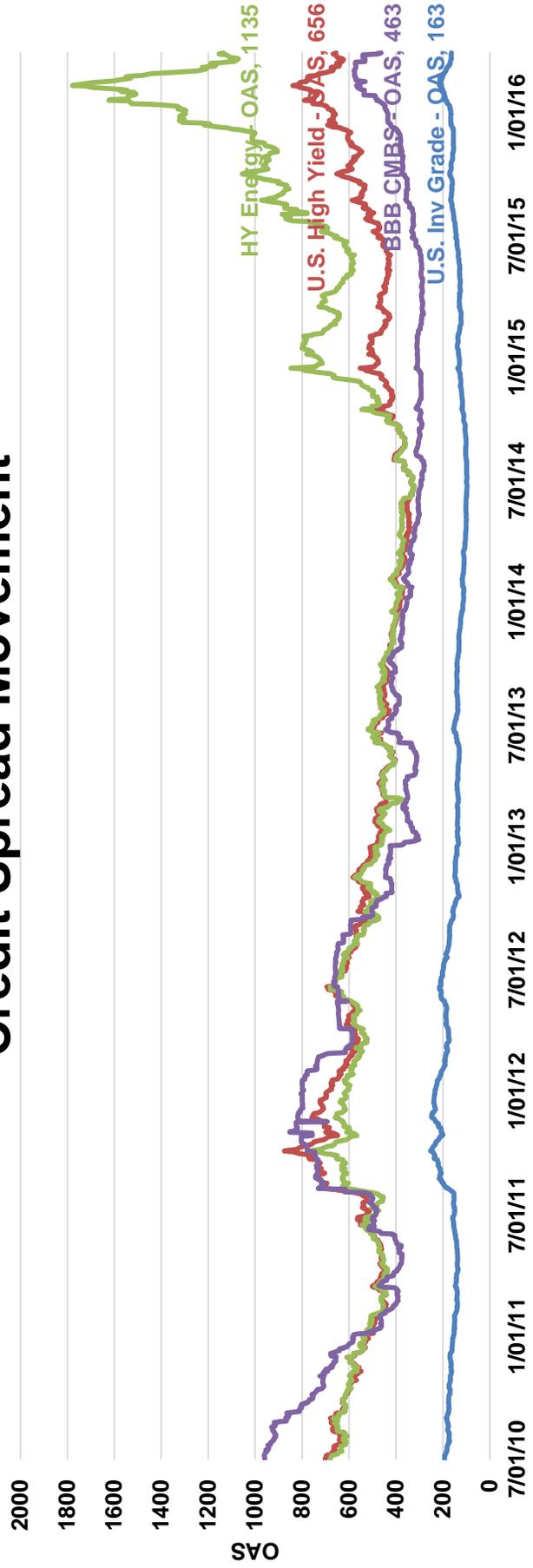
# Sticky Price CPI



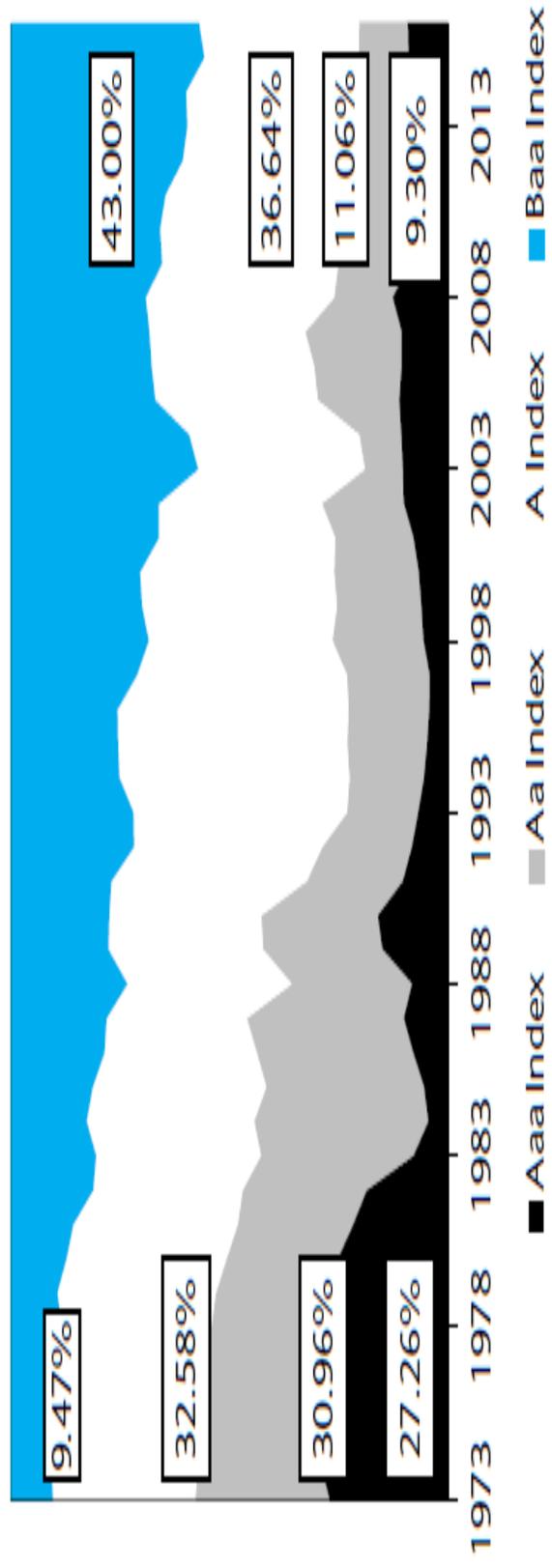
# Net Corporate Bond Issuance



# Credit Spread Movement

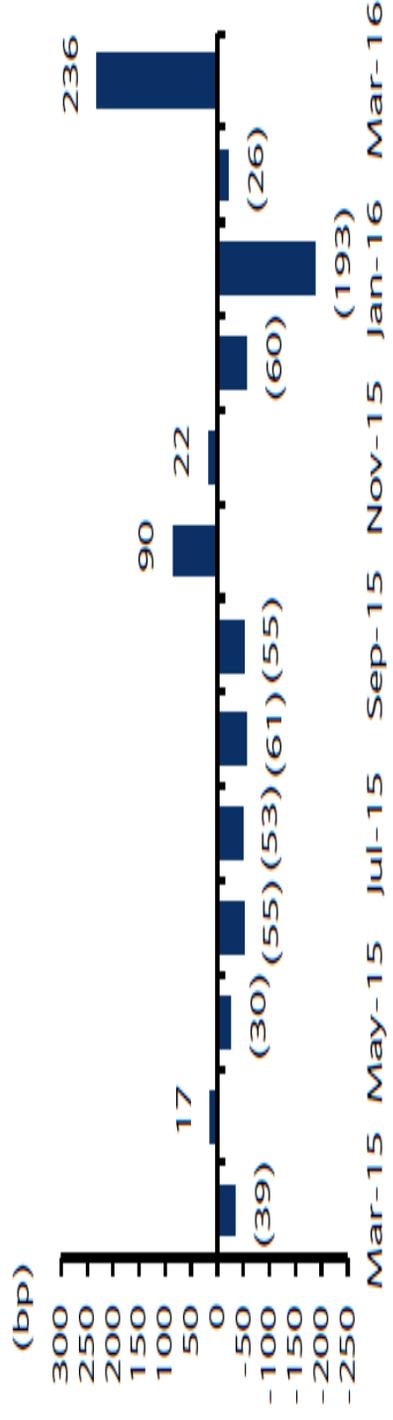


# Quality Analysis of Barclays Credit Index, 1973-2016



Source: Barclays Risk Analytics and Index Solutions, Barclays Research

## US Credit Index Excess Returns: Monthly, LTM



Source: Barclays Risk Analytics and Index Solutions, Barclays Research



State of Michigan Retirement Systems

# INTERNATIONAL EQUITY REVIEW

Investment Advisory Committee Meeting

June 16, 2016



Richard J. Holcomb, CFA  
Senior Investment Manager  
Quantitative Analysis Division



## EXECUTIVE SUMMARY

### Performance

<b>MPSERS Plan</b>	<b>1-Year</b>	<b>3-Years</b>	<b>5-Years</b>	<b>7-Years</b>	<b>10-Years</b>
Annualized Returns	-7.5%	1.9%	2.0%	11.1%	1.6%
Benchmark Return	-9.2%	0.5%	0.6%	8.1%	0.6%
Peer Return	-7.5%	2.3%	2.3%	10.6%	2.7%
Rank vs. Peers	49	54	62	27	86

- International equity returns were mixed in the first quarter, as slowing economic growth caused developed markets to trail the U.S., while emerging markets rebounded and led both. Emerging markets, Canada and Australia all benefited from energy prices that finally began to increase from a very low base. The U.S. dollar underperformed the Euro and Yen, but gained against the Pound as Brexit fears grew. Chinese stocks were weaker in the quarter as economic growth remained an issue and debt levels are very high. Significant geopolitical risks remain unresolved throughout the world, and the impact of widespread populist political movements and anti-corruption campaigns on future global trade are unclear. Our international portfolio returns have exceeded their internal benchmark over-all time periods.
- Performance comparisons with peer group returns are stable, and reflect positive contributions from all three strategic investment approaches. Indexed investments have benefited from an overweight to smaller capitalization stocks. Stock Plus strategies returns have benefited from internal fund rebalancing of collateral assets to improve their absolute return. Active managers have taken advantage of a more favorable investment environment for their individual disciplines.
- Internally-managed stock plus funds have experienced a headwind in dividend stocks and Libor note spreads in the first quarter, but have outperformed their benchmarks over longer periods. Currency hedging of the internal swap overlay has been reduced to more closely match the 25% hedge level of its objective. All counterparties used for swap agreements, and all fixed income securities held as collateral continue to be rated investment grade.
- Indexed investments represent 30.6% of international equity exposure, and had a return of 0.0% in the first quarter, and -6.2% for the year. The positive relative performance can be attributed to an overweight of small-cap stocks in the selection of index fund exposure components.

- Active international managers had a return of -1.3% for the difficult first quarter, and -5.3% for the year, making a positive overall contribution. The manager strategies are diversified with a combination of fundamental analysis driven and quantitative factor approaches. The Wellington Emerging Markets Local Equity fund continued to contribute significantly to excess returns for the year through its focus on emerging markets local demand beneficiaries. The cumulative active exposure is designed to produce a positive ensemble alpha through multiple expert processes.

## **Outlook**

- The outlook for international equities is positive based on expected slow improvement in the European economies, continued European Central Bank support and stimulus through quarter ending actions, and attractive valuation with the U.S. market. Emerging markets, which have now discounted lower energy and commodity prices and slower demand will benefit from growing local consumer demand. Political instability and threats to global trade will remain important issues.
- External managers, diversified by style, are benefiting and will continue to benefit from a good environment for active stock selection with wide universe return dispersion and many opportunities. Small and mid-cap international stocks will continue to experience greater volatility, but will continue to have more of a positive shareholder focus than the larger State owned or influenced group that dominate capitalization-weighted benchmark indices. Stock Plus absolute return strategies have been impacted by interest rate and risk uncertainties, but will continue to achieve returns in excess of overlay costs.
- Emerging markets performance will continue to benefit from growing local consumer demand trends and access to technology. Positive governance, regulation, and financial system changes will gradually improve investment opportunities in many countries. Political instability, systemic corruption, rule of law, and unfavorable tax regimes will remain concerns. Infrastructure projects should stimulate emerging market economies, and China's plans for the Asian Infrastructure Investment Bank will be very positive for regional and global trade. Commodity rates will improve as capacity is reduced.

## **Investment Plan**

- Move toward long-term asset allocation objectives as a slow global recovery develops and relative valuations of international markets remain positive.
- Take advantage of opportunities to enhance returns in internal stock plus strategies to achieve absolute returns in excess of equity overlay costs. Collaborate with internal fixed income and equities staff for an effective hybrid approach to security research and selection.
- Prepare for derivative market regulatory and structural changes, and focus on further development of counterparty relationships as a strategic advantage.



# SMRS

## International Equities

3/31/16

Markets	Amount	Total	% of Total
<b>Indexed</b> (in millions)			
Ssga	\$1,737		
Vanguard	1,078		
<b>Total Indexed</b>		<b>\$2,815</b>	<b>30.6%</b>
<b>Stock Plus</b>			
Internal Swaps	\$1,652		
PIMCO	1,302		
<b>Total Stock Plus</b>		<b>\$2,954</b>	<b>32.1%</b>
<b>Active</b>			
Los Angeles Capital	\$912		
Wellington	736		
Marathon London	594		
SSgA	558		
Effissimo	222		
Lazard	211		
T. Rowe Price	206		
<b>Total Active</b>		<b>\$3,439</b>	<b>37.3%</b>

**TOTAL**

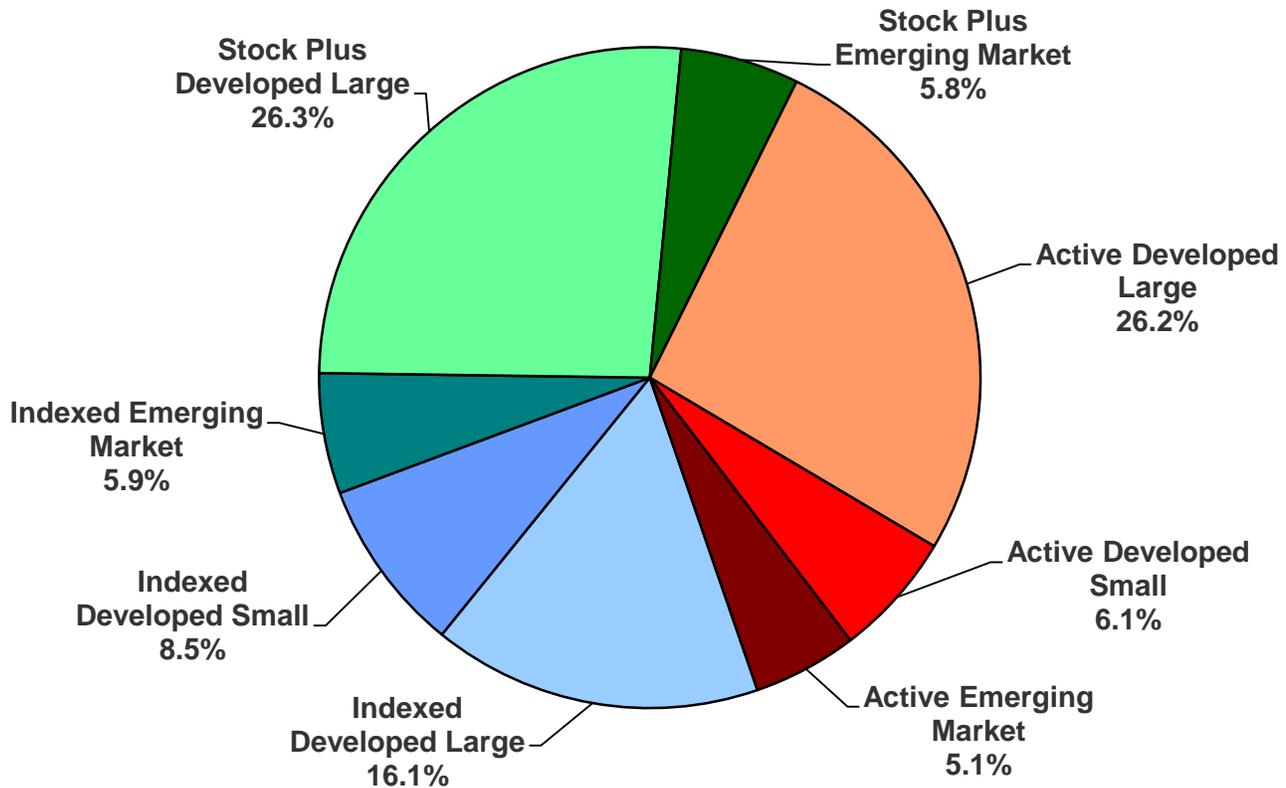
**\$9,208**

**100.0%**



# SMRS

## International Equity Exposure By Category 3/31/16



Market Value in Millions				
	3/31/16		12/31/15	
<b>Indexed</b>				
Developed Large	\$1,487	16.1%	\$1,513	16.7%
Developed Small	782	8.5%	785	8.7%
Emerging Market	546	5.9%	542	6.0%
<b>Total Indexed Equity</b>	<b>\$2,815</b>	<b>30.5%</b>	<b>\$2,840</b>	<b>31.4%</b>
<b>Stock Plus</b>				
Developed Large	\$2,416	26.3%	\$2,478	27.4%
Emerging Market	538	5.8%	490	5.4%
<b>Total Stock Plus Equity</b>	<b>\$2,954</b>	<b>32.1%</b>	<b>\$2,968</b>	<b>32.8%</b>
<b>Active</b>				
Developed Large	\$2,412	26.2%	\$2,213	24.5%
Developed Small	558	6.1%	565	6.3%
Emerging Market	469	5.1%	448	5.0%
<b>Total Active Equity</b>	<b>\$3,439</b>	<b>37.4%</b>	<b>\$3,226</b>	<b>35.8%</b>
<b>Total International Equity</b>	<b>\$9,208</b>	<b>100.0%</b>	<b>\$9,034</b>	<b>100.0%</b>

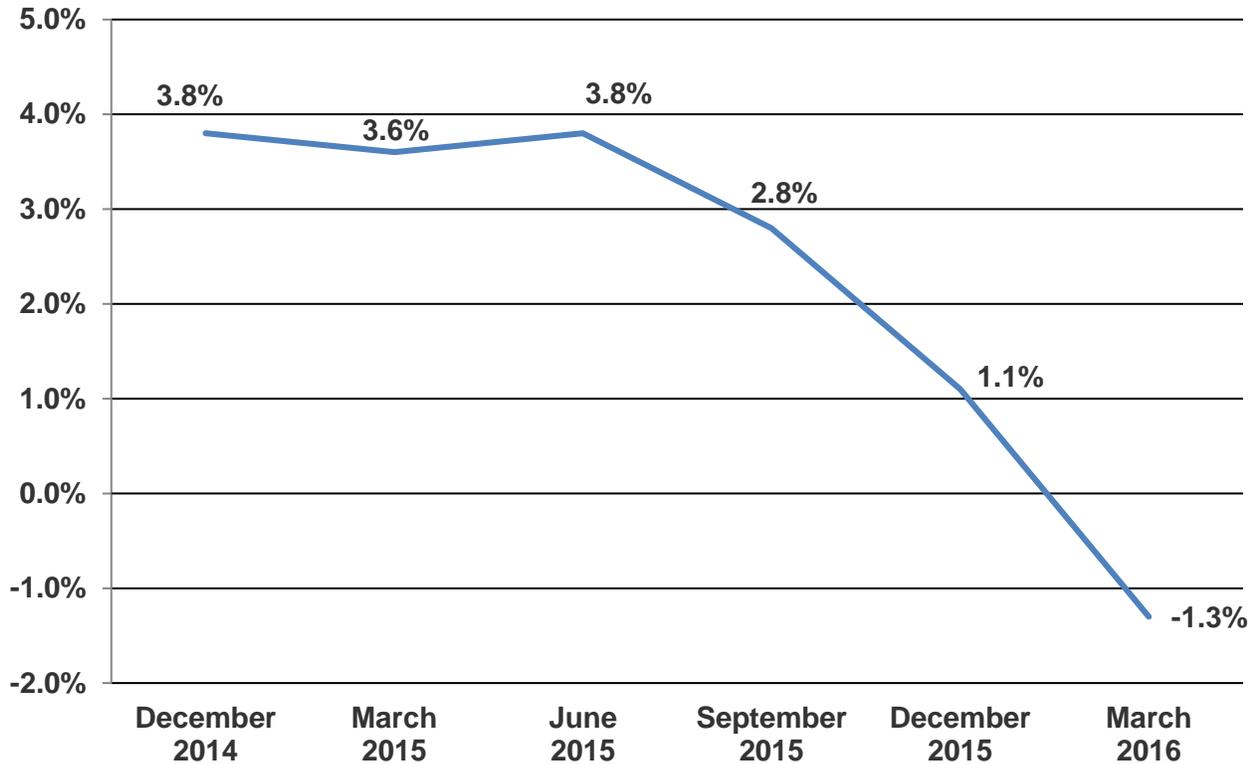


# SMRS

## Emerging Market Allocation

### SMRS Versus Benchmark

#### 3/31/16



#### Investments - SMRS vs Benchmark

<u>Date</u>	<u>EM Allocation SMRS Relative to Benchmark*</u>
December 2014	3.8%
March 2015	3.6%
June 2015	3.8%
September 2015	2.8%
December 2015	1.1%
March 2016	-1.3%

\*As measured by Factset Equity Analytics



# SMRS

## Active International Equities Composite 3/31/16

<b>Date:</b>	<b><u>3/31/16</u></b>	<b><u>12/31/15</u></b>	<b><u>9/30/15</u></b>	<b><u>6/30/15</u></b>
Assets (\$million):	\$3,242	\$2,410	\$2,604	\$2,906
Numbers of Securities:	1,558	1,707	1,717	1,684
Active Share:	63%	57%	63%	55%

Benchmark: MSCI ACWI ex USA

Description: The Active International Equities Composite represents the profile of cumulative investments by active international managers with developed market large and small cap, and emerging market mandates. The manager returns are well diversified and reflect a combination of fundamental analysis driven and quantitative management approaches. The cumulative exposure, supported by multiple expert processes, is constructed to produce a positive, long-term ensemble alpha with control of assumed risk.

<b>Characteristics:</b>	<b><u>SMRS</u></b>	<b><u>ACWI ex USA</u></b>
Weighted Average Capitalization (\$billion):	\$3.3	\$19.6
Trailing 12-month P/E:	16.5x	15.9x
Forecast P/E:	15.3x	14.6x
Price/Book:	1.5x	1.6x
Beta:	0.90	1.00
Dividend Yield:	2.8%	3.2%
3-5 Year EPS Growth Estimate:	10.2%	13.8%
Return on Equity:	19.2%	9.9%

### TOP TEN HOLDINGS – Active International Equities 3/31/16

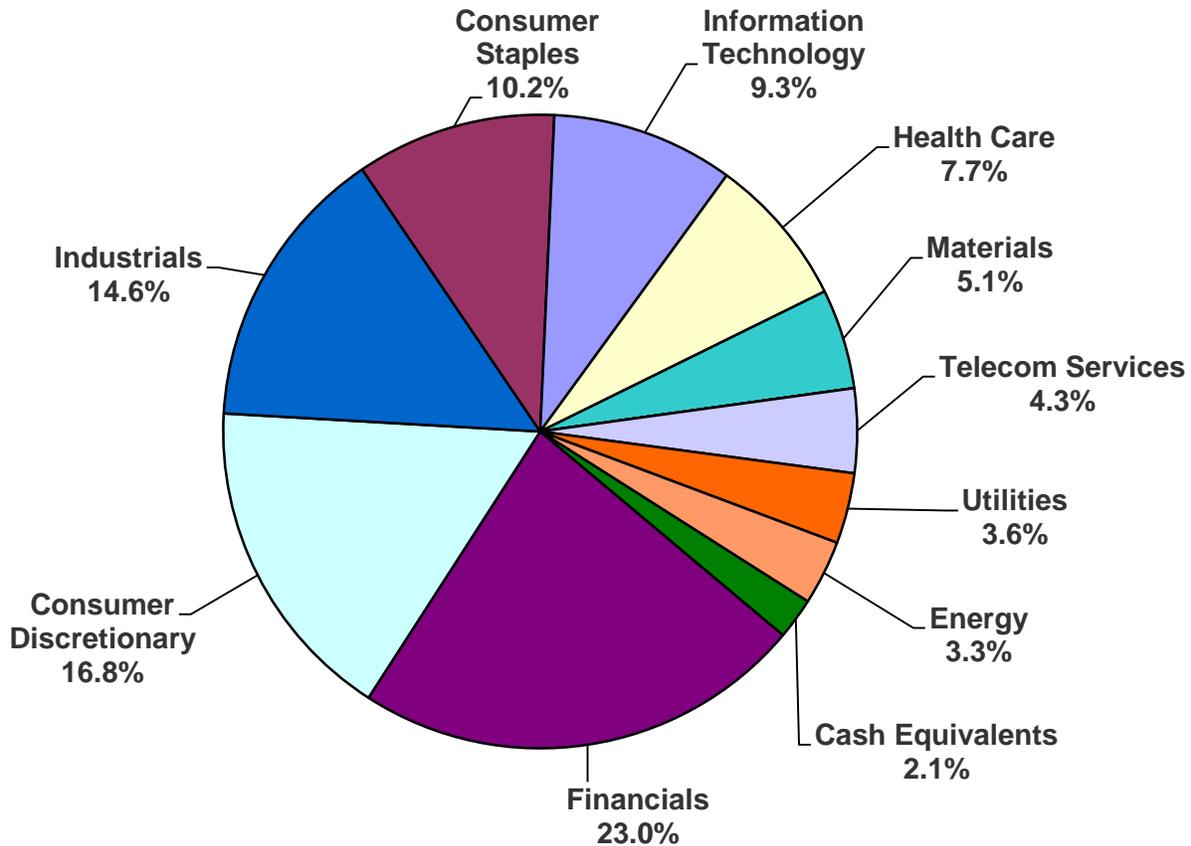
	<b>Portfolio Weight</b>	<b>Market Value (Millions)</b>
Adecco SA	0.6%	\$21.8
Novartis AG	0.6%	19.8
Nippon Telegraph & Telephone Corp.	0.5%	18.3
Reckitt Benckiser Group PLC	0.5%	16.7
Tencent Holdings Ltd	0.5%	16.1
TonenGeneral Sekiyu KK	0.4%	15.1
British American Tobacco PLC	0.4%	15.0
Toyota Motor Corp.	0.4%	14.8
Metro Inc.	0.4%	14.8
Bezeq The Israeli Telecommunication Corp.	<u>0.4%</u>	<u>14.7</u>
<b>TOTAL</b>	<b><u>4.9%</u></b>	<b><u>\$167.1</u></b>



# SMRS

## Active International Equity By Sector

### 3/31/16



Market Value in Millions				
3/31/16				
	Assets	Percent	Benchmark	Difference
Financials	\$746	23.0%	25.7%	-2.7%
Consumer Discretionary	545	16.8%	12.0%	4.8%
Industrials	473	14.6%	11.5%	3.1%
Consumer Staples	330	10.2%	11.2%	-1.0%
Information Technology	302	9.3%	8.5%	0.8%
Health Care	250	7.7%	8.9%	-1.2%
Materials	165	5.1%	6.9%	-1.8%
Telecom Services	139	4.3%	5.3%	-1.0%
Utilities	117	3.6%	3.6%	0.0%
Energy	107	3.3%	6.4%	-3.1%
Total Investments	\$3,174	97.9%	100.0%	
Cash Equivalents	68	2.1%	0.0%	2.1%
<b>Total</b>	<b>\$3,242</b>	<b>100.0%</b>	<b>100.0%</b>	

Benchmark: MSCI ACWI ex USA

**International Active Manager Performance - Net of Fees**  
3/31/16

<u>Fund Name</u>	<u>Market Value</u>	<u>1-Year</u>	<u>3-Years</u>	<u>5-Years</u>	<u>7-Years</u>	<u>Inception Date</u>
<b>PIMCO Intl StocksPlus TR Strategy</b> MSCI EAFE Net Div Index (unhedged)	<b>\$906,179,076</b>	<b>-12.3%</b> -8.3%	<b>0.6%</b> 2.2%	<b>3.2%</b> 2.3%	<b>--</b> --	<b>10/1/10</b>
<b>LA Capital World</b> MSCI ACWI Ex-US	<b>626,144,919</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>10/30/15</b>
<b>Marathon-London Intl Fund</b> MSCI EAFE Index	<b>594,154,322</b>	<b>-0.1%</b> -8.3%	<b>6.5%</b> 2.2%	<b>--</b> --	<b>--</b> --	<b>2/1/12</b>
<b>SSGA Small Cap Intl Alpha Strategy</b> S&P Developed Ex-US Small Cap	<b>556,955,175</b>	<b>1.3%</b> 1.6%	<b>7.3%</b> 6.3%	<b>6.6%</b> 4.3%	<b>15.6%</b> 14.6%	<b>5/1/07</b>
<b>Wellington Intl Research Equity</b> S&P BMI World Ex-US Index	<b>553,217,537</b>	<b>-7.9%</b> -1.6%	<b>3.1%</b> 4.4%	<b>2.7%</b> 3.0%	<b>11.0%</b> 8.5%	<b>12/1/05</b>
<b>Pimco EM Stock Plus</b> MSCI Emerging Market Index	<b>395,701,798</b>	<b>-15.5%</b> -12.0%	<b>--</b>	<b>--</b>	<b>--</b>	<b>3/31/15</b>
<b>LA Capital Emerging Market</b> MSCI Emerging Market Index	<b>285,970,160</b>	<b>-11.4%</b> -12.0%	<b>-4.2%</b> -4.5%	<b>-2.6%</b> -4.1%	<b>--</b> --	<b>12/8/09</b>
<b>Effissimo Capital Management Japan</b> MSCI EAFE Net Div Index (unhedged)	<b>222,024,314</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>10/30/15</b>
<b>Lazard Wilmington Intl Equity Portfolio</b> MSCI EAFE Net Div Index (unhedged)	<b>210,825,000</b>	<b>-4.2%</b> -8.3%	<b>--</b> --	<b>--</b> --	<b>--</b> --	<b>5/1/14</b>
<b>T Rowe Price Intl Core</b> MSCI EAFE Index	<b>205,696,637</b>	<b>-8.8%</b> -8.3%	<b>--</b> --	<b>--</b> --	<b>--</b> --	<b>4/1/14</b>
<b>Wellington Emerging Local Equity</b> MSCI Emerging Market Index	<b>182,596,501</b>	<b>-9.8%</b> -12.0%	<b>-2.9%</b> -4.5%	<b>--</b> --	<b>--</b> --	<b>12/1/11</b>

**International Indexed Manager Performance, Net of Fees**  
3/31/16

<u>Fund Name</u>	<u>Market Value</u>	<u>1-Year</u>	<u>3-Years</u>	<u>5-Years</u>	<u>7-Years</u>	<u>Inception Date</u>
<b>SSgA PMI Fund</b> S&P Developed Ex-US Large/Midcap	<b>\$955,456,099</b>	<b>-8.1%</b> -8.5%	<b>1.6%</b> 1.6%	<b>1.7%</b> 1.5%	<b>--</b> --	<b>4/1/10</b>
<b>SSgA EMI Fund - Europe/Pacific</b> S&P EPAC Small Cap	<b>782,142,000</b>	<b>2.8%</b> 2.4%	<b>7.7%</b> 7.5%	<b>5.9%</b> 5.5%	<b>--</b> --	<b>4/1/10</b>
<b>Vanguard Emerging Market</b> Spliced Emerging Market Index **	<b>545,632,057</b>	<b>-12.6%</b> -12.5%	<b>-4.3%</b> -4.2%	<b>-4.1%</b> -4.0%	<b>--</b> --	<b>7/1/09</b>
<b>Vanguard Developed Mkts Fund</b> Spliced Developed Ex-US Index *	<b>531,681,360</b>	<b>-7.3%</b> -7.2%	<b>2.5%</b> 2.7%	<b>2.9%</b> 2.6%	<b>--</b> --	<b>4/1/10</b>

\* Spliced Developed Ex-US Index: MSCI EAFE Index through May 29, 2013; FTSE Developed Ex North America Index through December 20, 2015; FTSE Developed All-Cap Ex-US Transition Index thereafter. Benchmark returns are adjusted for withholding taxes.

\*\* Spliced Emerging Market Index: Select Emerging Markets Index through August 23, 2006; MSCI Emerging Markets Index through January 9, 2013; FTSE Emerging Transition Index through June 27, 2013; FTSE Emerging Index through November 1, 2015; and FTSE Emerging Markets All-Cap China A Transition Index thereafter. Benchmark returns are adjusted for withholding taxes.

State of Michigan Retirement Systems

# PRIVATE EQUITY REVIEW

Investment Advisory Committee Meeting

June 16, 2016



Peter A. Woodford  
Senior Investment Manager  
Private Equity Division



## EXECUTIVE SUMMARY

### Performance

MPSERS Plan	1-Year	3-Years	5-Years	7-Years	10-Years
Annualized Returns	9.9%	14.7%	13.7%	14.1%	12.3%
Benchmark Return	4.5%	18.3%	15.6%	21.5%	11.2%
Peer Median Return	5.7%	10.4%	9.6%	10.9%	9.2%
Rank vs. Peers	12	15	8	10	6

- The Private Equity Division annualized return was 9.9% for the year, beating its benchmark by 540 basis points.
- Private Equity returns have been strong relative to peer median returns over all time periods over the past ten years, ranking in the top 12% and 6% of peers over the past one and ten years respectively.
- Over the twelve months ending 3/31/16, the Private Equity Division returned approximately \$1.2 billion, net of contributions, to the pension fund. The pace of distributions is expected to slow for the remainder of 2016, as dividend recaps have largely played out and the IPO market was effectively shut during the first quarter.

### Strategy Update

- Private Equity closed seven commitments during the quarter totaling \$762.5 million.
  - \$250 million to Advent International GPE VIII-B, a large diversified buyout fund
  - \$200 million to Berkshire Fund IX, a diversified middle market buyout fund
  - \$200 million to Green Equity Investors VII, a retail focused diversified middle market buyout fund
  - \$75 million to Vista Equity Partners VI, a buyout fund focused on enterprise software, data and technology solutions
  - \$22 million to Accel Growth IV, a venture fund focused on growth stage technology
  - \$10 million to Accel XIII, a venture fund focused on early stage technology
  - \$5.5 million to Accel Leaders Fund focused on later stage/growth opportunities

### Market Environment

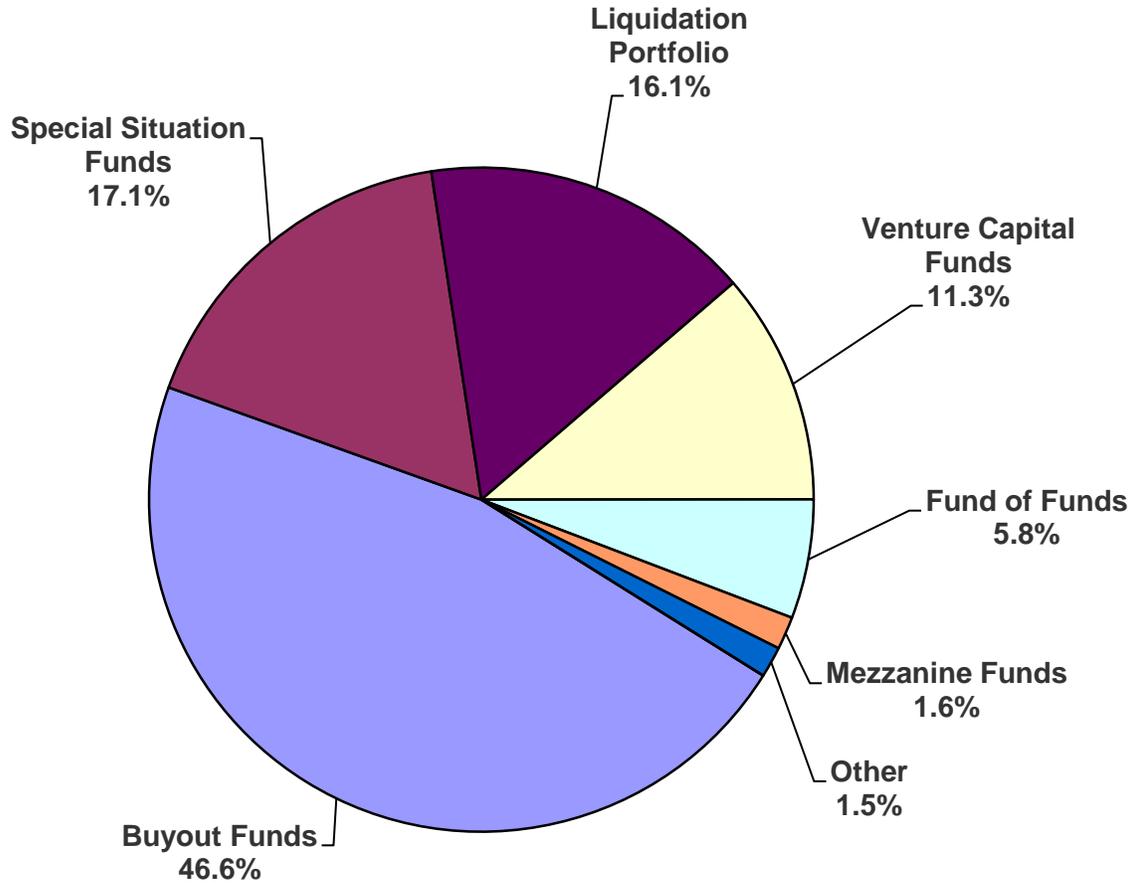
- Financial markets experienced a turbulent first quarter. Most risk assets sold off in January and February before rebounding in March. Early in the quarter, volatility was driven by fears of a slowdown in global economic growth, particularly in China, and continued weakness in energy commodity markets. Risk appetite returned to the financial markets in the second half of the quarter, helped in part by a rebound in oil

prices and dovish commentary by the U.S. Federal Reserve regarding its path for monetary policy for the rest of the year.

- Not surprisingly, given the high level of volatility in the public equity markets, IPO activity came to a near standstill during the first quarter. M&A activity also slowed markedly in the first quarter following a record-setting 2015. Despite the slowdown in both IPO and M&A activity, sales of private equity-backed companies remained relatively strong in the first quarter, largely due to corporate buyers. New buyout investment activity also slowed in the first quarter, as is often the case during periods of high market volatility. Volatility in the public equity markets, however, likely helped facilitate several large take-private buyout deals announced in the quarter. Many general partners believe that a prolonged period of uncertainty and volatility in financial markets will lead to attractive opportunities to deploy capital, largely due to mispriced assets.
- Private Equity's strategy for the next three to six months will focus on credit. Since the middle of 2015, syndicated credit markets have experienced a significant dislocation, presenting attractive investment opportunities for private mezzanine capital. Mezzanine debt is attractive, particularly in the current cycle, because of low issuance of leveraged loan and high yield debt, attractive coupon rates, low default rates, potential for equity upside and co-investment. The private equity division continues to evaluate several opportunities.



# SMRS Private Equity 3/31/16



<b>Market Value in Millions</b>				
	<u>3/31/16</u>		<u>12/31/15</u>	
Buyout Funds	\$4,454	46.6%	\$4,430	45.9%
Special Situation Funds	1,634	17.1%	1,743	18.0%
Liquidation Portfolio	1,533	16.1%	1,594	16.5%
Venture Capital Funds	1,077	11.3%	1,073	11.1%
Fund of Funds	558	5.8%	520	5.4%
Mezzanine Funds	157	1.6%	168	1.7%
Other	140	1.5%	131	1.4%
<b>Total</b>	<b><u>\$9,553</u></b>	<b><u>100.0%</u></b>	<b><u>\$9,659</u></b>	<b><u>100.0%</u></b>



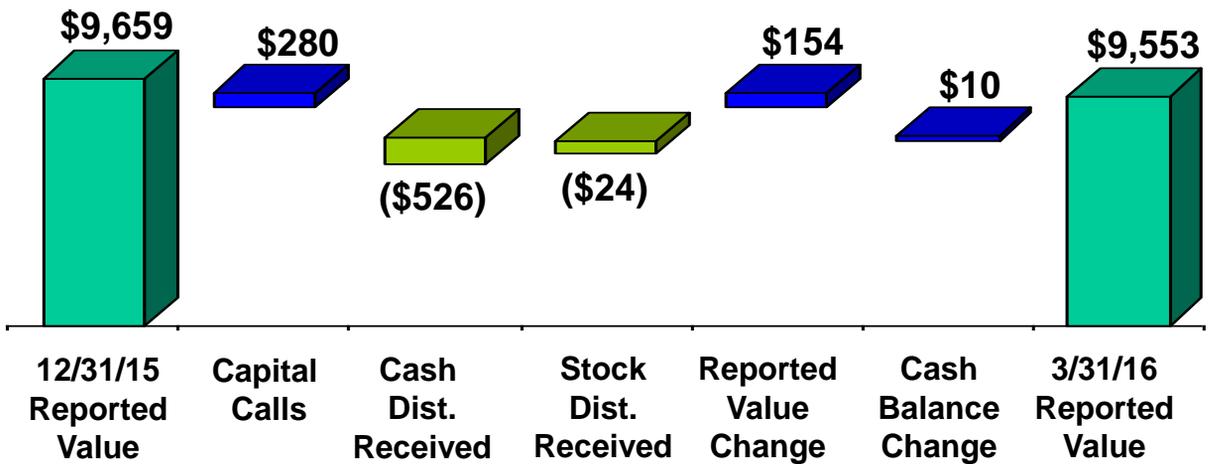
# SMRS

## Private Equity

### 3/31/16

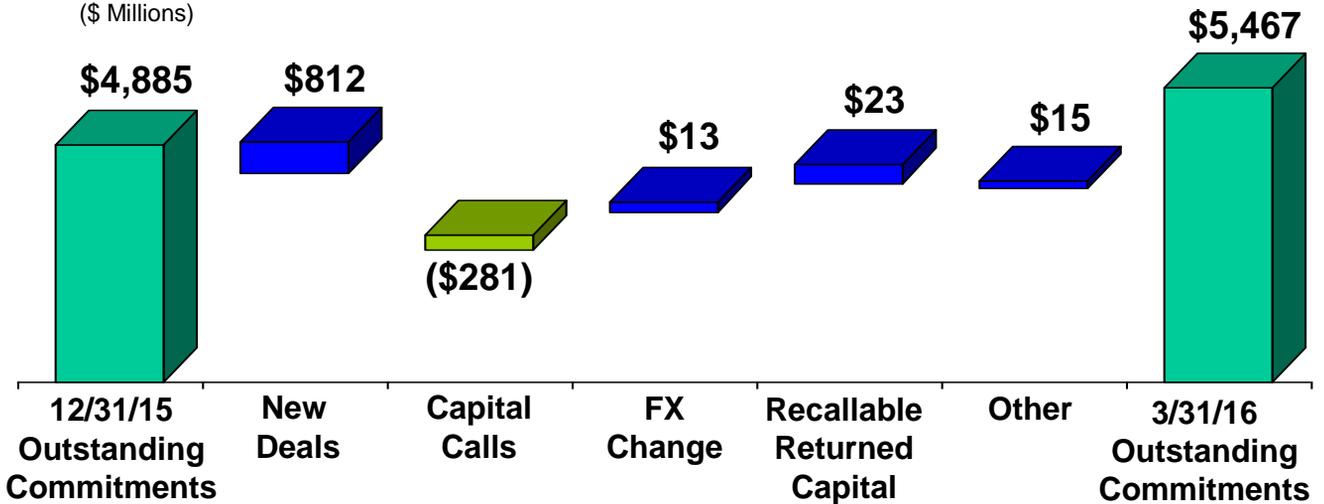
#### Invested Commitments

(\$ Millions)



#### Outstanding Commitments

(\$ Millions)



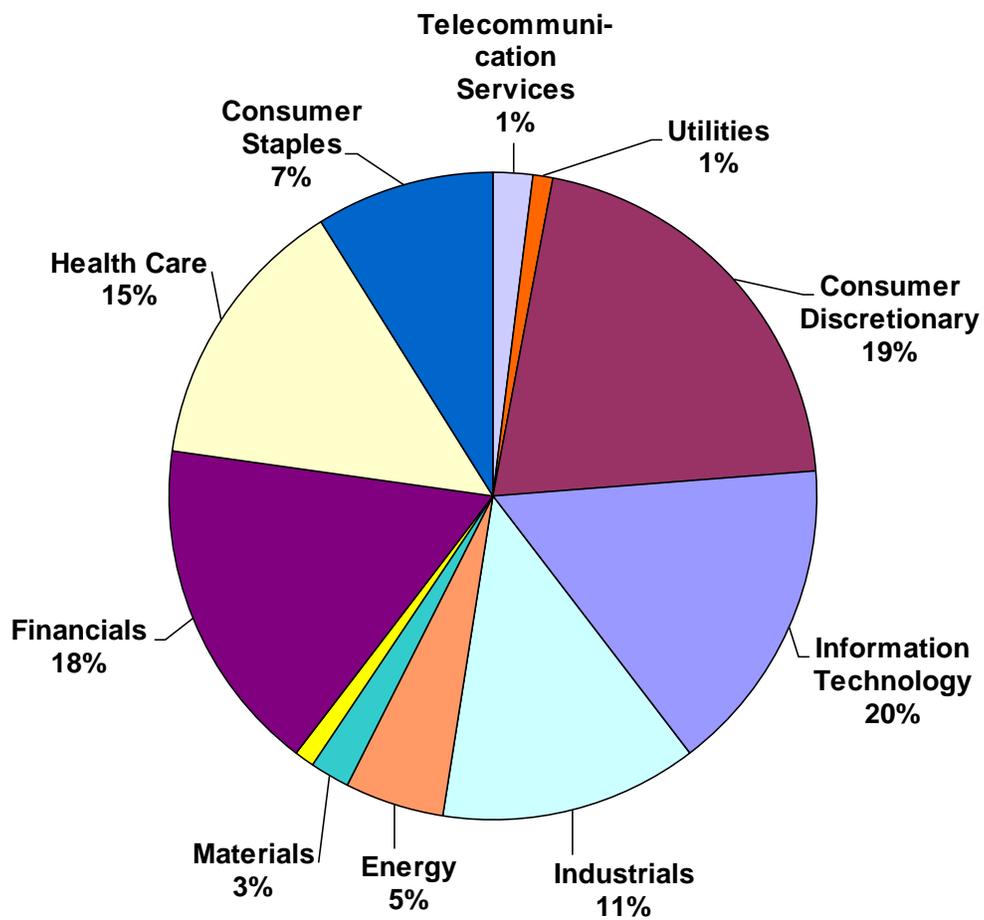


# SMRS

## Private Equity

### 3/31/16

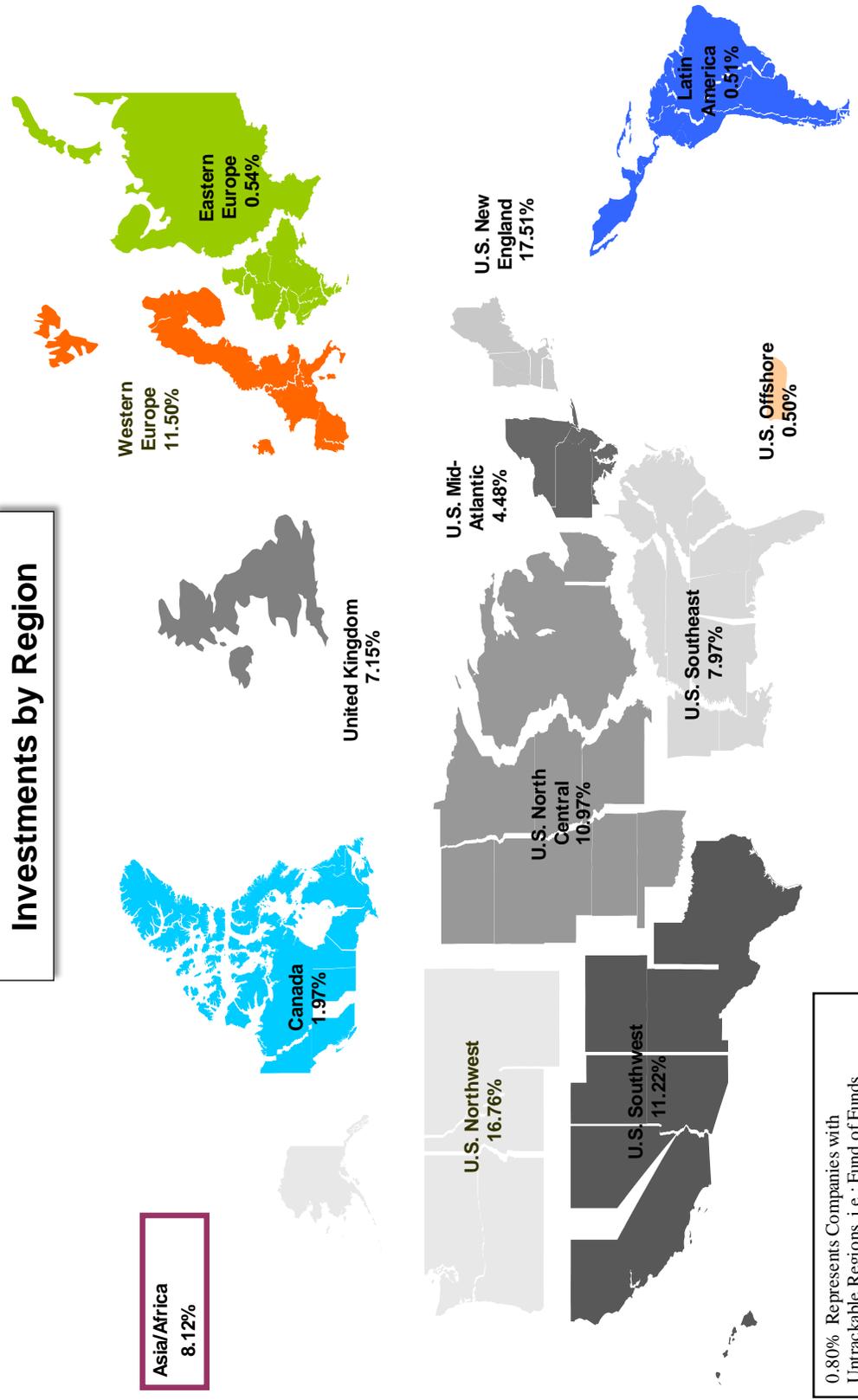
#### Investments by Industry



These numbers are based on the most recent available General Partner Data; primarily 12/31/15 and are subject to change.

**SMRS**  
Private Equity  
3/31/16

**Investments by Region**



0.80% Represents Companies with Untrackable Regions, i.e.; Fund of Funds

Geographic Report: North America 71%, Europe 19%, Asia 8%, Other 2%



**SMRS**  
**Private Equity**  
**3/31/16**

**Portfolio by Vintage Year**

(\$ Millions)

<b>Asset Vintage</b>	<b>Reported Value</b>	<b>Outstanding Commitment</b>	<b>Total Exposure</b>
1986-98	\$ 18	\$ 14	\$ 32
1999	33	10	43
2000	71	28	99
2001	228	38	266
2002	83	9	92
2003	30	18	48
2004	179	47	226
2005	462	25	487
2006*	1,289	278	1,567
2007	1,063	166	1,229
2008	1,148	226	1,374
2009	74	3	77
2010	318	31	349
2011	723	214	937
2012	1,028	447	1,475
2013	386	334	720
2014	577	850	1,427
2015	1,702	1,966	3,668
2016	-	763	763
Cash	138	-	138
Act. Small Cap - Stock Dist	3	-	3
<b>Total</b>	<b>\$ 9,553</b>	<b>\$ 5,467</b>	<b>\$15,020</b>

\*Liquidation portfolio is 2006 vintage

**FX Exposure**

(\$ Millions)

	<b>Reported Value</b>	<b>Outstanding Commitment</b>	<b>Total Exposure</b>	<b>Total (USD)</b>
Euro (\$1.14/ €)	€ 434	€ 250	€ 684	\$779
Pound (\$1.43/ £)	£12	£1	£13	\$19



**SMRS**  
**Private Equity**  
**3/31/16**

**Top 10 Sponsors**

(\$ Millions)

<u>Asset Type</u>	<u>Reported Value</u>	<u>Outstanding Commitment</u>	<u>Total</u>
HarbourVest Partners	\$ 1,460	\$ 346	\$1,806
KKR	633	231	864
Blackstone Capital Partners	450	412	862
Grosvenor Capital Management	644	146	790
Warburg Pincus Capital	445	293	738
Advent International	365	343	708
The Carlyle Group	375	255	630
Leonard Green & Partners	311	266	577
TPG	383	188	571
Berkshire Partners	217	246	463
<b>Top 10 Total Value</b>	<b><u>\$5,283</u></b>	<b><u>\$2,726</u></b>	<b><u>\$8,009</u></b>

**Cash Weighted Rates of Return\***

<u>(Net IRR)</u>	<u>Current Qtr.</u>	<u>1-Year</u>	<u>3-Years</u>	<u>5-Years</u>	<u>10-Years</u>
Buyout	-0.9%	8.2%	14.6%	12.9%	13.2%
Fund of Funds	-0.1%	5.5%	12.0%	10.1%	10.9%
Mezzanine	-0.2%	-4.9%	5.4%	10.2%	8.4%
Special Situations	-0.1%	-0.7%	8.2%	8.9%	8.1%
Venture Capital	-0.2%	3.6%	18.7%	16.1%	16.5%

\*These numbers are based on most recent available General Partner reported data; primarily 12/31/15 and are subject to change.



# SMRS Private Equity 3/31/16

## Net Market Values by Ownership Entity

	Adjusted Reported Value	Unfunded Commitment
Accel Europe I, L.P.	\$ 17,606,092	1
Accel Europe II	16,817,342	3,300,000
Accel Growth Fund II, L.P.	12,641,470	1,260,000
Accel Growth Fund III, L.P.	10,063,752	4,060,000
<b>** Accel Growth Fund IV L.P.</b>	<b>0</b>	<b>22,000,000</b>
Accel IX, L.P.	9,643,754	3,000,000
<b>** Accel Leaders Fund L.P.</b>	<b>0</b>	<b>5,500,000</b>
Accel VI-S	2,565,570	652,611
Accel VI, L.P.	1,387,652	-
Accel VII, L.P.	1,181,781	5,000,000
Accel VIII, L.P.	3,213,502	4,782,499
Accel X, L.P.	22,565,034	750,000
Accel XI, L.P.	7,100,605	1,680,000
Accel XII, L.P.	4,574,295	2,625,000
<b>** Accel XIII, L.P.</b>	<b>0</b>	<b>10,000,000</b>
Advent Global Private Equity III	975,636	20
Advent Global Private Equity IV	12,159	-
Advent Global Private Equity V	21,347,020	8,700,000
Advent International GPE VI-A LP	177,139,147	6,699,980
Advent International GPE VII-B, L.P.	161,957,768	46,900,000
<b>** Advent International GPE VIII-B, L.P.</b>	<b>0</b>	<b>250,000,000</b>
Advent Latin American Private Equity Fund VI, L.P.	3,840,959	30,362,500
Affinity Asia Pacific Fund II, L.P.	0	5,288,237
Affinity Asia Pacific Fund III, L.P.	73,155,229	13,543,674
Affinity Asia Pacific Fund IV, L.P.	50,087,542	83,186,674
APA Excelsior V	115,000	545,625
Apax Europe Fund VI	31,137,009	2,409,918
Apax Europe V, L.P.	218,428	-
Apax Europe VII, L.P.	75,847,599	2,846,058
Apax Excelsior VI	200,016	1,614,434
Apax US VII	20,139,660	417,509
Apax VIII - B, L.P.	97,869,470	16,753,156
Apollo Investment Fund VIII L.P.	30,254,815	68,431,856
Arboretum Ventures II	2,751,126	-
Arboretum Ventures III, L.P.	13,556,793	1,485,000
Arboretum Ventures IV, L.P.	2,515,839	27,150,000
Ares Corporate Opportunities Fund II	18,710,066	11,423,773
Ares Corporate Opportunities Fund III, LP	97,167,300	11,415,987
Ares Corporate Opportunities Fund IV, L.P.	80,149,864	26,951,728
ASF Norman, LLC Receivable	2,571,083	-
AXA ASF Miller Co-Investment	48,958,515	22,721,187

	<u>Adjusted Reported Value</u>	<u>Unfunded Commitment</u>
Axiom Asia IV, L.P.	955,601	49,044,399
Axiom Asia Private Capital Fund III, L.P.	23,527,423	15,101,764
BC European Capital IX	63,652,303	19,765,239
BC European Capital VII, L.P.	556,556	-
BC European Capital VIII, L.P.	32,149,828	8,911,281
Berkshire Fund IV, L.P.	0	1,898,016
<b>** Berkshire Fund IX, L.P.</b>	<b>0</b>	<b>200,000,000</b>
Berkshire Fund V, L.P.	259,177	3,281,560
Berkshire Fund VI, L.P.	41,919,123	6,922,675
Berkshire Fund VII, L.P.	81,424,203	2,454,799
Berkshire Fund VIII, L.P.	93,105,453	31,632,631
Blackstone Capital Partners IV	42,825,085	5,043,497
Blackstone Capital Partners V	97,245,047	16,142,412
Blackstone Capital Partners V-S	14,526,571	712,476
Blackstone Capital Partners VI, LP	275,576,325	71,746,840
Blackstone Capital Partners VII, L.P.	0	300,000,000
Bridgepoint Europe IV	42,932,167	6,878,834
Carlyle Europe Partners II	7,335,444	4,222,344
Carlyle Europe Partners III	64,328,598	12,691,895
Carlyle Europe Partners IV, L.P.	44,689,542	69,449,637
Carlyle Partners IV, L.P.	21,986,224	16,009,296
Carlyle Partners V L.P.	158,031,921	58,421,628
Carlyle Partners VI, L.P.	78,685,656	94,756,066
Castle Harlan Partners IV	11,754,216	5,286,319
Castle Harlan Partners V	37,776,909	40,597,659
CCMP Capital Investors II	76,625,086	10,330,517
CCMP Capital Investors III, L.P.	25,093,904	25,295,332
Centerbridge Capital Partners III, LP	21,547,171	54,632,599
Cerberus SMRS Partners, L.P.	108,103,281	8,804,657
CM Liquidity Fund, L.P.	0	25,000,000
CMEA Ventures VI	0	-
Coller International Partners IV	3,705,960	1,000,000
Coller International Partners V, L.P.	59,435,729	43,600,000
Coller International Partners VI, L.P.	75,869,606	35,223,267
Coller International Partners VII, L.P.	5,279,811	144,720,189
Crescent Mezzanine Partners VI, L.P.	58,359,652	15,663,922
DLJ Investment Partners II	161,056	-
DLJ Investment Partners III	10,780,761	57,712,985
Dover Street IX, L.P.	0	100,000,000
EDF Ventures III	1,619,161	-
EnCap Energy Capital Fund X, L.P.	3,982,729	40,182,880
Entertainment IP Fund, L.P.	263,301	49,248,738
FIMI Opportunity 6, L.P.	0	50,000,000
FirstMark Capital I, L.P.	87,945,875	196,596
FirstMark Capital OF I, L.P.	7,878,842	11,300,000
FirstMark Capital P2, L.P.	168,350,000	-
Flagship Ventures Fund 2004	11,298,587	-
Flagship Ventures Fund 2007, L.P.	43,617,482	-
Flagship Ventures Fund IV, L.P.	73,961,108	2,100,000
Flagship Ventures Fund V	10,555,019	23,800,000
Fox Paine Capital Fund II, LP	20,266,741	15,539,184

	<u>Adjusted Reported Value</u>	<u>Unfunded Commitment</u>
FS Equity Partners VII, L.P.	16,685,062	82,320,533
G-II Acquisition Holdings Note	6,932,579	-
GCM Grosvenor Fund Investment Program I, L.P.	18,288,294	1,456,755
GCM Grosvenor Fund Investment Program II, L.P.	66,842,921	15,984,173
GCM Grosvenor Fund Investment Program III - 2004	78,292,205	5,029,018
GCM Grosvenor Fund Investment Program III - 2006	108,698,864	10,682,495
GCM Grosvenor Fund Investment Program V, L.P.	106,001,883	16,613,747
GCM Grosvenor Fund Investment Program VI, L.P.	15,372,990	19,227,869
GCM Grosvenor SeasPriFIP LP (PIS06-10)	90,221,056	27,753,029
GCM Grosvenor SeasPriFIP LP (PIS14)	85,577,442	35,047,659
GCM Grosvenor SeasPriFIP LP (Seed)	74,549,893	13,933,191
Glencoe Capital Michigan Opportunities Fund, LP	20,184,017	9,178,668
Green Equity Investors IV	7,717,032	1,136,036
Green Equity Investors V	204,294,325	25,966,435
Green Equity Investors VI, L.P.	98,802,424	38,793,959
<b>** Green Equity Investors VII, L.P.</b>	<b>0</b>	<b>200,000,000</b>
GSO Capital Opportunities Fund II, L.P.	19,318,835	18,877,945
HarbourVest Dover Street VIII, L.P.	43,526,352	19,743,750
HarbourVest Int'l III Direct	3,265,760	1,000,000
HarbourVest Int'l III Partnership	1,651,592	1,200,000
HarbourVest Partners Mezzanine Income Fund	2,625,000	47,375,000
HarbourVest V Partnership	254,134	300,000
HarbourVest VI - Direct Fund LP	4,152,963	750,000
HarbourVest VI Partnership	12,907,080	2,000,000
Harvest Partners VII, L.P.	0	75,000,000
HVST - TOPE LLC	109,218,297	-
Insight Venture Partners Growth-Buyout Coinvestment Fund	16,451,305	32,875,000
Insight Venture Partners IX, L.P.	25,875,710	71,000,000
Kelso Investment Associates IX, L.P.	18,855,705	74,006,583
Kelso Investment Associates VII	3,428,333	4,970,176
Kelso Investment Associates VIII	109,156,220	25,797,539
Khosla Ventures III, L.P.	57,223,530	2,000,000
Khosla Ventures IV, L.P.	63,887,320	4,750,000
Khosla Ventures V, L.P.	16,667,018	33,500,000
KKR 2006 Fund, L.P.	200,549,566	7,231,738
KKR Asia	49,148,426	2,927,456
KKR Asian Fund II, L.P.	28,474,706	30,986,277
KKR China Growth Fund	34,378,440	14,477,088
KKR E2 Investors (Annex) Fund	767,579	587,747
KKR European Fund II	45,922,353	-
KKR European Fund III	96,615,575	23,204,025
KKR European Fund IV L.P.	19,092,658	104,420,527
KKR European Fund LP 1	1,296,717	-
KKR Millennium Fund	57,307,661	-
KKR North America Fund XI, L.P.	99,742,756	46,841,439
Lightspeed Venture Partners VI	2,792,357	-
Lightspeed Venture Partners VII, L.P.	48,525,208	510,436
Lion Capital Fund I (HME II)	111,365	11,557,724
Lion Capital Fund II	6,651,326	4,828,158
Lion Capital Fund III, L.P.	89,351,415	12,295,613

	<b>Adjusted Reported Value</b>	<b>Unfunded Commitment</b>
Matlin Patterson Global Opportunities Partners	41,245	-
MatlinPatterson Global Opportunities Partners II	3,270,153	-
MatlinPatterson Global Opportunities Partners III	64,902,672	4,688,461
Menlo Ventures IX, L.P.	4,023,003	-
Menlo Ventures X, L.P.	47,948,249	-
Menlo Ventures XI, L.P.	75,148,630	2,000,000
MeriTech Capital Partners II, L.P.	2,620,728	1,850,000
Meritech Capital Partners III, L.P.	20,645,905	600,000
Meritech Capital Partners IV, L.P.	17,434,981	425,000
Meritech Capital Partners V, L.P.	5,662,465	13,950,000
Michigan Growth Capital Partners II, L.P.	136,410,368	54,711,872
Michigan Growth Capital Partners, LP	118,012,723	17,380,428
Midtown Fund III, L.P.	955,998	-
Midtown II Liquidating Trust	2,340,346	-
New Leaf Growth Fund I, L.P.	123,588,326	15,000,000
New Leaf Ventures II, L.P.	22,078,555	-
New Leaf Ventures III, L.P.	12,242,100	25,312,500
Nordic Capital VI, L.P.	34,246,974	-
Nordic Capital VII	67,192,246	5,550,854
Nordic Capital VIII, L.P. (Alpha)	22,475,689	23,384,039
Oak Investment Partners X, L.P.	8,261,741	-
Oak Investments Partners IX, L.P.	1,379,686	-
Oaktree Opportunities Fund X, L.P.	4,105,405	25,500,000
Oaktree Opportunities Fund Xb, L.P.	0	70,000,000
OCM Opportunities Fund IX, L.P.	70,195,820	-
OCM Opportunities Fund VII (B), L.P.	4,371,098	-
OCM Opportunities Fund VII, L.P.	6,081,856	-
OCM Opportunities Fund VIII B, L.P.	28,010,238	-
OCM Opportunities Fund VIII, L.P.	15,723,065	-
OCM Principal Opportunities Fund IV	23,166,140	5,002,377
Ocqueoc Holdings, LLC	10,828,565	-
One Liberty Fund III	927,794	-
One Liberty Fund IV	1,814,412	-
One Liberty Ventures 2000	7,301,330	-
Parthenon Investors II	1,503,744	3,172,919
Parthenon Investors III	43,685,674	2,779,682
Parthenon Investors IV, L.P.	32,664,666	13,606,490
Peninsula Capital Fund IV	13,179,889	2,201,026
Peninsula Fund VI, L.P.	7,530,257	32,370,000
Phoenix Equity Partners IV	17,092,512	859,096
Public Pension Capital, LLC	4,565,295	45,727,002
Questor Partners Fund II	2,321,179	5,744,192
Rhone Partners V, L.P.	1,155,034	112,352,080
Riverside Capital Appreciation Fund VI, LP	44,983,245	34,816,404
Riverside Micro Cap Fund I, LP	26,721,116	6,497,898
Riverside Micro-Cap Fund II, L.P.	51,261,768	2,735,834
Riverside Micro-Cap Fund III, L.P.	41,165,594	4,638,012
Riverside Micro-Cap Fund IV	0	50,000,000
Shamrock Growth Capital Fund IV, L.P.	279,599	49,720,401
Silver Lake Partners II	8,031,316	3,531,586

	<b>Adjusted Reported Value</b>	<b>Unfunded Commitment</b>
Silver Lake Partners III	80,197,983	19,303,187
Silver Lake Partners IV, L.P.	27,581,994	29,602,899
SM/TCP L.P.	23,199,705	23,495,992
SMRS-NCRP LLC	1,282,968,738	173,483,832
Sprout Capital IX	80,155	-
TCW Shared Op Fund III	1,048,221	-
TCW/Crescent Mezzanine Partners III, L.P.	4,102,241	4,552,763
TCW/Crescent Mezzanine Partners IV, L.P.	7,179,249	6,030,737
TCW/Crescent Mezzanine Partners V, LLC	40,746,820	13,232,460
The Huron Fund III, L.P.	15,420,496	4,992,756
The Huron Fund IV, L.P.	14,205,811	20,251,846
The Shansby Group 4	2,356,493	520,829
The Shansby Group 5 (TSG5)	43,508,109	7,443,077
TPG IV (Texas Pacific Group IV)	11,518,787	211,725
TPG Partners III, LP	9,529,637	2,087,002
TPG Partners VI, L.P.	197,102,651	23,698,597
TPG Partners, VII, L.P.	12,942,419	135,612,560
TPG V (Texas Pacific Group V)	151,630,506	26,611,195
Trilantic Capital Partners V (North America) Fund A, L.P.	20,941,610	25,551,011
TSG6, L.P.	126,126,829	40,972,319
TSG7 A L.P.	690,723	124,309,277
Turnbridge Capital Partners I , LP	17,349,524	76,827,388
Veritas Capital Fund V, L.P.	37,597,306	36,969,209
Veritas V Co-Investors, L.P.	4,965,039	20,000,000
Vista Equity Partners Fund V, L.P.	49,172,206	5,563,454
<b>** Vista Equity Partners Fund VI, L.P.</b>	<b>0</b>	<b>75,000,000</b>
Warburg Pincus Energy MCIP, L.P.	10,921,947	14,173,571
Warburg Pincus Energy, L.P.	16,651,281	81,300,000
Warburg Pincus Equity Partners, L.P.	3,913,315	-
Warburg Pincus International Partners	10,009,157	-
Warburg Pincus Private Equity IX	30,066,077	-
Warburg Pincus Private Equity VIII, L.P	17,401,318	-
Warburg Pincus Private Equity X, L.P.	157,440,449	-
Warburg Pincus Private Equity XI, L.P.	192,393,206	29,500,000
Warburg Pincus Private Equity XII, L.P.	6,155,097	168,525,000
WestAm COREplus Private Equity QP	3,731,819	2,086,719
WestAm Special Private Equity Partners	4,502,562	2,317,427
<b>* Total Private Equity</b>	<b>\$ 9,412,536,249</b>	<b>5,467,252,333</b>
Cash	122,363,102	-
Active Small Cap Cash	15,084,250	-
Active Small Cap	2,887,734	-
Income Accruals	224,692	-
<b>Grand Total</b>	<b>\$ 9,553,096,026</b>	<b>5,467,252,333</b>

\* Total Private Equity amounts do not include Cash and Active Small Cap

\*\* New Commitments made during quarter reported



State of Michigan Retirement Systems

# REAL ESTATE AND INFRASTRUCTURE REVIEW

Investment Advisory Committee Meeting

June 16, 2016



Brian C. Liikala  
Senior Investment Manager  
Real Estate and Infrastructure Division



# EXECUTIVE SUMMARY

## Performance

<b>MPSERS Plan</b>	<b>1-Year</b>	<b>3-Years</b>	<b>5-Years</b>	<b>7-Years</b>	<b>10-Years</b>
Annualized Return	11.3%	13.7%	12.2%	5.6%	5.4%
NCREIF NPI	10.4%	10.5%	10.5%	7.7%	6.2%
Peer Median Return	11.9%	12.4%	12.1%	6.4%	4.3%
Rank vs. Peers	58	30	49	63	30

- Total Real Estate and Infrastructure Division (REID) value was \$6.3 billion with a total one-year return of 11.3%. Strong performance was the result of increased rental income and valuations in for-rent housing and hospitality assets. Credit strategies and unique opportunities sourced by staff have also contributed to overall performance.

## Strategy Update

- The REID has a focused strategy that pursues attractive risk-adjusted returns. This includes urban development of apartments and warehouses, investing in office buildings where REID can add value through management and leasing, and investing in various levels of debt on properties. Also, REID has selectively added exposure in Europe where value-add opportunities are sourced through managers that have an established history and presence in the market.
- The REID has been selling stabilized assets at attractive low capitalization rates where rental income increases are expected to be limited. The REID has disposed of suburban properties in favor of developing/redeveloping properties in dense urban areas where rent growth and appreciation are strong. The REID is also working with its advisors in executing the disposition of non-strategic properties in secondary markets at attractive values returning over \$2 billion in gross distributions over the last two years.
- The REID has approximately \$1.6 billion in unfunded commitments. New commitments closed during the quarter include:
  - \$200 million in Rialto Credit Partnership, LP, a joint venture in a commercial real estate debt strategy platform, managed by Rialto Capital Management, LLC.
  - \$75 million in Apollo Asia Real Estate Fund, a closed-ended commingled fund focused on Asian real estate, with an additional \$25 million reserved for co-investments.
  - \$20 million co-investment in TSP Spartan C-1, LLC, a six building office complex located in San Jose, California, managed by Transwestern Strategic Partners.
  - \$15 million in IMRF II Coinvest Spiga, LP, a co-investment in a European retail property, managed by Invesco.
- The division is being very selective with new commitments, seeking opportunities that are shorter in duration, deliver more liquidity, produce consistent cash flow, and provide a stable yield.

## **Market Environment**

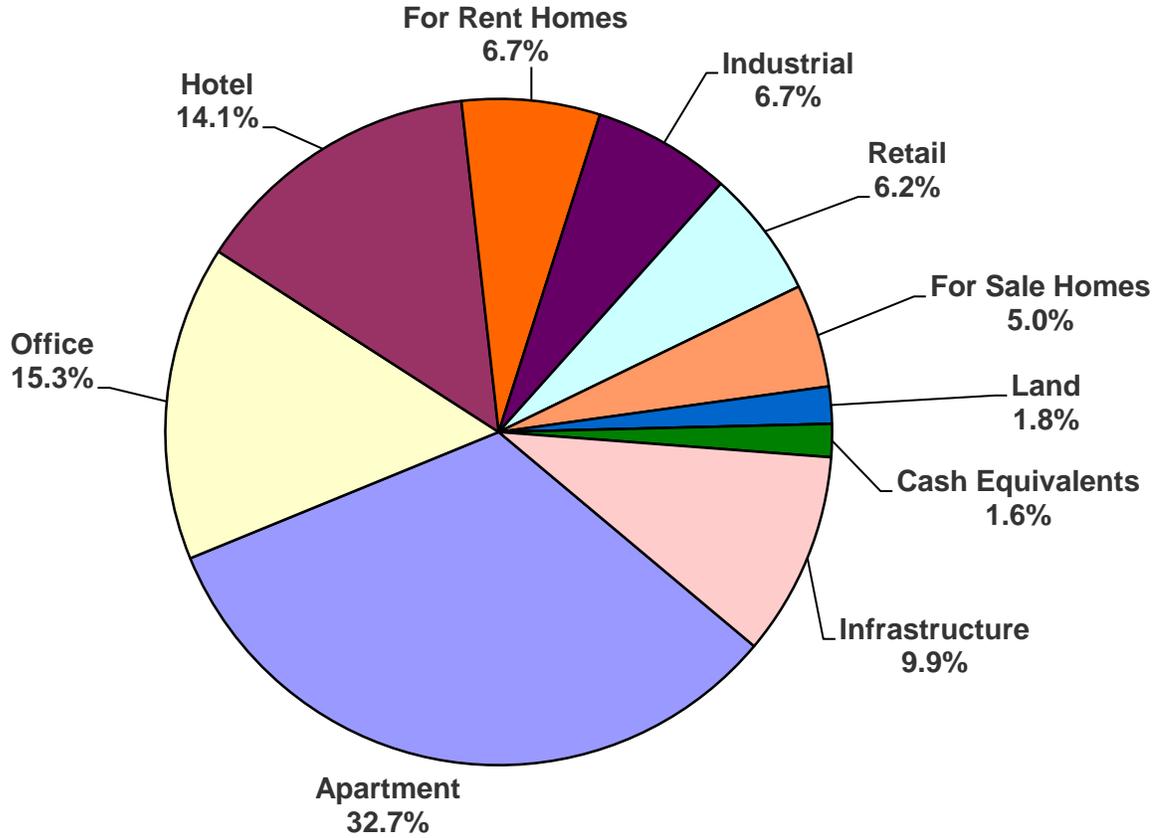
- High quality core assets continue to be in demand as investors, both domestic and international, seek long-term protection from volatility at the expense of historically low yields. Investors are also valuing unleased space into their pricing in major markets including New York, San Francisco, and Boston. However, early signs of prices leveling off are appearing. Lenders have become more selective in quality and location of the collateral. Development of condominiums in major urban markets has begun to ease. Industrial warehouse construction continues to meet growing demand. The U.S. has eased FIRPTA Rules to reduce federal taxes on foreign investors for real estate investments. This will likely encourage more offshore pension funds to invest in the U.S.
- Fund flows to the infrastructure sector continue to remain strong, as investor interest in the asset class continues to grow. Opportunities include North American energy where distressed pricing is appearing, power generation, European transportation, and emerging market fundamental infrastructure projects. Investors are prudently managing capital and only pursuing select opportunities.
- In the commercial mortgage-backed securities (CMBS) market, spreads over the swap rate for 10-year AAA-rated securities increased 1 basis point (bps) from the prior quarter and now stand at 135 bps. Early in the quarter, spreads widened significantly and new issuance was reduced considerably. More recently, spreads on high rated securities have tightened, although on lower-rated securities, spreads remain wide. This demonstrates a flight to quality for investors. Commercial Mortgage Alert reported that CMBS issuance is projected to be only \$70 billion for 2016 compared to \$106 billion in 2015. A wave of refinancing for 2007 ten-year vintage loans is on the horizon. New banking rules by the federal government will negatively impact traditional bank lenders in 2016 and beyond. This could make it difficult for borrowers to refinance properties, with borrowing costs expected to rise due to the new rules. However, this provides opportunities for non-bank lenders, where REID's strategy has focused its attention.



# SMRS

## Real Estate and Infrastructure

### 3/31/16

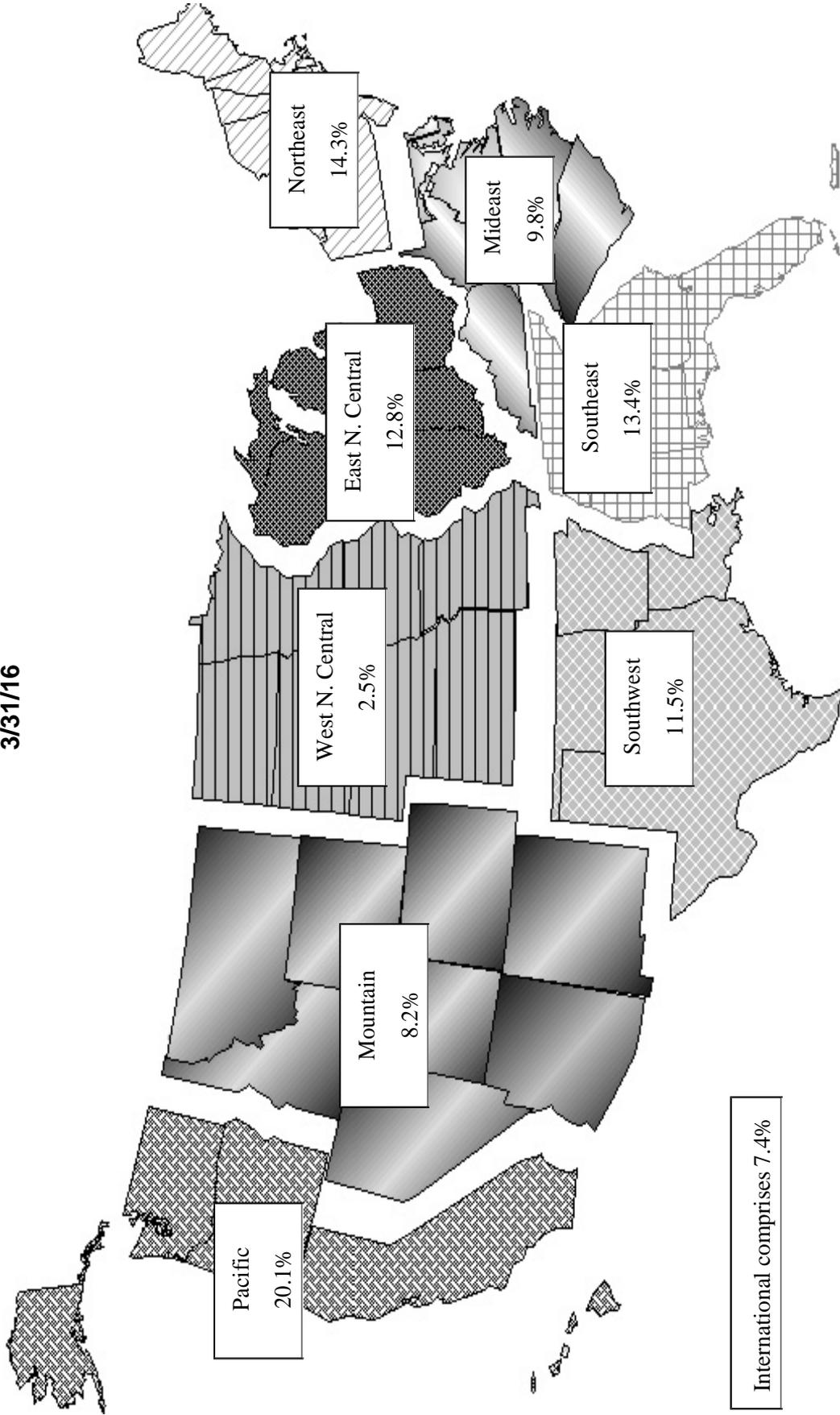


<b>Market Value in Millions</b>				
	<u>3/31/16</u>		<u>12/31/15</u>	
Apartment	\$2,052	32.7%	\$1,913	31.1%
Office	960	15.3%	937	15.2%
Hotel	887	14.1%	883	14.3%
Infrastructure	624	9.9%	603	9.8%
For Rent Homes	422	6.7%	423	6.9%
Industrial	418	6.7%	401	6.5%
Retail	388	6.2%	371	6.0%
For Sale Homes	315	5.0%	334	5.4%
Land	110	1.8%	123	2.0%
	<u>\$6,176</u>	<u>98.4%</u>	<u>\$5,988</u>	<u>97.2%</u>
Cash Equivalents	<u>100</u>	<u>1.6%</u>	<u>169</u>	<u>2.8%</u>
<b>Total Investments</b>	<b><u><u>\$6,276</u></u></b>	<b><u><u>100.0%</u></u></b>	<b><u><u>\$6,157</u></u></b>	<b><u><u>100.0%</u></u></b>



# SMRS Real Estate by Region

Based on Net Market Value  
(excludes cash & cash equivalents)  
3/31/16



Geographic regions defined by NCREIF, whose property index composition is: Pacific 31.5%, Mountain 5.3%, West N. Central 1.5%, Southwest 10.7%, East N. Central 7.8%, Southeast 9.7%, Northeast 9.7%, Midwest 12.4%



**SMRS  
Real Estate and Infrastructure  
3/31/16**

**Top Ten  
Advisors or Entity**

<u>Advisor or Entity</u>	<u>Net Market Value</u>
MWT Holdings, LLC (SHLP)	\$ 1,299,241,862
Clarion Partners	647,250,613
Blackstone Group	577,634,699
Kensington Realty Advisors, Inc.	317,954,878
CIM Investment Advisors LLC	254,446,694
Bentall Kennedy LP	248,560,203
Principal Real Estate Investors	235,631,252
Five Star Realty Partners, LLC	199,023,610
Domain Capital Advisors Inc	195,618,359
KBS Realty Advisors	190,942,867
	<hr/>
	<u>\$ 4,166,305,037</u>

**Occupancy  
by Property Type**

	Apartment	Office	Industrial	Retail	Hotel
SMRS Portfolio	94.1%	87.5%	90.8%	93.6%	76.3%
National Average	93.0%	86.8%	90.8%	94.2%	60.5%



# SMRS

## Net Market Values by Ownership Entity

3/31/16

### REAL ESTATE

	<u>Net Market Value</u>	<u>Unfunded Commitment</u>
801 Grand Avenue Capital, LLC	\$ 83,144,469	\$ 0
* <b>Apollo Asia Real Estate Fund, L.P.</b>	0	75,000,000
Avanath Affordable Housing I, LLC	18,718,774	2,492,748
Avanath Affordable Housing II, LLC	21,575,674	0
Avanath II SMRS Co-Investment Fund LLC	20,000,000	0
Beacon Capital Strategic Partners IV, LP	6,020,454	0
Beacon Capital Strategic Partners V, LP	9,089,829	2,500,000
Blackstone R/E IH3 Co-Inv Partners	422,385,964	0
Blackstone Real Estate Partners V, LP	33,722,208	2,087,026
Blackstone Real Estate Partners VI, LP	45,081,874	4,080,193
Blackstone Real Estate Partners VIII, LP	24,806,471	60,345,807
Capri Select Income II	135,606	0
Capri Urban Investors, LLC	22,104,300	0
CIM Fund III, LP	83,433,219	0
CIM Fund VIII, LP	41,595,163	63,803,421
CIM Urban REIT, LLC	91,662,479	0
CIM VI (Urban REIT), LLC	30,319,425	0
Clarion Gables Multifamily Trust	27,818,777	0
CPI Capital Partners N.A., LP	442,415	0
CPI Capital Partners N.A. Secondary, LP	5,303,457	0
Crown Small Cap Real Estate	6,216,157	18,750,000
Domain GVA-1, LLC	167,102,547	175,041,710
Domain Hotel Properties, LLC	446,439,527	0
Dynamic Retail Trust	69,160,077	0
Eastport Properties, LLC	19,959,795	0
Gateway Capital R/E Fund II, LP	52,713,397	1,275,000
Great Lakes Property Group Trust	302,694,961	0
* <b>IMRF II ColInvest Spiga LP</b>	13,499,100	0
Invesco Mortgage Recovery Feeder Fund	24,586,234	0
Invesco Mortgage Recovery Fund II, LP	57,332,209	17,543,107
IPF II Co-Invest LP	5,047,192	26,465,897
JBC North LaSalle, LLC	19,191,878	7,800,000
JBC Opportunity Fund III, LP	10,581,493	0
JP Morgan India Property Fund II, LLC	18,090,168	24,026,173
KBS/SM Fund III, LP	132,672,792	0
L-A Saturn Acquisition, LP	41,851,387	0
Landmark Real Estate Partners V, LP	16,277,610	3,900,000
LaSalle Asia Opportunity Fund II, LP	265,974	0
LaSalle Asia Opportunity Fund III, LP	12,545,123	1,250,000
Lion Industrial Trust	159,042,380	0
Lion Mexico Fund, LP	13,949,929	0
Lombard GVA0016	227,649,019	0
Low Hospitality Investment Partners	241,786	0
Lubert-Adler Real Estate Fund VII, LP	36,137,227	37,500,000
M1 Westgate ColInvest LLC	7,436,409	2,514,679
MERS Acquisitions, Ltd.	141,747,319	0
MG Alliance, LLC	19,463,627	0
MIP Holdco, LLC	67,354,169	31,757,947
Morgan Stanley R/E Fund V - International	4,188,135	0
Morgan Stanley R/E Fund VI - International	21,140,031	0
Morgan Stanley R/E Fund V - U.S.	2,684,092	0
Morgan Stanley R/E Special Situations Fund III	45,520,151	0

	<b>Net Market Value</b>	<b>Unfunded Commitment</b>
MWT Holdings, LLC	1,299,241,862	20,000,000
Northpark-Land Associates, LLLP	28,515,812	64,450,010
Orange Investors LLC	80,297,944	0
Paladin Realty Brazil Investors III (USA), LP	26,793,941	0
Paladin Realty Latin America Investors IV-CI, LP	16,479,621	26,137,450
Principal Separate Account	152,486,783	0
Proprium RE Spec Situations Fund LP	21,856,834	19,155,999
* <b>Rialto Credit Partnership LP</b>	0	200,000,000
Rialto Real Estate Fund, LP	32,020,797	0
Rialto Real Estate Fund II, LP	48,115,538	0
Rialto Real Estate Fund III-Debt, LP	0	50,000,000
Rialto Mezzanine Partners Fund	63,355,371	0
SM Brell II, LP	58,270,075	0
Stockbridge Real Estate Fund II-C, LP	33,864,549	0
Strategic LP	248,559,107	43,600,000
TPG RE Finance Trust	92,619,457	5,659,260
TPG RE Fund II	7,618,115	40,255,670
* <b>TSP Spartan C-I LLC</b>	7,920,000	0
TSP Value and Income Fund LP	28,483,191	24,800,000
Trophy Property Development LP	45,089,509	7,408,100
True North High Yield Investment Fund II	27,229,203	5,000,000
True North Real Estate Fund III	14,485,052	37,253,930
Venture Center, LLC	43,035,397	0
Western National Realty Fund II, LP	24,958,283	0
	<u>\$ 5,551,438,895</u>	<u>\$ 1,101,854,127</u>
Short-Term Investments and Other	83,621,873	0
<b>Total Real Estate Investments</b>	<b><u>\$ 5,635,060,768</u></b>	<b><u>\$ 1,101,854,127</u></b>

### INFRASTRUCTURE

ArcLight Energy Partners Fund VI, LP	\$ 16,365,608	\$ 32,613,908
ASF VI Infrastructure B LP	7,726,323	22,094,113
ASF Como Co-Investment LP	35,057,945	15,877,402
Balfour Beatty Infrastructure Partners, LP	30,648,815	19,314,545
Blackstone Energy Partners, LP	51,638,182	5,047,629
Blackstone Energy Partners II, LP	0	85,000,000
Brookfield Infrastructure Fund II-B, LP	38,925,422	13,251,816
Customized Infrastructure Strategies, LP	78,358,892	8,433,467
Dalmore Capital Fund	68,480,000	0
First Reserve Energy Infrastructure Fund II, LP	9,983,187	64,000,000
GCM Grosvenor Infrastructure Investment Program, LP	51,451,819	0
GCM Grosvenor Customized Infrastructure Strategies II, LP	9,815,804	45,867,578
GSO Energy Select Opportunities Fund LP	3,836,167	46,093,622
JP Morgan AIRRO India Sidecar Fund US, LLC	66,172,787	5,033,815
JP Morgan AIRRO Fund II US, LLC	11,833,662	83,384,246
KKR Eagle CoInvest L.P.	18,852,932	8,575,281
KKR Global Infrastructure Investors, LP	69,499,312	14,582,543
StonePeak Infrastructure Fund LP	55,751,335	16,573,057
	<u>\$ 624,398,194</u>	<u>\$ 485,743,022</u>
Short-Term Investments and Other	16,763,939	0
<b>Total Infrastructure Investments</b>	<b><u>\$ 641,162,133</u></b>	<b><u>\$ 485,743,022</u></b>
<b>TOTAL INVESTMENTS</b>	<b><u>\$ 6,276,222,900</u></b>	<b><u>\$ 1,587,597,149</u></b>

\* New or additional commitment made during the quarter reported



State of Michigan Retirement Systems

# BASKET CLAUSE REVIEW

Investment Advisory Committee Meeting

June 16, 2016



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





**SMRS**

## **Basket Clause Investments**

**3/31/16**

<u>Asset Class</u>	<u>Value</u>
Total Absolute Return	\$4,001,644,371
Total Real Return and Opportunistic	908,443,412
Total International Equity	507,994,474
Total Long-Term Fixed Income	<u>64,453,372</u>
<b>Total Basket Clause Investments</b>	<b><u>\$5,482,535,630</u></b>

The basket clause investments at March 31, 2016, were \$5.5 billion or 9.2% of the total portfolio value of \$59.9 billion.

The Public Employee Retirement System Investment Act, 1965 PA 314, MCL 38.1132 *et seq*, authorizes the State Treasurer to invest up to 30% of the system's assets in investments "not otherwise qualified under the act." MCL 38.1140d(1). Commonly referred to as Section 20d (after the authorizing section of PA 314) or Basket Clause investments, this provision gives the State Treasurer the flexibility to take advantage of market opportunities not specifically authorized in PA 314 while conserving protections against imprudent investment.



# **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.**

