



# Michigan Department of Treasury Bureau of Investments



**Gregory J. Parker**

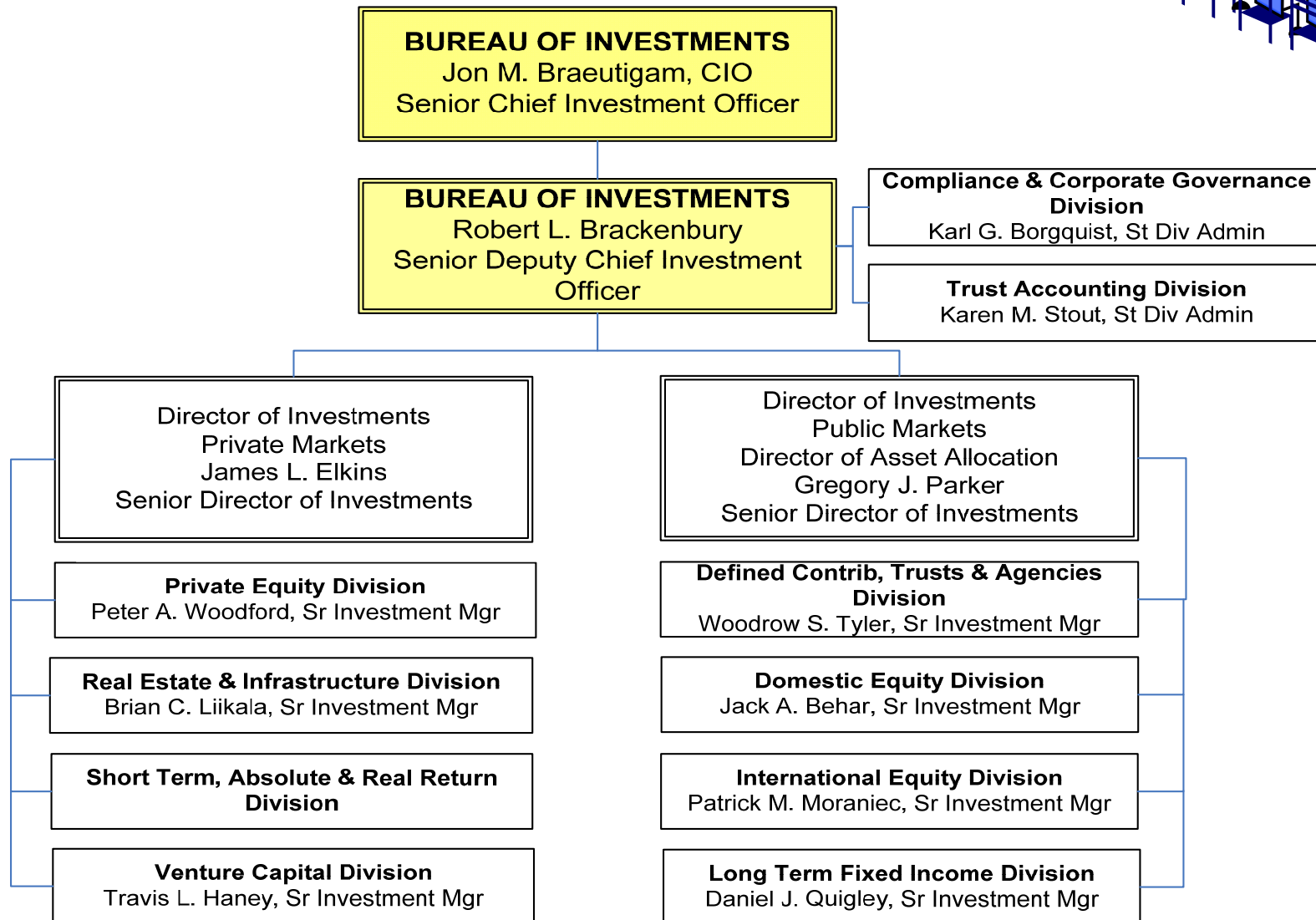
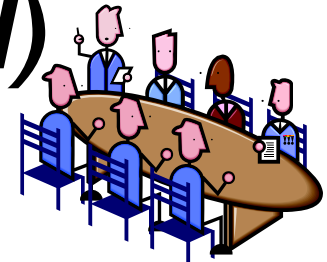
Director of Investments – Public Markets

Director of Asset Allocation

March 2, 2017



# Bureau of Investments (BOI) As of January 30, 2017





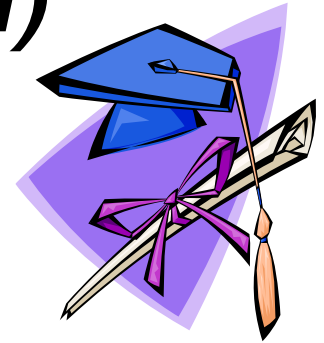
## ***Executive Summary***

- Funding ratios of both plans are improving.
- The plans substantially beat peers in longer time periods. Ranking near the top nationally.
- The market value of the State Employees' and Judges' plans is different than the actuarial value. If the market value of plan assets does not decline, then the actuarial value will trend up in future years.



# ***Bureau of Investments (BOI)***

## ***As of February 2017***



- 74 BOI Employees
- 47 Investment Professionals
- 33 Individuals with a Masters Degree or higher
- 15 CFA Charter holders
- 13 Other professional designations
- Total of \$82.4 billion assets under management
- The large investment pool is an advantage for the plans



# ***Funded Ratio State Employees***

<b>Year</b>	<b>Market Value of Assets</b>	<b>Actuarial Value of Assets</b>	<b>Actuarial Accrued Liability</b>	<b>Funded Ratio Based on Actuarial Value</b>
<b>2015</b>	<b>\$10,732</b>	<b>\$10,417</b>	<b>\$16,237</b>	<b>64.2%</b>
<b>2014*</b>	<b>\$10,975</b>	<b>\$9,962</b>	<b>\$16,173</b>	<b>61.6%</b>
<b>2013</b>	<b>\$9,923</b>	<b>\$9,438</b>	<b>\$15,648</b>	<b>60.3%</b>
<b>2012</b>	<b>\$9,272</b>	<b>\$9,447</b>	<b>\$15,654</b>	<b>60.3%</b>
<b>2011</b>	<b>\$8,655</b>	<b>\$10,212</b>	<b>\$15,597</b>	<b>65.5%</b>
<b>2010</b>	<b>\$8,940</b>	<b>\$10,782</b>	<b>\$14,860</b>	<b>72.6%</b>
<b>2009</b>	<b>\$8,583</b>	<b>\$11,107</b>	<b>\$14,234</b>	<b>78.0%</b>
<b>1983</b>	<b>\$1,842</b>	<b>\$1,752</b>	<b>\$2,369</b>	<b>74.0%</b>
<b><i>MERS Estimated Market Value Funded Ratio</i></b>				
<b>12/31/2016</b>	<b>\$12,659</b>	<b>- - -</b>	<b>\$16,237</b>	<b>78.0%</b>

(\$ in Millions)

\*Revised actuarial assumptions and/or methods.

Source: Pension Plans Component Unit Financial Reports and Actuarial Valuations, years ending in September



# *Funded Ratio Judges*

<b>Year</b>	<b>Market Value of Assets</b>	<b>Actuarial Value of Assets</b>	<b>Actuarial Accrued Liability</b>	<b>Funded Ratio Based on Actuarial Value</b>
<b>2015</b>	<b>\$257</b>	<b>\$249</b>	<b>\$257</b>	<b>96.9%</b>
<b>2014*</b>	<b>\$271</b>	<b>\$246</b>	<b>\$257</b>	<b>95.8%</b>
<b>2013</b>	<b>\$253</b>	<b>\$240</b>	<b>\$252</b>	<b>95.1%</b>
<b>2012</b>	<b>\$240</b>	<b>\$246</b>	<b>\$250</b>	<b>98.5%</b>
<b>2011</b>	<b>\$224</b>	<b>\$267</b>	<b>\$252</b>	<b>106.0%</b>
<b>2010</b>	<b>\$233</b>	<b>\$284</b>	<b>\$252</b>	<b>112.7%</b>
<b>2009</b>	<b>\$230</b>	<b>\$296</b>	<b>\$245</b>	<b>120.8%</b>
<b>1983</b>	<b>\$57</b>	<b>\$57</b>	<b>\$81</b>	<b>70.4%</b>
<b><i>MJRS Estimated Market Value Funded Ratio</i></b>				
<b>12/31/2016</b>	<b>\$255</b>	<b>- - -</b>	<b>\$257</b>	<b>99.2%</b>

(\$ in Millions)

\*Revised actuarial assumptions and/or methods.



# ***Contributions and Distributions***

## ***FY 2016***

### ***State Employees***

### ***Judges***

#### **Contributions**

Members	\$85.3
Employer	<u>1,403.0</u>

**Total Contributions** \$1,488.3

Pension Benefit Distributions 1,289.6

**Net** **\$198.7**

- Equal to (per quarter on average) \$49.7
- Or about 1.7% of total market value of fund

#### **Contributions**

Members	\$1.2
Employer	<u>2.3</u>

**Total Contributions** \$3.5

Pension Benefit Distributions 23.3

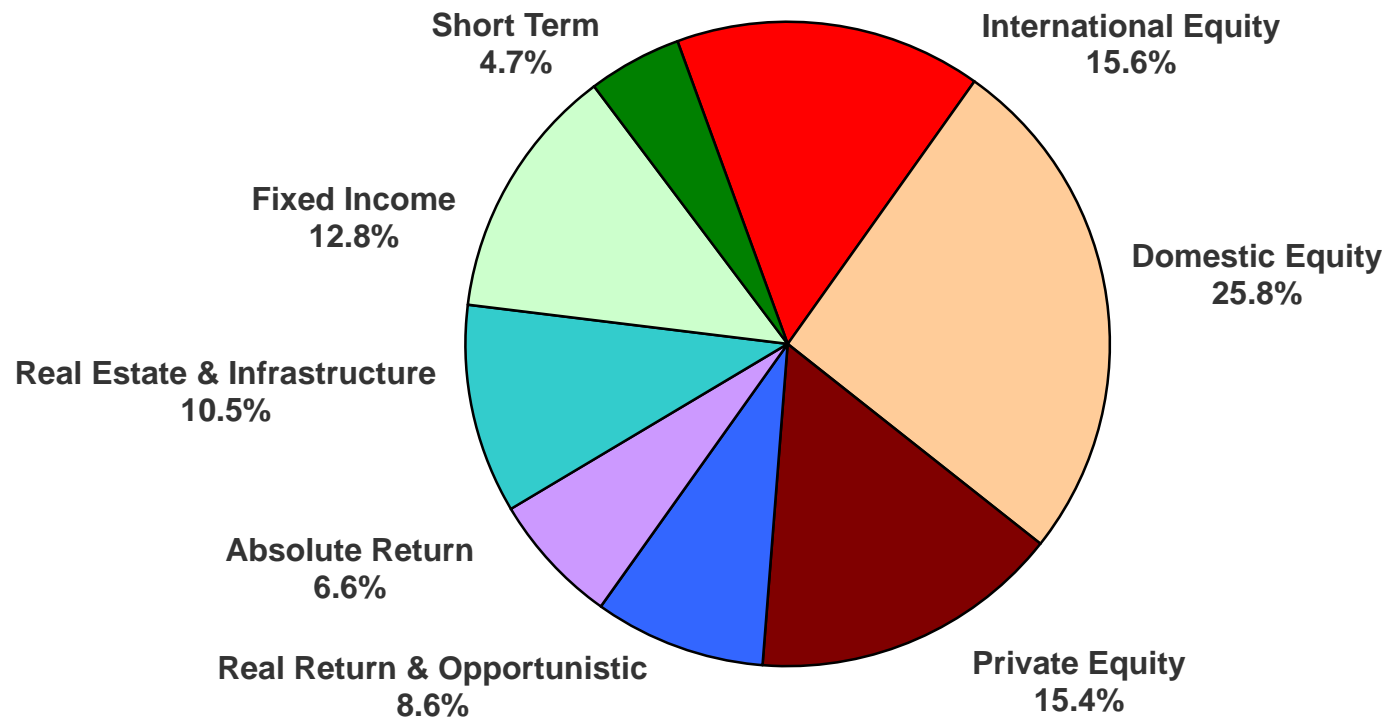
**Net** **(\$19.8)**

- Equal to (per quarter on average) (\$5.0)
- Or about 7.8% of total market value of fund



# ***Asset Allocation***

## ***As of December 31, 2016***



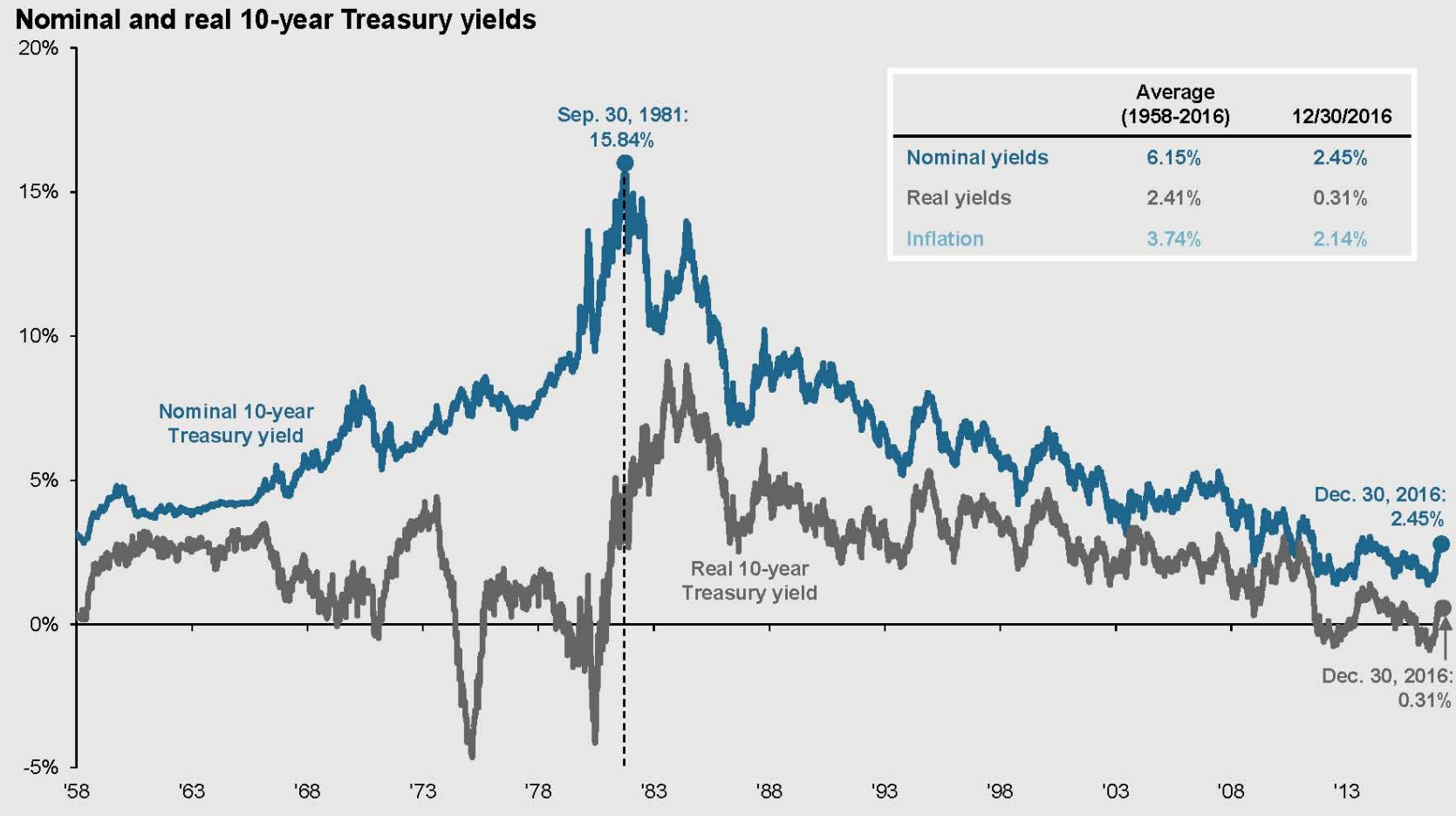
Diversification is essential to protect the funds. However, still reliant on equity markets.





# Interest Rates and Inflation

Fixed income



Source: BLS, Federal Reserve, J.P. Morgan Asset Management.  
 Real 10-year Treasury yields are calculated as the daily Treasury yield less year-over-year core CPI inflation for that month except for December 2016, where real yields are calculated by subtracting out November 2016 year-over-year core inflation.  
 Guide to the Markets – U.S. Data are as of December 31, 2016.



# S&P 500 – Last 10 Years





# Time-Weighted Rates of Return

Public Funds (DB) > \$10 Billion

As of December 31, 2016

## State Employees

Asset Class w/Benchmark	CY 2016									
	One Year*		Three Years*		Five Years*		Seven Years*		Ten Years*	
	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank
<b>Total Plan</b>	<b>7.5%</b>	<b>74</b>	<b>7.1%</b>	<b>4</b>	<b>10.0%</b>	<b>18</b>	<b>9.4%</b>	<b>11</b>	<b>5.8%</b>	<b>18</b>
Median - Greater than \$10 Billion	7.9%		5.3%		8.9%		8.4%		5.3%	

## Judges

Asset Class w/Benchmark	CY 2016									
	One Year*		Three Years*		Five Years*		Seven Years*		Ten Years*	
	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank
<b>Total Plan</b>	<b>7.4%</b>	<b>76</b>	<b>7.0%</b>	<b>5</b>	<b>9.8%</b>	<b>22</b>	<b>9.1%</b>	<b>21</b>	<b>5.6%</b>	<b>30</b>
Median - Greater than \$10 Billion	7.9%		5.3%		8.9%		8.4%		5.3%	

\*Annualized Returns

Source: State Street Investment Analytics



# ***Time-Weighted Rates of Return***

*Individual asset classes doing very well on a relative basis*

*State Employees*

<b>Asset Class w/Benchmark</b>	<b>CY 2016</b>	
	<b>Three Years</b>	<b>One Year</b>
	<b>Rate</b>	<b>Rate</b>
<b>Total Plan*</b>	<b>7.1%</b>	<b>7.5%</b>
Median*	5.3%	7.9%
<b>Domestic Equities</b>	<b>8.2%</b>	<b>11.5%</b>
S&P 1500 Index	8.9%	13.0%
<b>International Equities</b>	<b>0.0%</b>	<b>4.2%</b>
MSCI ACWI Ex US	-1.7%	4.5%
<b>Bonds</b>	<b>4.3%</b>	<b>5.7%</b>
Barclays Aggregate	3.0%	2.7%

\*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.



# *Time-Weighted Rates of Return*

## *State Employees*

Asset Class w/Benchmark	CY 2016	
	Three Years Rate	One Year Rate
<b>Private Equity</b>	<b>12.5%</b>	<b>9.1%</b>
Alternative Blended Benchmark	14.3%	18.8%
<b>Real Estate &amp; Infrastructure</b>	<b>13.1%</b>	<b>10.3%</b>
NCREIF Open Fund Index Net	11.0%	7.8%
<b>Absolute Return</b>	<b>2.2%</b>	<b>-0.2%</b>
HFRI FOF Cons 1 month lagged	1.8%	0.6%
<b>Real Return &amp; Opportunistic</b>	<b>12.2%</b>	<b>6.1%</b>
Benchmark	7.1%	7.6%
<b>Cash Equivalents</b>	<b>0.5%</b>	<b>0.7%</b>
30-Day T-Bill	0.1%	0.2%

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# Time-Weighted Rates of Return

*Individual asset classes doing very well on a relative basis*

*Judges*

Asset Class w/Benchmark	CY 2016	
	Three Years	One Year
	Rate	Rate
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# Time-Weighted Rates of Return

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## ***U.S. Economy***

- Forecasted for modest higher growth.
- Housing continues to do well.
- Auto sales are doing well.
- Energy:
  - less dependence on foreign sources;
  - hurting commodity countries much more than the U.S.
- Consumer debt service is low.
- Labor market is still improving.





## ***Still Needed***

- Need to address U.S., states, and municipalities long-term liabilities.
- World is uncertain (Iran, North Korea, Syria, etc.).
- Emerging market economies are experiencing a slowdown in their economies.



## ***Conclusion***

- We have experienced a ‘Bull Market’ since 2009. Prior to 2016, the fund was positioned tactically conservative versus its target allocation.
- The longer-term returns are higher than peer median.
- Going forward, with the 10-Year Treasury near 2.5%, achieving 8% is challenging for a diversified portfolio.
- The U.S. economy is growing at a decent rate. Most economists predict moderate economic growth in 2017.