Michigan Department of Treasury
Bureau of Investments

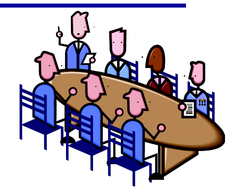
Gregory J. Parker
Director of Investments – Public Markets
May 16, 2019

Executive Summary

- Long term market returns have been robust and in the next ten years most industry experts anticipate lower returns.
- Therefore, most plans are lowering (or have lowered already) their plans actuarial assumed rate of return.
- The plans substantially beat peers in all time periods.

Bureau of Investments (BOI)

As of January 1, 2019



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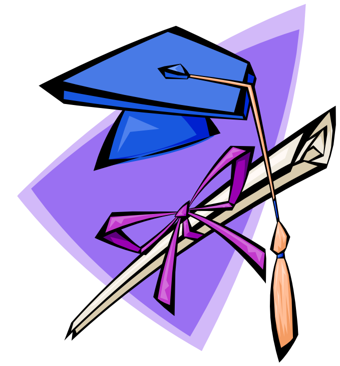
Bureau of Investments (BOI)

As of February 2019



- 73 BOI Employees.
- 45 Investment Professionals.
- 43 Individuals with a Masters Degree or higher.
- 16 CFA Charter holders.
- 16 Other professional designations.
- Total of $94.1 billion assets under management (as of 2/28/19).
- The large investment pool is an advantage for the MSPRS, increase diversification while keeping costs low.

MSPRS Funded Ratio

$1.5 Billion as of 2/28/19

Year	Market Value of Assets	Actuarial Value of Assets	Actuarial Accrued Liability	Funded Ratio Based on Actuarial Value
2017	$1,391	$1,398	$2,147	65.1%
2016	$1,278	$1,273	$2,008	63.4%
2015	$1,233	$1,197	$1,851	64.7%
2014*	$1,250	$1,133	$1,800	63.0%
2013	$1,127	$1,069	$1,724	62.0%
2012	$1,052	$1,069	$1,671	64.0%
2011	$967	$1,138	$1,628	69.9%
1983	$178	$178	$272	65.4%
MSPRS Estimated Market Value Funded Ratio				
2/28/2019	$1,466	- - -	$2,147	68.3%

($ in Millions) Pension Fund Only

*Revised actuarial assumptions and/or methods.

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

MSPRS

Contributions and Distributions

FY 2018

Contributions	
Members	$ 3.5
Employer	141.7
Total Contributions	$ 145.2
Less:	
Pension Benefit Distributions	137.4
Net	**$ 7.8**

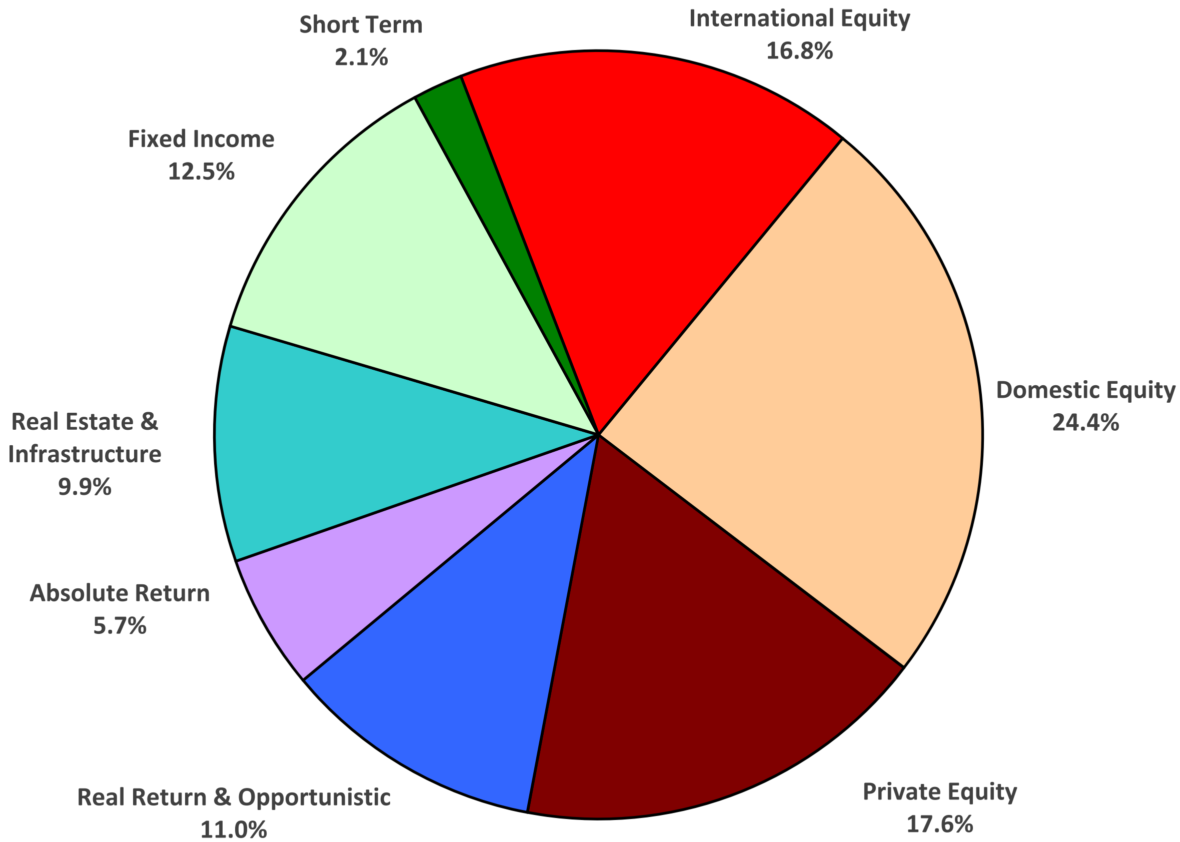
- Equal to (per quarter on average) $ 2.0
- Or about 0.6% of total market value of fund

Figures are in millions

Includes Pension Plan and OPEB

MSPRS Asset Allocation

As of February 28, 2019

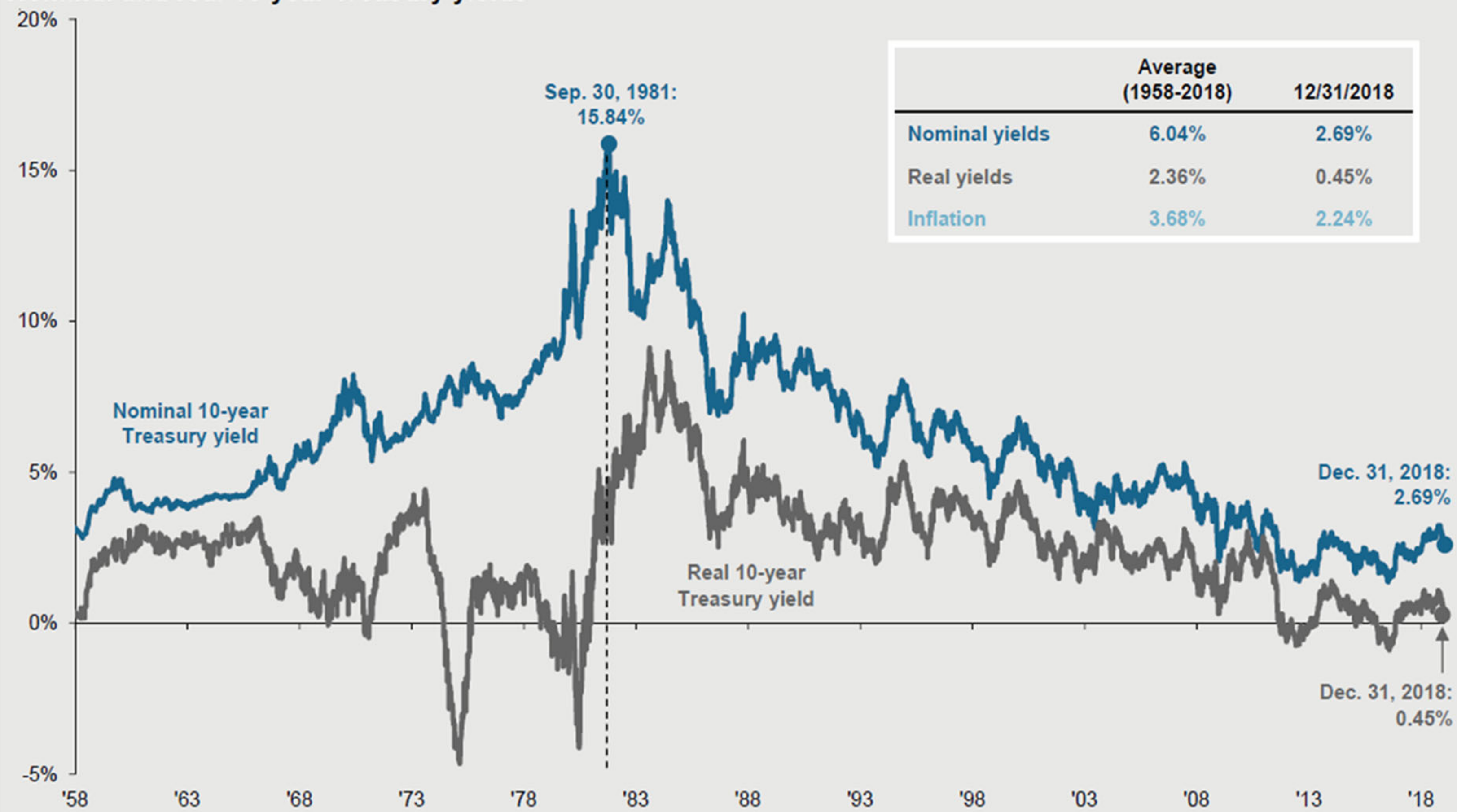


Diversification is essential to protect the funds. However, still reliant on equity markets.

Interest Rates and Inflation

Fixed income

Nominal and real 10-year Treasury yields



Source: BLS, FactSet, 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 2018, where real yields are calculated by subtracting out November 2018 year-over-year core inflation.
Guide to the Markets – U.S. Data are as of December 31, 2018.

J.P.Morgan
Asset Management

S&P 500 – Last 10 Years

MSPRS FUND

Time-Weighted Rate of Return

Public Funds (DB) > $10 Billion

As of December 31, 2018

Asset Class w/Benchmark	One Year*		Three Years*		Five Years*		Seven Years*		Ten Years*	
	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank
Total Plan	**2.7%**	**5**	**8.6%**	**12**	**8.0%**	**5**	**9.7%**	**5**	**9.5%**	**14**
Median - Greater than $10 Billion	-2.1%		6.7%		5.6%		8.2%		8.5%	

*Annualized Returns

Source: State Street Investment Analytics

U.S. Economy

- Forecasted for decelerating growth globally.
- Housing is moderating.
- Auto sales are moderating.
- Tax cut provided fiscal stimulus, but impact moderating.
- Labor market has tightened significantly and may increase inflation, but this hasn't yet been the case.

Concerns

- Decelerating global economy.
- Need to address U.S. long-term liabilities.
- World is uncertain (Iran, North Korea, Russia, etc.).
- Federal trade policies – China, Europe, NAFTA.
- Equity market volatility has increased (from historically low levels to normal).

Conclusion

- We have experienced a U.S. 'Bull Market' since 2009, but for how much longer?
- The plan substantially beat peers in all time periods.
- The U.S. economy is doing well.