



Michigan Department of Treasury Bureau of Investments



Robert L. Brackenbury, Deputy CIO
March 18, 2021



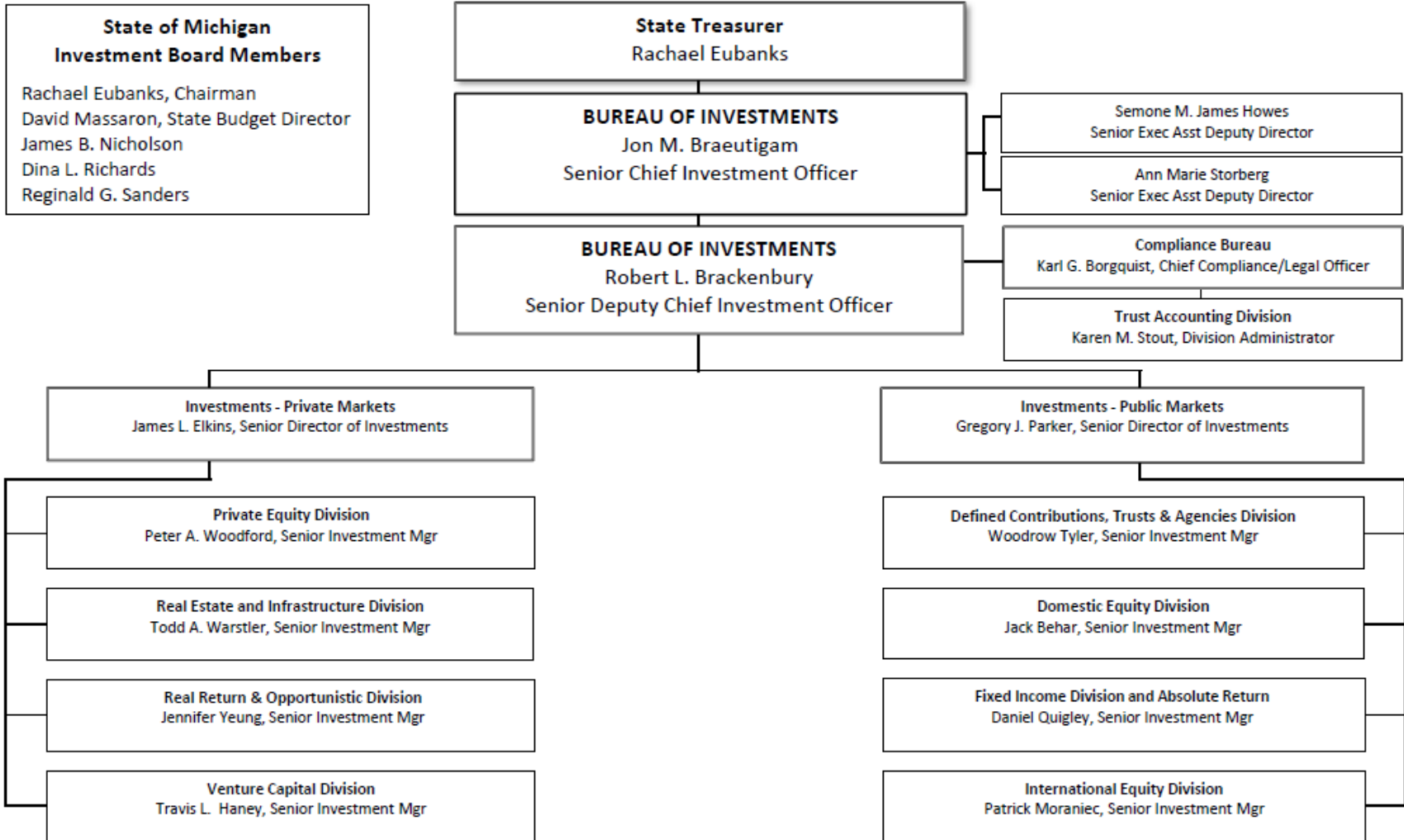
Executive Summary

- Long term market returns have been robust but 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.
- MPERS returns substantially beat peer returns over longer time periods.



Bureau of Investments

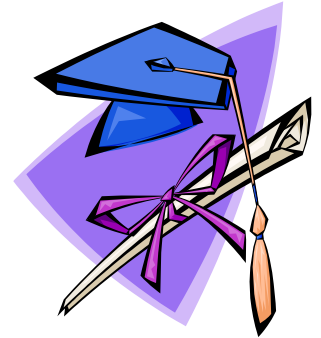
As of December 31, 2020





Bureau of Investments

As of December 31, 2020



- 75 BOI Employees.
- 49 Investment Professionals.
- 35 Individuals with a Masters Degree or higher.
- 16 C.F.A. Charter holders.
- 12 Other professional designations.
- Total of \$117.9 billion assets under management.
- The large investment pool is an advantage for the MPSERS.



MPERS Funded Ratio

\$56.1 Billion as of December 31, 2020

FY Ending September	Market Value of Assets	Actuarial Value of Assets	Actuarial Accrued Liability	Funded Ratio Based on Actuarial Value
2019	\$50,857	\$51,422	\$85,202	60.4%
2018*	\$50,343	\$50,630	\$83,375	60.7%
2017*	\$47,012	\$47,255	\$76,693	61.6%
2016	\$43,461	\$43,204	\$72,310	59.7%
2015	\$42,382	\$41,006	\$67,728	60.5%
2014*	\$43,773	\$39,626	\$66,105	59.9%
2013	\$40,016	\$38,044	\$63,840	59.6%
1983	\$6,285	\$6,035	\$8,434	71.6%

(\$ in Millions)

*Revised actuarial assumptions and/or methods.

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

Pension Plan Only



MPSERS

Contributions and Distributions

FY 2020

Contributions

Members	\$606.4
Employer	3,517.3

Total Contributions

\$4,123.7

Pension Benefit Distributions

5,539.8

Net

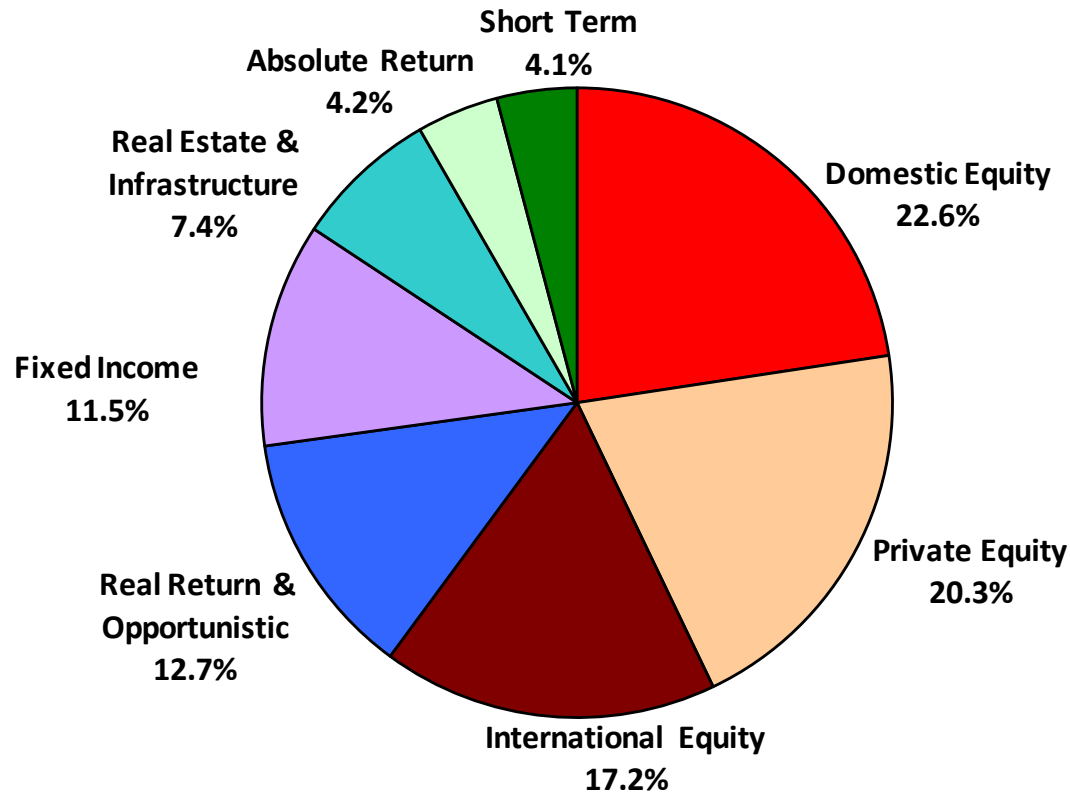
(\$1,416.1)

- Equal to (per quarter on average) (\$354.0)
- Or about 2.8% of total market value of fund



MPERS Asset Allocation

As of December 31, 2020



Diversification is essential to protect the funds. However, still reliant on equity markets to generate the actuarial assumed rate of return.

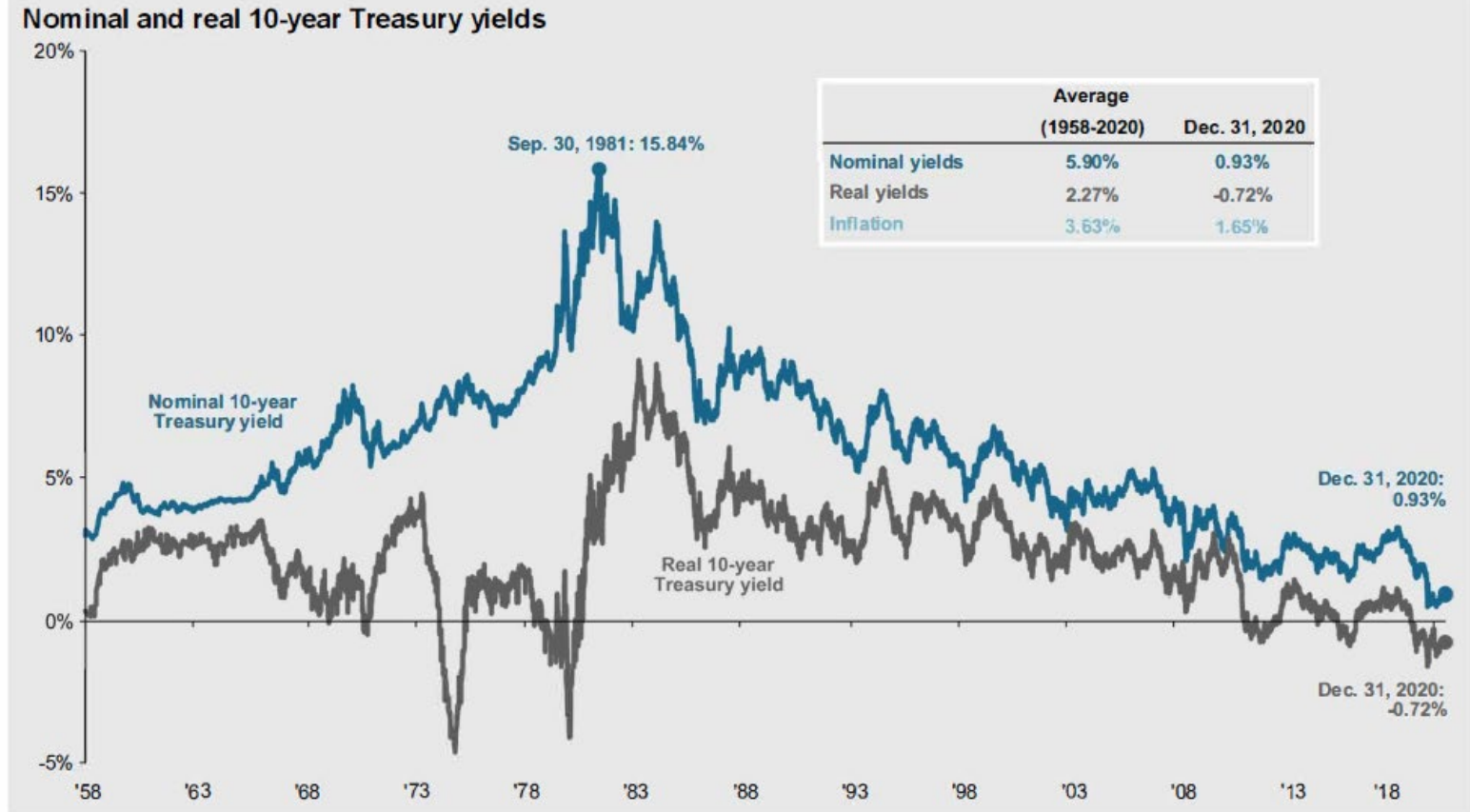


Interest Rates and Inflation

Interest rates and inflation

GTM – U.S.

Fixed income



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 2020 where real yields are calculated by subtracting out November 2020 year-over-year core inflation.
 Guide to the Markets – U.S. Data are as of December 31, 2020.



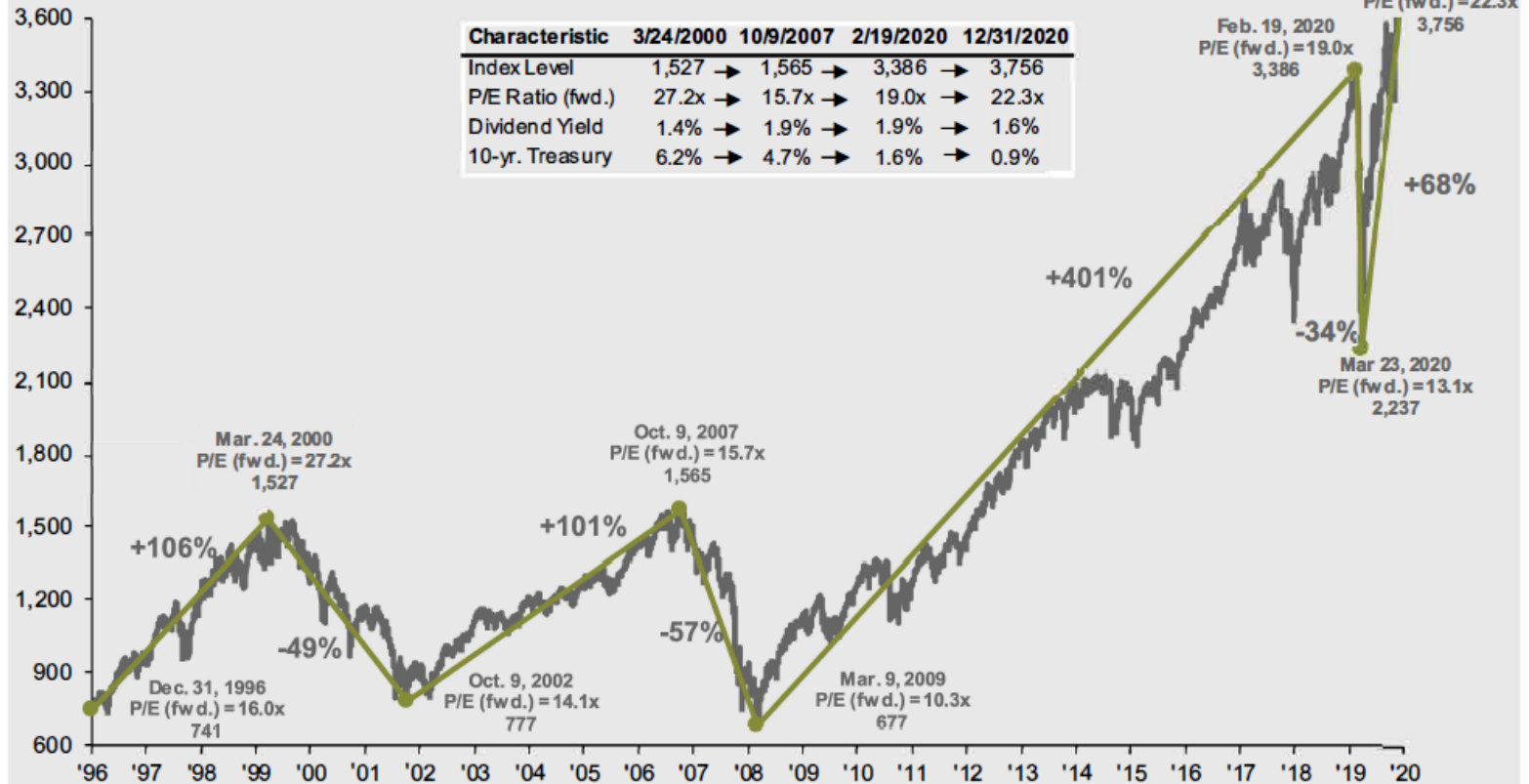
S&P 500 – Index at Inflection Points

S&P 500 Index at inflection points

GTM - U.S.

Equities

S&P 500 Price Index



Source: Compustat, FactSet, Federal Reserve, Standard & Poor's, J.P. Morgan Asset Management.
 Dividend yield is calculated as consensus estimates of dividends for the next 12 months, divided by most recent price, as provided by Compustat.
 Forward price-to-earnings ratio is a bottom-up calculation based on the most recent S&P 500 Index price, divided by consensus estimates for earnings in the next 12 months (NTM), and is provided by FactSet Market Aggregates. Returns are cumulative and based on S&P 500 Index price movement only, and do not include the reinvestment of dividends. Past performance is not indicative of future returns.
 Guide to the Markets – U.S. Data are as of December 31, 2020.



MPERS FUND

Time-Weighted Rate of Return

As of December 31, 2020

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	11.2%	63	9.7%	15	10.5%	22	9.5%	7	9.8%	11
Median - Greater than \$10 Billion**	11.9%		8.3%		9.6%		8.0%		8.6%	

- Historically the investment results have compared very favorably to other large public pension plans (Larger than \$10 billion). Over the past ten years, our investment returns added approximately \$13 billion in value compared to what a peer median-performing pension fund would have earned.

* Annualized Returns

** 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.



MPSERS FUND

Time-Weighted Rates of Return

As of December 31, 2021

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	11.2%	63	9.7%	15	10.5%	22	9.5%	7	9.8%	11
Median - Greater than \$10 Billion**	11.9%		8.3%		9.6%		8.0%		8.6%	
Domestic Equities	17.0%		14.0%		15.1%		12.6%		13.6%	
S&P 1500 Index	17.9%		13.6%		15.0%		12.6%		13.7%	
International Equities	13.1%		6.2%		9.9%		6.4%		6.4%	
International Blended Benchmark***	10.7%		4.9%		8.9%		4.9%		5.1%	
Bonds	5.2%		5.3%		5.4%		4.9%		4.6%	
Barclays U.S. Aggregate	7.5%		5.3%		4.4%		4.1%		3.8%	
Private Equity	16.9%		14.5%		14.0%		14.1%		14.6%	
Alternative Blended Benchmark****	18.6%		15.6%		17.5%		16.0%		17.1%	
Real Estate & Infrastructure	-6.8%		3.8%		6.0%		8.4%		9.2%	
NCREIF Open Fund Index Net	0.3%		4.0%		5.3%		7.3%		8.9%	
Absolute and Real Return	3.7%		4.2%		4.3%		4.0%		4.6%	
HFRI FOF Cons 1 month lagged	4.8%		3.2%		2.9%		2.8%		2.8%	
Real Return / Opportunistic	16.8%		14.7%		12.4%		13.2%		11.1%	
Benchmark	6.2%		6.7%		7.1%		7.0%		7.2%	
Cash Equivalents	1.1%		1.9%		1.6%		1.2%		1.0%	
30-Day T-Bill	0.5%		1.5%		1.1%		0.8%		0.6%	

* Annualized Returns

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*** 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

****Inception to present: S&P500 + 300 BP with a 3 month lag



U.S. Economy

- Unprecedented fiscal & monetary stimulus is sustaining the US economy.
- Full economic recovery is more a story of vaccine deployment (reopened economy) than it is of stimulus funding.
- 2021 GDP growth estimates range from 6-9%, but with the tradeoff risk of higher inflation.
- Fed Reserve appears ready to manage inflation, with tolerance until labor market more fully recovers.



Conclusion

- 2020 began with the sharpest recession on record, then experienced the fastest-ever rebound.
- Much of the US economy recovered well in 2020, but unevenly. With expanded access to vaccines and significant additional stimulus anticipated, 2021 should experience significant growth & economic rebounds.
- We will continue to maintain a long-term focus with sufficient liquidity to manage through short-term market changes.