



# Michigan Department of Treasury Bureau of Investments



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**March 16, 2023**



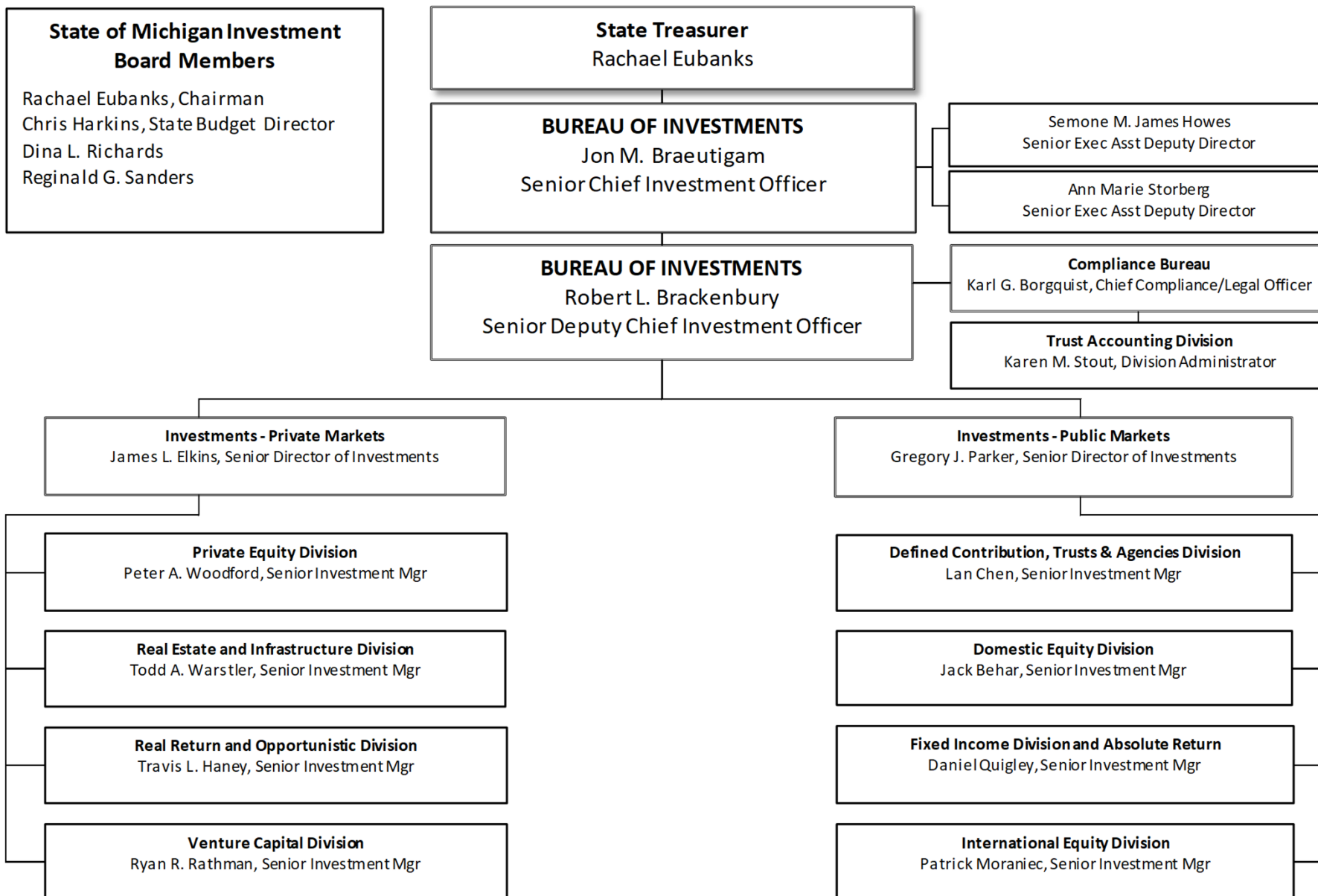
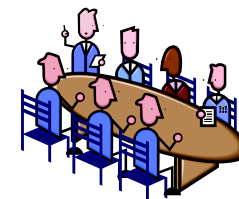
# Executive Summary

- Long term market returns have been robust but in the next ten years many industry experts anticipate lower returns.
- Therefore, most plans are lowering (or have lowered already) their actuarial assumed rate of return.
- MPSERS returns substantially beat peer returns over longer time periods.



# Bureau of Investments

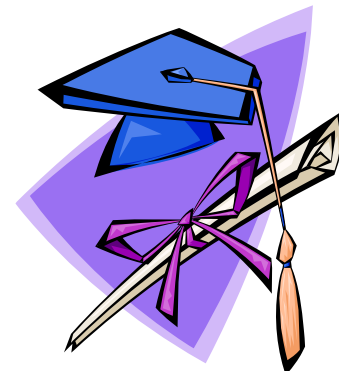
## As of December 31, 2022





# Bureau of Investments

As of December 31, 2022



- 75 BOI Employees.
- 49 Investment Professionals.
- 32 Individuals with a Masters Degree or higher.
- 17 C.F.A. Charter holders.
- 13 Other professional designations.
- Total of \$143.9 billion assets under management.
- The large investment pool is an advantage for the plans.



# MPERS Funded Ratio

## \$60.7Billion as of December 31, 2022

<b>FY Ending September</b>	<b>Market Value of Assets</b>	<b>Actuarial Value of Assets</b>	<b>Actuarial Accrued Liability</b>	<b>Funded Ratio Based on Actuarial</b>
<b>2021*</b>	<b>\$63,332</b>	<b>\$61,480</b>	<b>\$95,903</b>	<b>64.1%</b>
<b>2020</b>	<b>\$51,456</b>	<b>\$52,587</b>	<b>\$86,338</b>	<b>60.9%</b>
<b>2019</b>	<b>\$50,857</b>	<b>\$51,422</b>	<b>\$85,202</b>	<b>60.4%</b>
<b>2018*</b>	<b>\$50,343</b>	<b>\$50,630</b>	<b>\$83,375</b>	<b>60.7%</b>
<b>2017*</b>	<b>\$47,012</b>	<b>\$47,255</b>	<b>\$76,693</b>	<b>61.6%</b>
<b>2016</b>	<b>\$43,461</b>	<b>\$43,204</b>	<b>\$72,310</b>	<b>59.7%</b>
<b>2015</b>	<b>\$42,382</b>	<b>\$41,006</b>	<b>\$67,728</b>	<b>60.5%</b>
<b>1983</b>	<b>\$6,285</b>	<b>\$6,035</b>	<b>\$8,434</b>	<b>71.6%</b>

(\$ 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



# MPERS

## Contributions and Distributions

### FY 2022

#### Contributions

Members	\$640.0
Employer	4,614.8

**Total Contributions** \$5,254.8

Pension Benefit Distributions 6,067.5

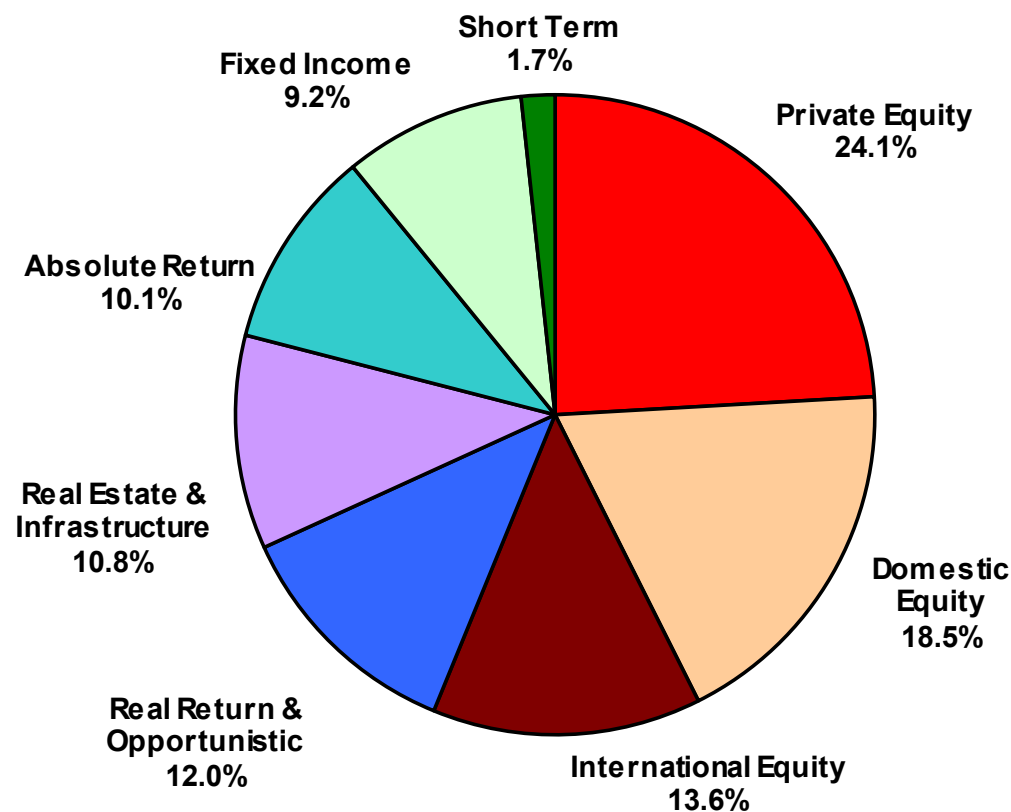
**Net** **(\$812.7)**

- Equal to (per quarter on average) (\$203.2)
- Or about -1.2% of total market value of fund



# MPERS Asset Allocation

## As of December 31, 2022

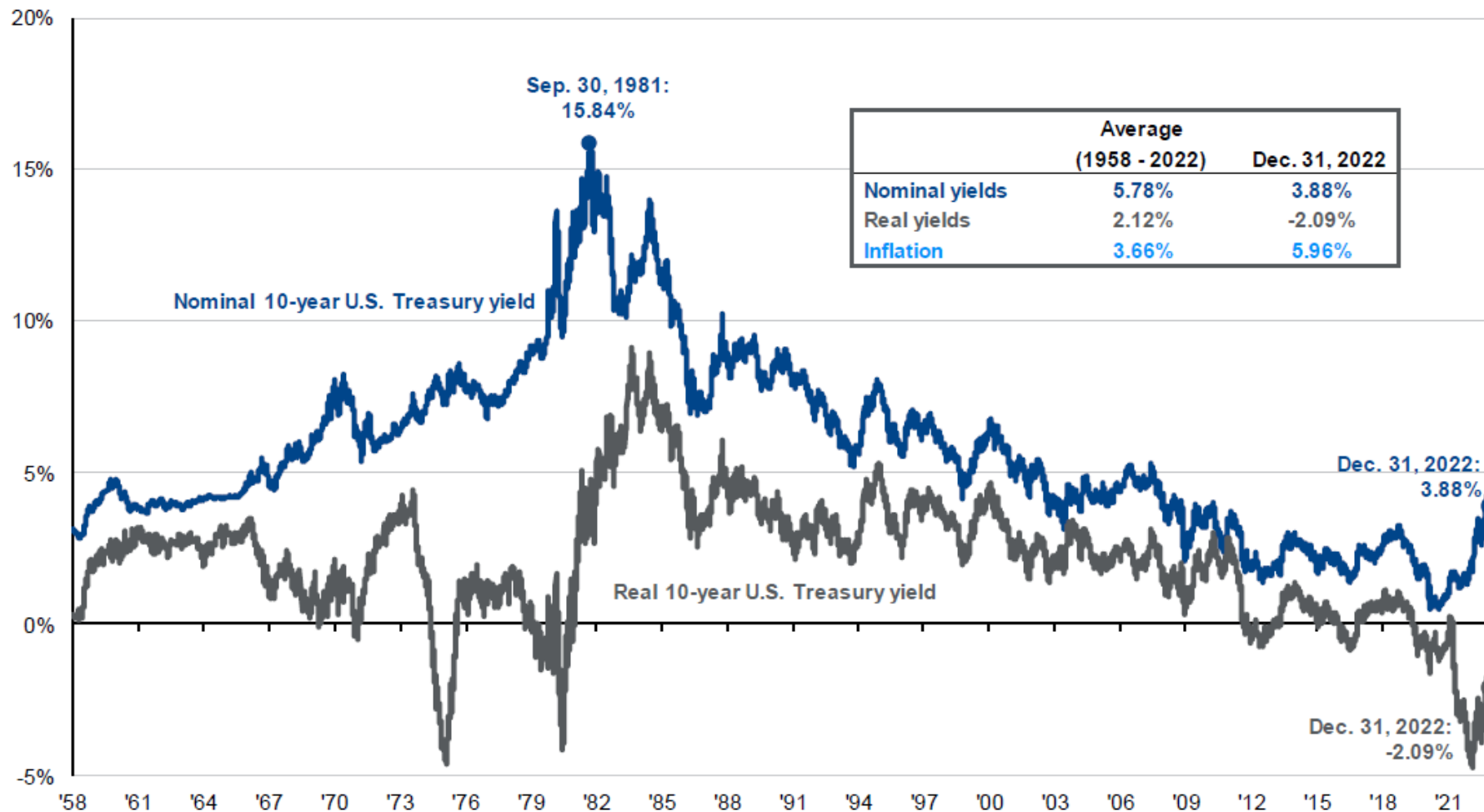


Diversification is essential to protect the funds. However, still reliant on equity markets to generate the actuarial assumed rate of return.



# Interest Rates and Inflation

Nominal and real U.S. 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. For the current month, we use the prior month's core CPI figures until the latest data is available.

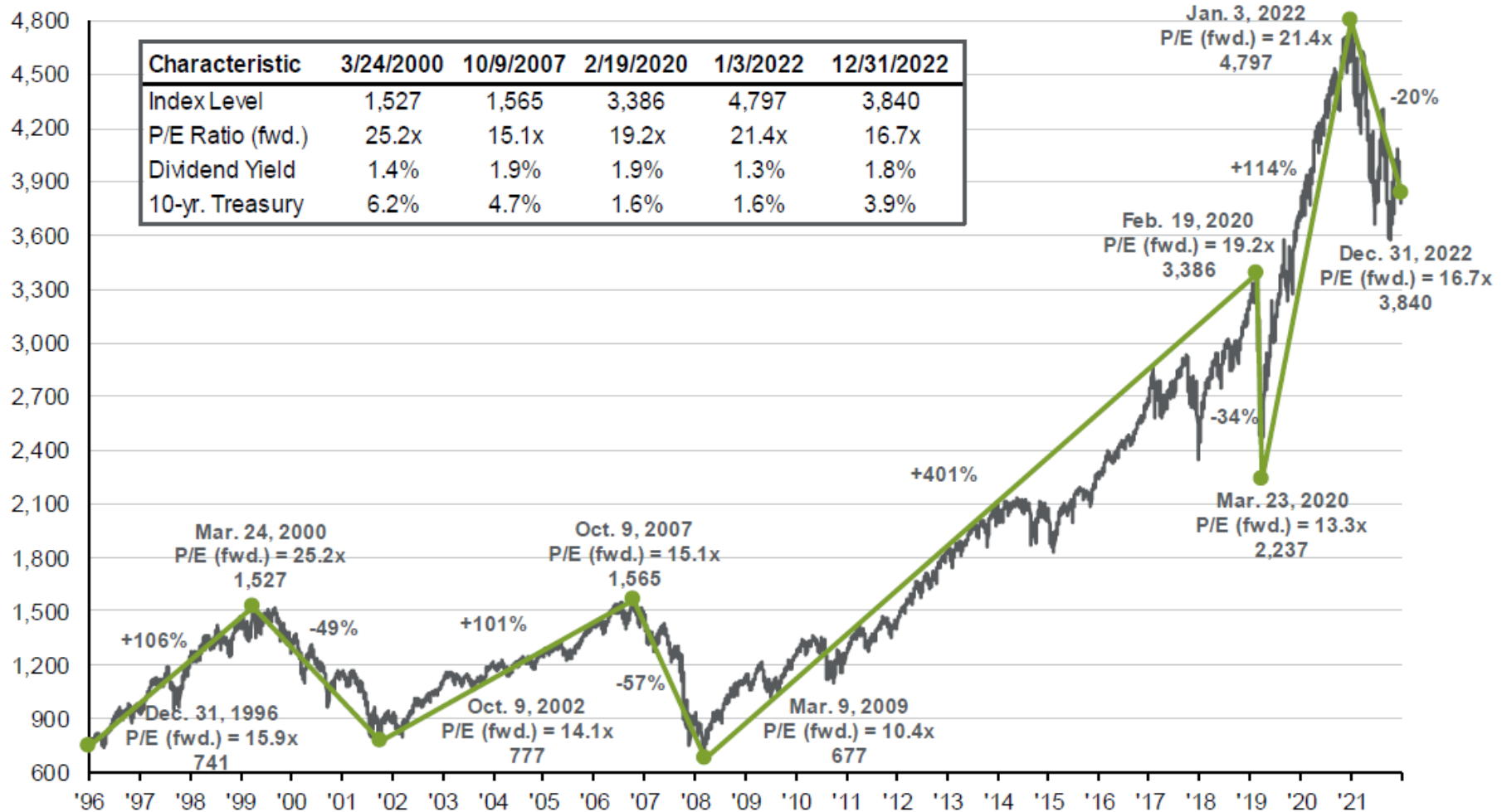
Guide to the Markets – U.S. Data are as of December 31, 2022.





# S&P 500 – Index at Inflection Points

S&P 500 Price Index



Source: Compustat, FactSet, Federal Reserve, Refinitiv Datastream, 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 IBES estimates and FactSet estimates since January 2022. 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, 2022.

J.P.Morgan  
ASSET MANAGEMENT



# MPERS FUND

## Time-Weighted Rate of Return

**As of December 31, 2022**

Asset Class w/Benchmark	One Year*	Three Years*	Five Years*	Seven Years*	Ten Years*
	Rate	Rate	Rate	Rate	Rate
<b>Total Plan</b>	<b>-6.3%</b>	<b>8.4%</b>	<b>8.6%</b>	<b>9.5%</b>	<b>9.6%</b>
Median - Greater than \$10 Billion**	-7.8%	6.4%	6.6%	8.0%	7.9%

\* Annualized Returns

\*\* Comparison universe is the State Street Universe comprised of Public Funds greater than \$10 Billion on the total plan level

- 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 \$18 billion in value compared to what a peer median-performing pension fund would have earned.



# MPSERS FUND

## Time-Weighted Rates of Return

### As of December 31, 2022

Asset Class w/Benchmark	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>-6.3%</b>	<b>21</b>	<b>8.4%</b>	<b>11</b>	<b>8.6%</b>	<b>12</b>	<b>9.5%</b>	<b>12</b>	<b>9.6%</b>	<b>12</b>
Median - Greater than \$10 Billion**	-7.8%		6.4%		6.6%		8.0%		7.9%	
<b>Domestic Equities</b>	<b>-22.5%</b>		<b>4.4%</b>		<b>7.6%</b>		<b>10.2%</b>		<b>11.6%</b>	
S&P 1500 Index	-17.8%		7.6%		9.2%		11.3%		12.4%	
<b>International Equities</b>	<b>-19.2%</b>		<b>0.0%</b>		<b>1.1%</b>		<b>5.1%</b>		<b>4.6%</b>	
International Equities Median**	-15.8%		1.0%		1.8%		5.2%		4.8%	
<b>Fixed Income</b>	<b>-10.9%</b>		<b>-1.4%</b>		<b>1.2%</b>		<b>2.5%</b>		<b>2.4%</b>	
Bloomberg US Agg Index	-13.0%		-2.7%		0.0%		0.9%		1.1%	
<b>Private Equity</b>	<b>-2.4%</b>		<b>20.1%</b>		<b>17.4%</b>		<b>16.2%</b>		<b>15.8%</b>	
Private Equity and Venture Capital BM***	-12.9%		11.4%		12.5%		14.7%		15.0%	
<b>Real Estate &amp; Infrastructure</b>	<b>19.6%</b>		<b>10.6%</b>		<b>10.2%</b>		<b>10.0%</b>		<b>11.0%</b>	
NCREIF Open Fund Index Net	6.6%		9.0%		7.7%		7.6%		9.1%	
<b>Absolute and Real Return</b>	<b>2.9%</b>		<b>7.4%</b>		<b>6.2%</b>		<b>5.7%</b>		<b>5.8%</b>	
HFRI FOF Cons 1 month lagged	0.0%		4.8%		3.8%		3.4%		3.7%	
<b>Real Return / Opportunistic</b>	<b>14.7%</b>		<b>15.6%</b>		<b>14.8%</b>		<b>13.1%</b>		<b>13.1%</b>	
50% CPI +4% and 50% actuarial rate 6%	8.3%		7.8%		7.5%		7.5%		7.4%	
<b>Cash Equivalents</b>	<b>1.6%</b>		<b>1.0%</b>		<b>1.5%</b>		<b>1.4%</b>		<b>1.1%</b>	
30-Day T-Bill	1.5%		0.7%		1.2%		1.0%		0.7%	

\* 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.

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



# U.S. Economy

- Unprecedented fiscal & monetary stimulus is making its way through the US economy.
- 2022 GDP growth estimates is around 0.6%, and with higher-than-normal inflation.
- Fed Reserve appears ready to manage inflation.



# Conclusion

- 2022 began with the highest inflation rates since 1982 and with Fed Funds interest rates still hovering near 0%.
- Most of the year saw rising interest rates and peaking inflation.
- We will continue to maintain a long-term focus with sufficient liquidity to manage through short-term market changes.