MEKETA
INVESTMENT GROUP

Maryland State Retirement and Pension System

Performance Report
September 30, 2022

Fund Evaluation Report

Agenda

Executive Summary

Market Value & Performance

→ At the end of the third quarter, the System was valued at $61,350.9 million, a decrease of $4,164.7 million from the end of the second quarter.

- The decrease was the result of negative investment performance and negative cash outflows that totaled $593.5 million for the quarter.

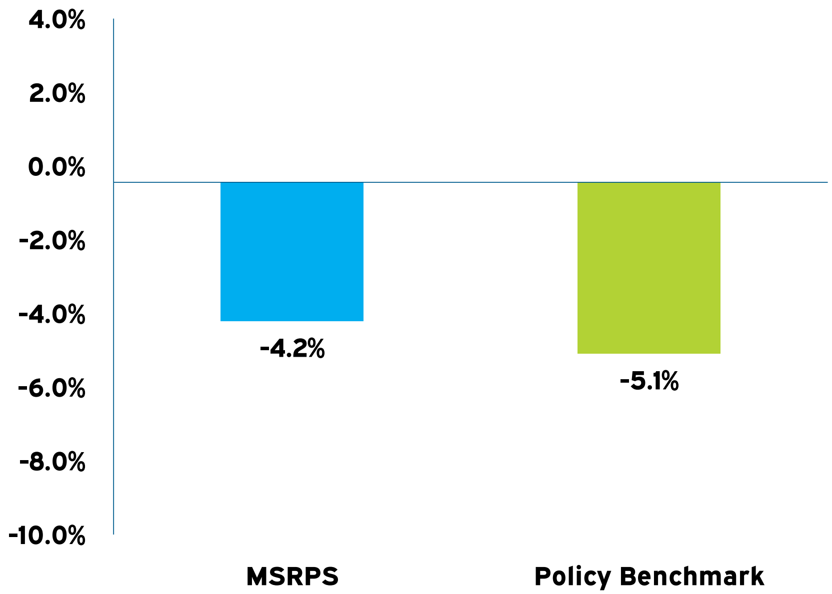
→ The System returned -4.2%, net of fees, during the third quarter of 2022, outperforming the policy benchmark by 0.9%.

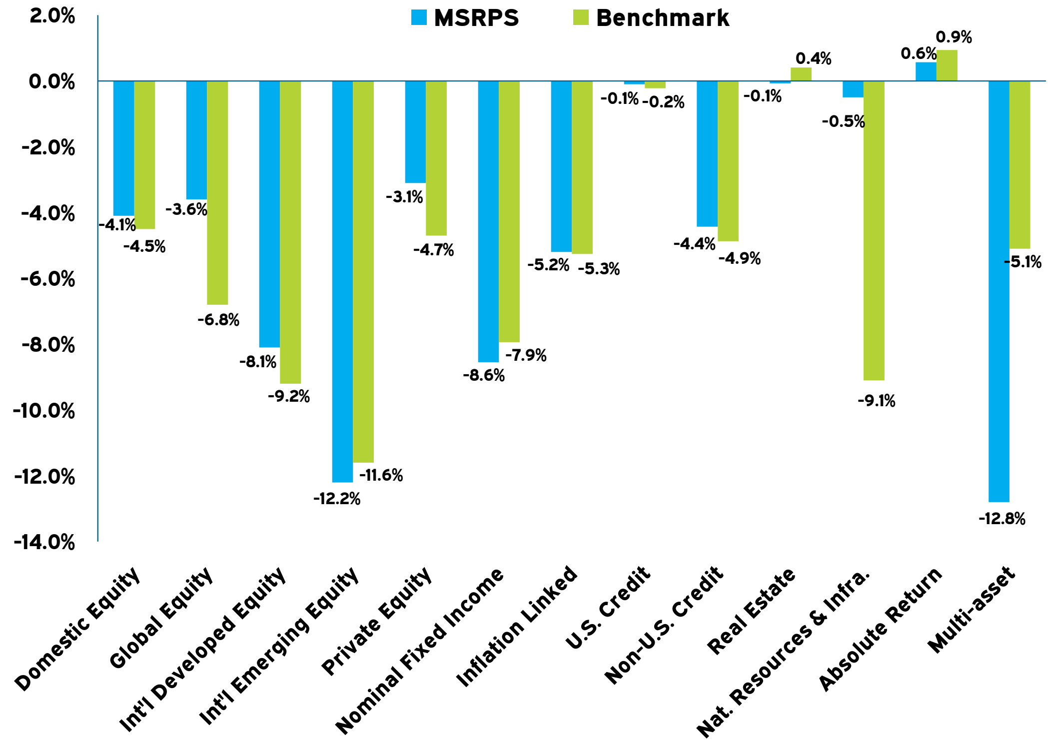
- All asset class returns were negative for the quarter with the exception of absolute return.
- Absolute return had the strongest absolute return, up 0.6% for the quarter, while multi-asset was the weakest performer in absolute terms, down 12.8%.

→ At quarter end, all asset classes were within their respective target allocation ranges.

Q3 System and Asset Class Performance

→ The System outperformed the Policy Benchmark during the third quarter, returning -4.2%, net of fees.





→ During the quarter, absolute return delivered the best absolute performance returning 0.6%.

→ On a relative basis, natural resources and infrastructure was the best performing asset class, outpacing its benchmark by 8.6%.

Note: For some asset classes, there is a lack of publicly available index data which at times can introduce greater tracking error in the short-term (e.g. natural resources & infrastructure) when a market proxy is used.

Total System Q3 Attribution[1]

	Total System			Policy Benchmark			Attribution Analysis			
	Average Weight	Total Return[2]	Contribution to Return	Average Weight[3]	Total Return[2]	Contribution to Return	Allocation Effect	Active Management Effect[4]	Interaction Effect	Total Effect
Public Equity	29.0	-7.2	-2.1	28.8	-7.7	-2.2	-0.02	-0.01	0.14	0.12
Domestic Equity	11.2	-4.0	-0.4	12.7	-4.5	-0.6	-0.05	0.06	-0.01	0.01
International Developed	6.5	-9.5	-0.6	7.6	-9.2	-0.7	0.04	-0.03	0.00	0.02
International Emerging	7.8	-11.9	-0.9	8.5	-11.6	-1.0	0.04	-0.04	0.00	0.00
Global Equity	3.5	-2.7	-0.1	0.0	-6.8	0.0	-0.05	0.00	0.14	0.09
Private Equity	21.2	-3.1	-0.7	21.2	-4.7	-1.0	0.00	0.35	0.00	0.35
Nominal Fixed Income	13.4	-6.9	-0.9	15.1	-7.9	-1.2	0.05	0.16	-0.02	0.19
Inflation Linked	4.5	-5.1	-0.2	4.7	-5.3	-0.2	0.00	0.00	0.00	0.00
US Credit	7.1	-0.2	0.0	7.0	-0.2	0.0	0.00	0.00	0.00	0.00
Non- US Credit	0.8	-4.4	0.0	1.0	-4.9	0.0	0.00	0.01	0.00	0.00
Real Estate	11.1	-0.1	0.0	11.1	0.4	0.0	0.00	-0.05	0.00	-0.05
Natural Resources & Infrastructure	4.8	-0.5	0.0	5.0	-9.1	-0.5	-0.04	0.43	0.01	0.40
Absolute Return	6.7	0.6	0.0	6.0	0.9	0.1	-0.02	-0.02	-0.02	-0.05
Multi-Asset	0.4	-12.8	0.0	0.0	-5.1	0.0	0.00	0.00	-0.03	-0.03
Cash	1.0	0.6	0.0	0.0	0.4	0.0	0.03	0.00	0.00	0.03
Total (excl. overlay)	-	-	-4.01	-	-	-5.09	0.00	0.86	0.09	0.95
Currency Overlay							0.10			
Structural/Tactical Overlay							-0.29			
Total (incl. overlay)	**100.0**	**-**	**-4.21**	**100.0**	**-**	**-5.09**	**-0.19**	**0.86**	**0.09**	**0.76**

[1] Numbers may not sum due to rounding. Attribution calculated on a monthly basis, using average month end market values and targets. As a result, there can be discrepancies from custodian data due to intra-month transfers.
[2] "Total Return" and "Contribution to Return" reflects asset class and System performance excluding the currency hedging and structural/tactical overlay programs.
[3] Based on the transitional target allocations.
[4] In cases where the policy weight is zero, the active management effect will in turn be zero. The interaction effect will capture any contributions made by active management where the policy weight is zero as it factors in the portfolio weight.

Total System 1-Year Attribution[1]

	Total System			Policy Benchmark			Attribution Analysis			
	Average Weight	Total Return[2]	Contribution to Return	Average Weight[3]	Total Return[2]	Contribution to Return	Allocation Effect	Active Management Effect[4]	Interaction Effect	Total Effect
Public Equity	31.1	-24.3	-7.5	30.1	-22.2	-6.7	-0.11	-0.77	-0.17	-1.05
Domestic Equity	11.7	-19.2	-2.3	13.2	-17.6	-2.3	0.05	-0.26	0.02	-0.19
International Developed	6.9	-27.4	-1.9	8.0	-23.9	-1.9	0.15	-0.38	0.06	-0.17
International Emerging	8.4	-29.1	-2.4	8.9	-28.1	-2.5	0.10	-0.13	0.01	-0.03
Global Equity	4.1	-23.7	-1.0	0.0	-20.7	0.0	-0.41	0.00	-0.25	-0.66
Private Equity	19.9	7.7	1.5	19.9	6.4	1.3	0.00	0.26	0.00	0.26
Nominal Fixed Income	13.4	-20.8	-2.8	16.2	-22.7	-3.7	0.45	0.37	-0.05	0.77
Inflation Linked	4.2	-12.2	-0.5	4.5	-12.3	-0.6	0.00	0.00	0.00	0.01
US Credit	7.3	-3.8	-0.3	7.0	-11.9	-0.8	-0.02	0.59	0.03	0.59
Non- US Credit	1.2	-21.7	-0.3	1.3	-23.0	-0.3	0.02	0.01	0.00	0.03
Real Estate	9.3	30.1	2.8	9.3	21.3	2.0	0.00	0.71	0.00	0.71
Natural Resources & Infrastructure	4.2	9.8	0.4	4.3	-4.9	-0.2	-0.08	0.60	0.06	0.58
Absolute Return	7.5	2.0	0.1	7.3	2.5	0.2	-0.04	-0.04	-0.02	-0.09
Multi-Asset	0.8	-29.3	-0.2	0.0	-10.0	0.0	0.00	0.00	-0.17	-0.17
Cash	1.1	0.3	0.0	0.0	0.6	0.0	0.03	0.00	0.00	0.03
Total (excl. overlay)	-	-	-7.99	-	-	-9.96	0.25	1.74	-0.32	1.67
Currency Overlay							0.24			
Structural/Tactical Overlay							-0.75			
Total (incl. overlay)	**100.0**	**-**	**-8.48**	**100.0**	**-**	**-9.96**	**-0.26**	**1.74**	**-0.32**	**1.16**

[1] Numbers may not sum due to rounding. Attribution calculated on a monthly basis, using average month end market values and targets. As a result, there can be discrepancies from custodian data due to intra-month transfers.
[2] "Total Return" reflects asset class performance excluding the currency hedging and structural/tactical overlay programs.
[3] Based on the transitional target allocations.
[4] In cases where the policy weight is zero, the active management effect will in turn be zero. The interaction effect will capture any contributions made by active management where the policy weight is zero as it factors in the portfolio weight.

Attribution Commentary

Third Quarter

→ In the third quarter, the System outperformed the policy benchmark by 0.88%.

→ Inclusive of the overlay program, asset allocation had a negative effect on the relative performance.

→ Active management and interaction effects were additive to relative performance over this period.

- While selection within real estate, international developed and emerging equities slightly detracted from relative performance, manager performance within natural resources and infrastructure, private equity, and nominal fixed income drove the positive active management effect.

Trailing 1-Year

→ Over the trailing one-year period, the System outperformed the Policy Benchmark by 1.47%.

→ Inclusive of the overlay program, the asset allocation effect detracted from relative performance.

→ While interaction effects detracted from performance due to underperformance within global equity, active management contributed positively over the trailing year.

- Manager selection within real estate, US credit, natural resources and infrastructure, private equity, and nominal fixed income were the most additive while selection within public equities detracted.

Attribution Details

Returns Based Attribution Definition:

→ Attribution is an analytical evaluation of a portfolio's performance relative to its benchmark. Attribution can portray where portfolio decisions were additive or detracted from relative performance. The three main attribution effects are the following:

- *Allocation Effect:* how the overweight or underweight of an asset class relative to the benchmark contributes to or detracts from performance.
- *Active Management Effect:* attributes relative performance to managers' stock selection decisions, relative to the benchmark.
- *Interaction Effect:* captures the portion of active management that is responsible for the cross interaction between the allocation and active management effects.
  - For example, if the System is overweight an underperforming asset class, it will have a negative interaction effect.

Calculations[1]:

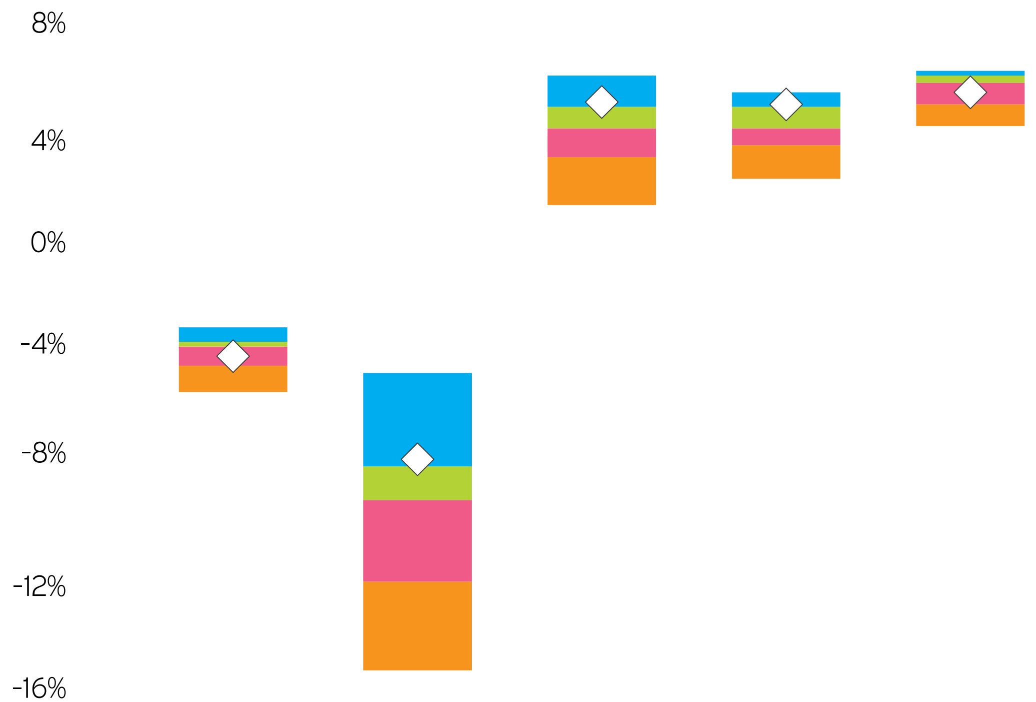
→ The Brinson Fachler attribution methodology is widely accepted within the industry. Using this methodology, the components are calculated as follows:

- *Allocation Effect:* $(\mathrm{Rab} - \mathrm{Rpb}) \times (\mathrm{Wp} - \mathrm{Wb})$
- *Active Management Effect[2]:* $\mathrm{Wb} \times (\mathrm{Rp} - \mathrm{Rab})$
- *Interaction Effect:* $(\mathrm{Wp} - \mathrm{Wb}) \times (\mathrm{Rp} - \mathrm{Rab})$

[1] Rpb= Policy Benchmark
Rab = Asset Class Benchmark
Wp = Portfolio Weight
Wb = Policy Weight
Rp = Asset Class Return
Rb = Policy Benchmark Return

[2] In cases where the policy weight is zero, the active management effect will in turn be zero. The interaction effect will capture any contributions made by active management where the policy weight is zero as it factors in the portfolio weight.

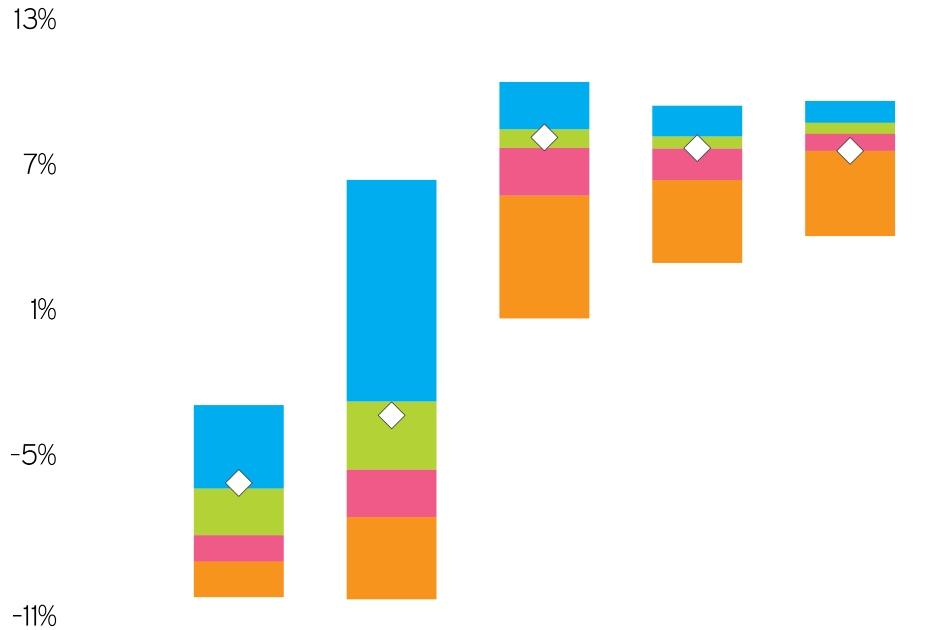
Total System vs. Public Plans >$1 Billion Universe[1]
As of September 30, 2022



	3Q22 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
Total System	-4.2	-8.5	6.4	6.3	6.8
25th Percentile	-3.6	-8.8	6.2	6.2	7.5
Median	-3.8	-10.2	5.3	5.3	7.2
75th Percentile	-4.6	-13.6	4.1	4.6	6.3
Rank (%)	*64*	*22*	*19*	*25*	*60*

[1] Represents a final cut of the InvMetrics Public DB >$1 bn peer group as of September 30, 2022. Total System performance is net of fees. Includes 39 plans.

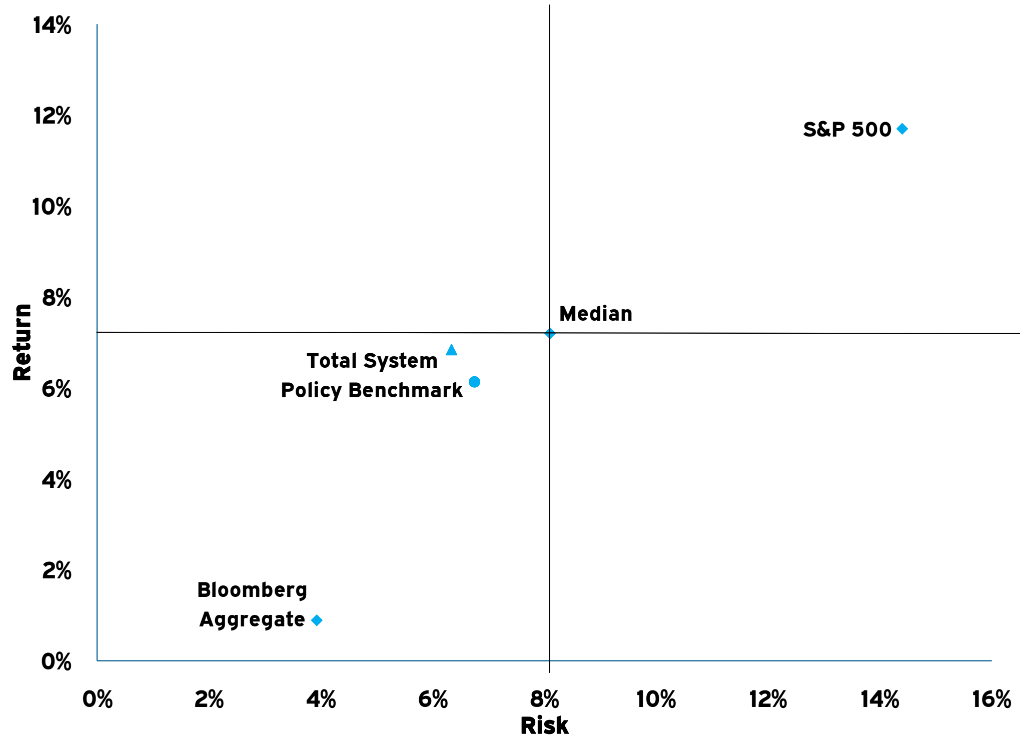
Total System vs. Public Plans >$25 Billion Universe[1]
As of June 30, 2022



	2Q22 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
Total System	-5.6	-2.8	8.6	8.1	8.0
25th Percentile	-5.8	-2.6	8.9	8.6	9.2
Median	-7.7	-5.0	8.1	8.1	8.7
75th Percentile	-8.8	-7.0	6.2	6.8	8.0
Rank (%)	21	37	33	41	75
Policy Benchmark	*-7.3*	*-3.5*	*7.4*	*7.4*	*7.1*
Rank (%)	*46*	*45*	*58*	*58*	*89*

[1] Represents the TUCS Public >$25 bn peer group as of June 30, 2022. Total System performance is gross of fees. Includes 28 plans.

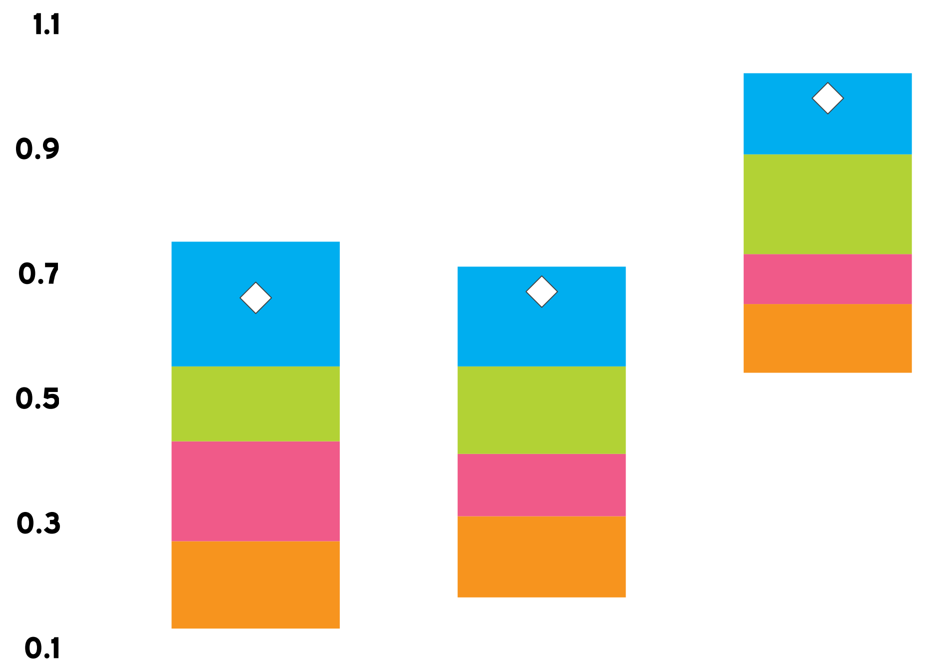
Total System Trailing 10-Year Risk vs Return[1]
As of September 30, 2022



	Risk (%)	Return (%)
Total System	6.3	6.8
Policy Benchmark	6.8	6.1
Median	8.1	7.2

[1] Represents a final cut of InvMetrics Public DB >$1 bn Net peer group as of September 30, 2022. Includes 39 plans.

Total System vs. Public Plans >$1 Billion Universe Sharpe Ratio Comparison[1]
As of September 30, 2022

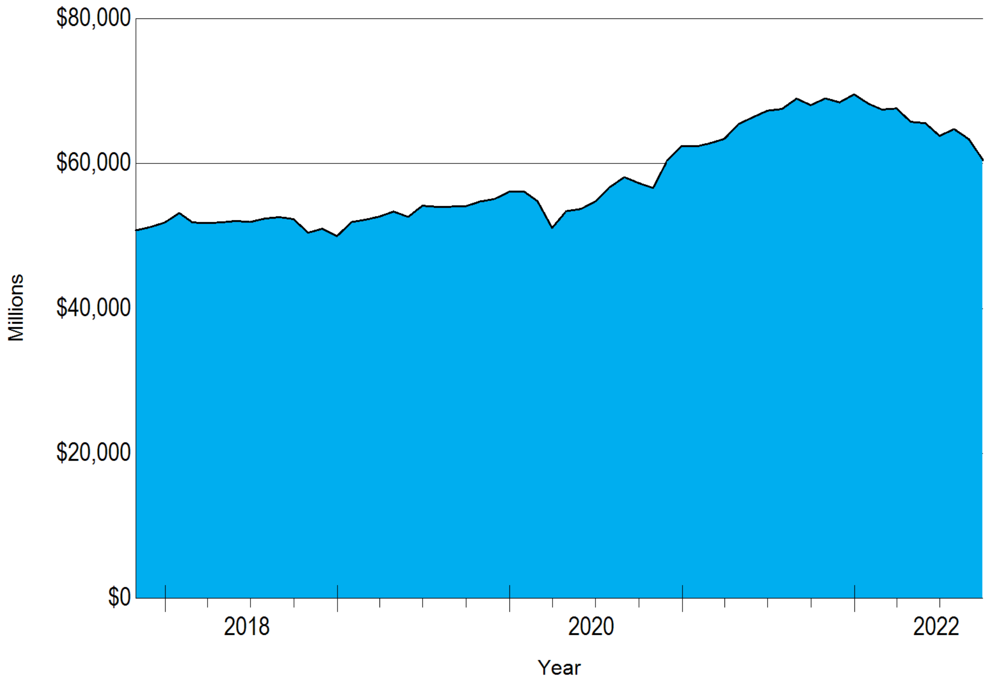


	3 YR	5 YR	10 YR
Total System	0.7	0.7	1.0
S&P 500	0.4	0.5	0.8
25th Percentile	0.6	0.6	0.9
Median	0.4	0.4	0.7
75th Percentile	0.3	0.3	0.7
Rank (%)	*13*	*12*	*10*

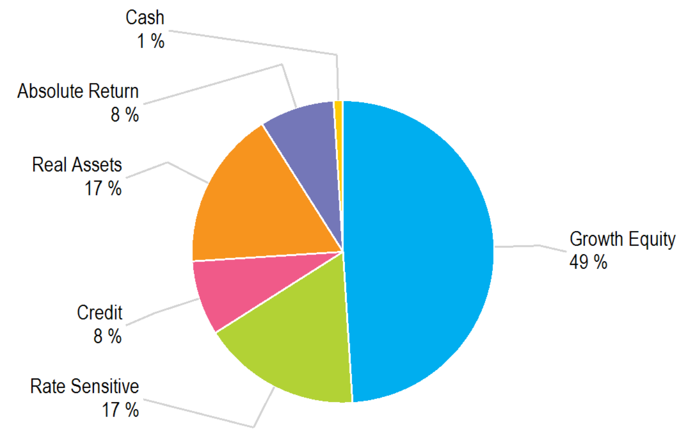
[1] Represents a final cut of Investor Force Public DB >$1 bn Net peer group as of September 30, 2022. Includes 39 plans. The risk-free rate is the 91-day T-bill.

Performance Summary

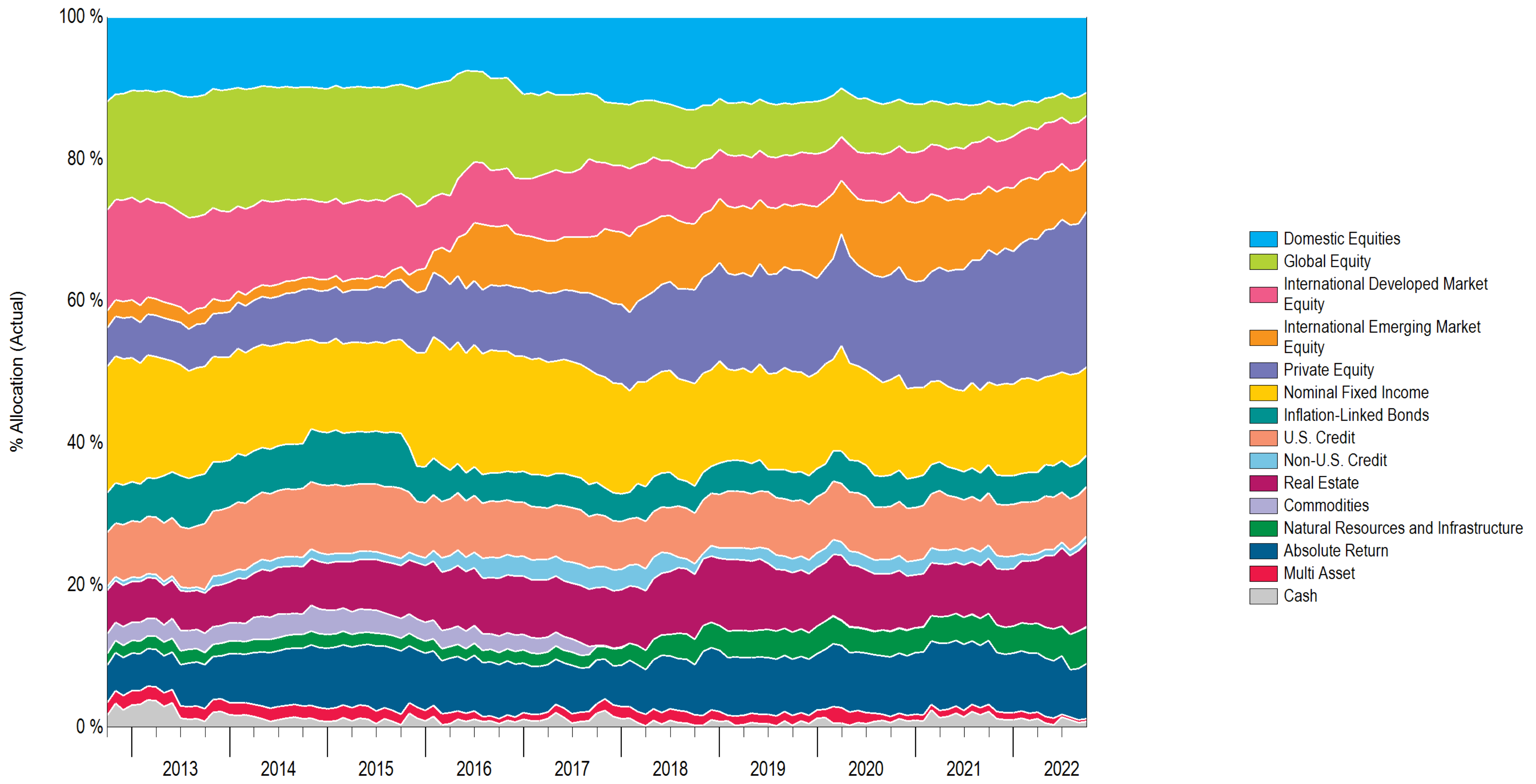
Market Value History
5 Years Ending September 30, 2022



Actual Allocation



Asset Allocation History
10 Years Ending September 30, 2022



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Allocation vs. Targets and Policy					
	Current Balance	Current Allocation	Transitional Targets	Policy	Policy Range
Growth Equity	**$30,257,434,315**	**49%**	**50%**	**50%**	**43% - 57%**
Domestic Equities	$6,547,819,312	11%	12%	15%	--
Global Equity	$2,000,091,027	3%	0%	0%	--
International Developed Market Equity	$3,779,785,531	6%	8%	9%	--
International Emerging Market Equity	$4,479,365,700	7%	8%	10%	--
Private Equity	$13,450,372,745	22%	22%	16%	--
Rate Sensitive	**$10,755,865,159**	**18%**	**19%**	**21%**	**16% - 26%**
Nominal Fixed Income	$8,067,223,569	13%	15%	16%	--
Inflation-Linked Bonds	$2,688,641,590	5%	4%	5%	--
Credit	**$4,828,250,419**	**8%**	**8%**	**8%**	**4% - 12%**
U.S. Credit	$4,316,888,765	7%	7%	7%	--
Non-U.S. Credit	$511,361,653	1%	1%	1%	--
Real Assets	**$10,463,560,055**	**17%**	**17%**	**15%**	**11% - 18%**
Real Estate	$7,262,025,408	12%	12%	10%	--
Commodities	$75,739,326	0%	0%	0%	--
Natural Resources and Infrastructure	$3,125,795,321	5%	5%	5%	--
Absolute Return	**$4,323,930,522**	**7%**	**6%**	**6%**	**2% - 10%**
Absolute Return	$4,323,930,522	7%	6%	6%	--
Multi Asset	**$209,368,623**	**0%**	**0%**	**0%**	**0% - 2%**
Multi Asset	$209,368,623	0%	0%	0%	--
Cash	**$512,574,955**	**1%**	**0%**	**0%**	**0% - 2%**
Cash	$512,574,995	1%	0%	0%	--
Total	**$61,350,984,088**	**100%**	**100%**	**100%**	

Asset Class Performance Summary

	Market Value ($)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total System	**61,350,984,088**	**100.0**	**-4.2**	**-11.7**	**-8.5**	**6.4**	**6.3**	**6.8**	**7.9**	**Jul-86**
System Policy Benchmark			*-5.1*	*-13.4*	*-10.0*	*5.1*	*5.6*	*6.1*	*--*	*Jul-86*
System Strategic Policy Benchmark			*-5.1*	*-13.2*	*-9.6*	*5.3*	*5.7*	*6.3*	*--*	*Jul-86*
Growth Equity	**30,257,434,316**	**49.3**	**-5.4**	**-16.0**	**-12.2**	**10.3**	**8.9**	**10.4**	**6.6**	**Jan-98**
Public Equity	**16,807,061,571**	**27.4**	**-7.2**	**-26.1**	**-23.3**	**3.6**	**3.7**	**7.4**	**--**	**Apr-94**
Public Equity Custom Benchmark			*-7.8*	*-25.7*	*-22.4*	*2.5*	*3.2*	*6.8*	*--*	*Apr-94*
Domestic Equity	**6,547,819,313**	**10.7**	**-4.1**	**-23.5**	**-16.9**	**7.2**	**8.3**	**11.0**	**8.8**	**Apr-94**
U.S. Equity Custom Benchmark			*-4.5*	*-24.6*	*-17.6*	*7.7*	*8.6*	*11.4*	*--*	*Apr-94*
Global Equity	**2,000,091,028**	**3.3**	**-3.6**	**-28.0**	**-26.1**	**5.9**	**5.1**	**8.0**	**6.4**	**Oct-05**
Global Equity Custom Benchmark			*-6.8*	*-25.6*	*-20.7*	*3.7*	*4.4*	*7.3*	*5.8*	*Oct-05*
International Developed Market Equity	**3,779,785,531**	**6.2**	**-8.1**	**-26.2**	**-24.5**	**0.4**	**0.5**	**4.1**	**5.5**	**Jan-95**
MSRA Custom International Index			*-9.2*	*-26.2*	*-23.9*	*-1.2*	*-0.4*	*2.9*	*4.4*	*Jan-95*
International Emerging Markets Equity	**4,479,365,700**	**7.3**	**-12.2**	**-28.6**	**-29.5**	**-1.4**	**-1.1**	**--**	**3.6**	**Nov-15**
MSCI Emerging Markets			*-11.6*	*-27.2*	*-28.1*	*-2.1*	*-1.8*	*1.0*	*2.9*	*Nov-15*
Private Equity	**13,450,372,745**	**21.9**	**-3.1**	**1.7**	**7.7**	**22.0**	**19.3**	**17.1**	**9.6**	**Mar-94**
State Street Private Equity Index			*-4.7*	*0.1*	*6.4*	*19.7*	*17.0*	*14.2*	*--*	*Mar-94*
Rate Sensitive	**10,755,865,159**	**17.5**	**-7.7**	**-24.0**	**-22.3**	**-4.9**	**-0.4**	**1.1**	**6.0**	**Jul-86**
Custom Rate Sensitive Benchmark			*-7.3*	*-22.2*	*-20.5*	*-5.0*	*-0.3*	*1.0*	*--*	*Jul-86*
Nominal Fixed Income	**8,067,223,569**	**13.1**	**-8.6**	**-26.8**	**-25.2**	**-6.8**	**-1.2**	**0.8**	**5.9**	**Jul-86**
Custom Nominal Fixed Income Benchmark			*-7.9*	*-24.3*	*-22.8*	*-6.6*	*-1.0*	*0.6*	*--*	*Jul-86*
Inflation-Linked Bonds	**2,688,641,590**	**4.4**	**-5.2**	**-14.3**	**-12.2**	**0.8**	**2.0**	**1.4**	**3.2**	**Jul-08**
Custom Inflation Sensitive Benchmark			*-5.3*	*-14.4*	*-12.3*	*0.6*	*1.9*	*1.5*	*3.0*	*Jul-08*

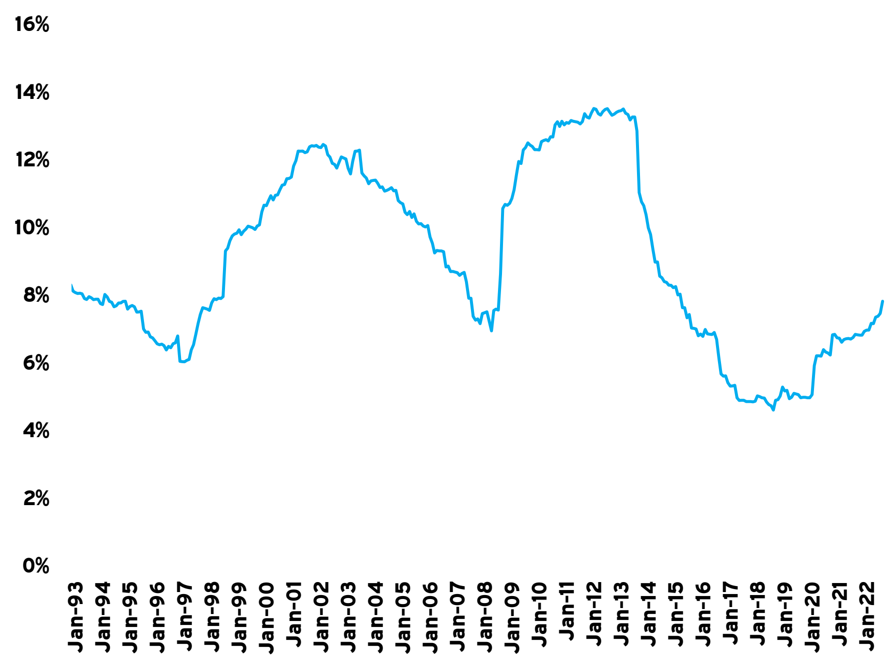
	Market Value ($)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Credit	**4,828,250,419**	**7.9**	**-0.6**	**-7.5**	**-6.3**	**2.2**	**2.9**	**4.7**	**7.4**	**Mar-09**
U.S. Credit	**4,316,888,766**	**7.0**	**-0.1**	**-5.7**	**-3.8**	**3.7**	**4.4**	**5.9**	**7.8**	**Mar-09**
U.S. Credit Custom Benchmark			*-0.2*	*-12.5*	*-11.9*	*0.1*	*1.9*	*3.6*	*6.5*	*Mar-09*
Non-U.S. Credit	**511,361,653**	**0.8**	**-4.4**	**-20.5**	**-21.6**	**-5.6**	**-2.8**	**-2.4**	**-1.2**	**Oct-10**
Non-U.S. Credit Custom Benchmark			*-4.9*	*-21.8*	*-23.0*	*-6.7*	*-3.1*	*-2.1*	*-1.0*	*Oct-10*
Real Assets	**10,463,560,055**	**17.1**	**-0.2**	**16.6**	**23.8**	**11.0**	**8.8**	**4.5**	**5.4**	**Feb-06**
Custom Real Assets Benchmark			*-2.6*	*4.9*	*12.8*	*10.0*	*8.4*	*4.1*	*4.6*	*Feb-06*
Real Estate	**7,262,025,307**	**11.8**	**-0.1**	**21.2**	**30.1**	**12.7**	**10.4**	**10.7**	**7.3**	**Jul-87**
Real Estate Custom Benchmark			*0.4*	*12.6*	*21.3*	*12.4*	*10.4*	*10.6*	*8.5*	*Jul-87*
Commodities	**75,739,327**	**0.1**								
Natural Resources and Infrastructure	**3,125,795,321**	**5.1**	**-0.5**	**6.0**	**9.8**	**6.0**	**4.6**	**4.9**	**8.3**	**Aug-09**
Natural Resources and Infrastructure Benchmark			*-9.1*	*-11.1*	*-4.9*	*4.1*	*3.5*	*6.2*	*6.4*	*Aug-09*
Absolute Return	**4,323,930,522**	**7.0**	**0.6**	**0.6**	**2.0**	**4.5**	**4.0**	**2.8**	**3.5**	**Apr-08**
Absolute Return Custom Benchmark			*0.9*	*1.4*	*2.7*	*6.6*	*5.3*	*4.6*	*2.7*	*Apr-08*
Multi Asset	**209,368,623**	**0.3**	**-12.8**	**-32.1**	**-29.3**	**-3.8**	**--**	**--**	**-1.4**	**Jul-18**
System Policy Benchmark			*-5.1*	*-13.4*	*-10.0*	*5.1*	*5.6*	*6.1*	*5.6*	*Jul-18*
Cash	**512,574,993**	**0.8**	**0.6**	**0.3**	**0.3**	**1.0**	**3.4**	**3.3**	**3.4**	**Jul-08**
FTSE T-Bill 3 Months TR			*0.4*	*0.6*	*0.6*	*0.6*	*1.1*	*0.7*	*0.5*	*Jul-08*

Risk Dashboard

Total System Risk

Risk: (sixty months)	Total System 09/30/2022	Policy Benchmark 09/30/2022
Annualized Return (%)	6.3	5.6
Standard Deviation (%)	7.8	8.2
Best Monthly Return (%)	6.9	6.9
Worst Monthly Return (%)	-6.4	-6.4
Beta	0.94	1.00
Correlation (R^2) to Index	0.98	NA
Sharpe Measure	0.67	0.55
Information Ratio	0.60	NA
Excess Return (%)	0.71	NA
Tracking Error (%)	1.18	NA

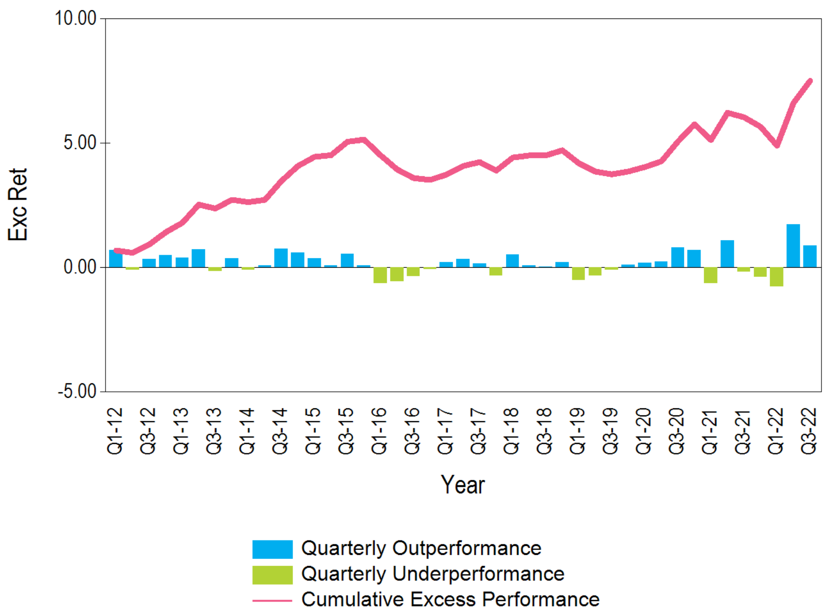
Rolling 5-Year Standard Deviation



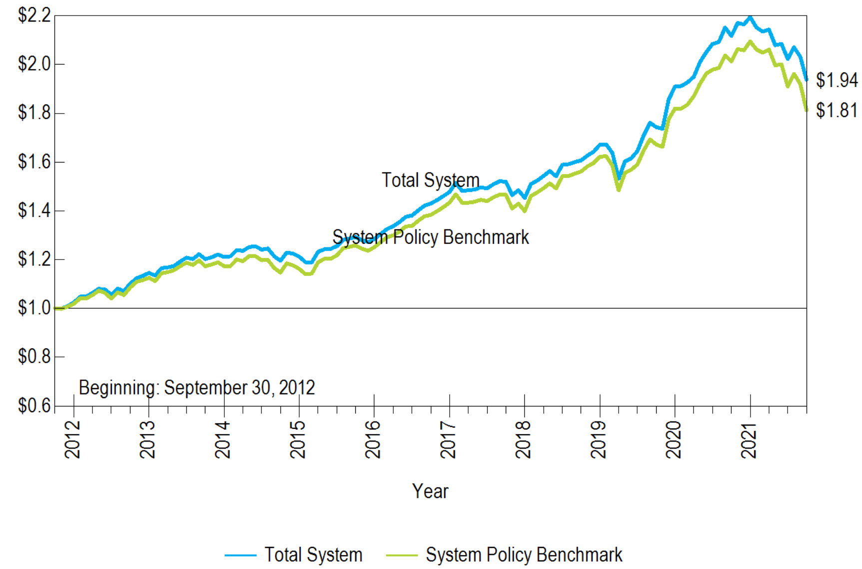
→ Over the trailing 5-years, the System has exhibited lower risk, as measured by standard deviation, than its Policy Benchmark while achieving slightly higher annualized returns.

MEKETA

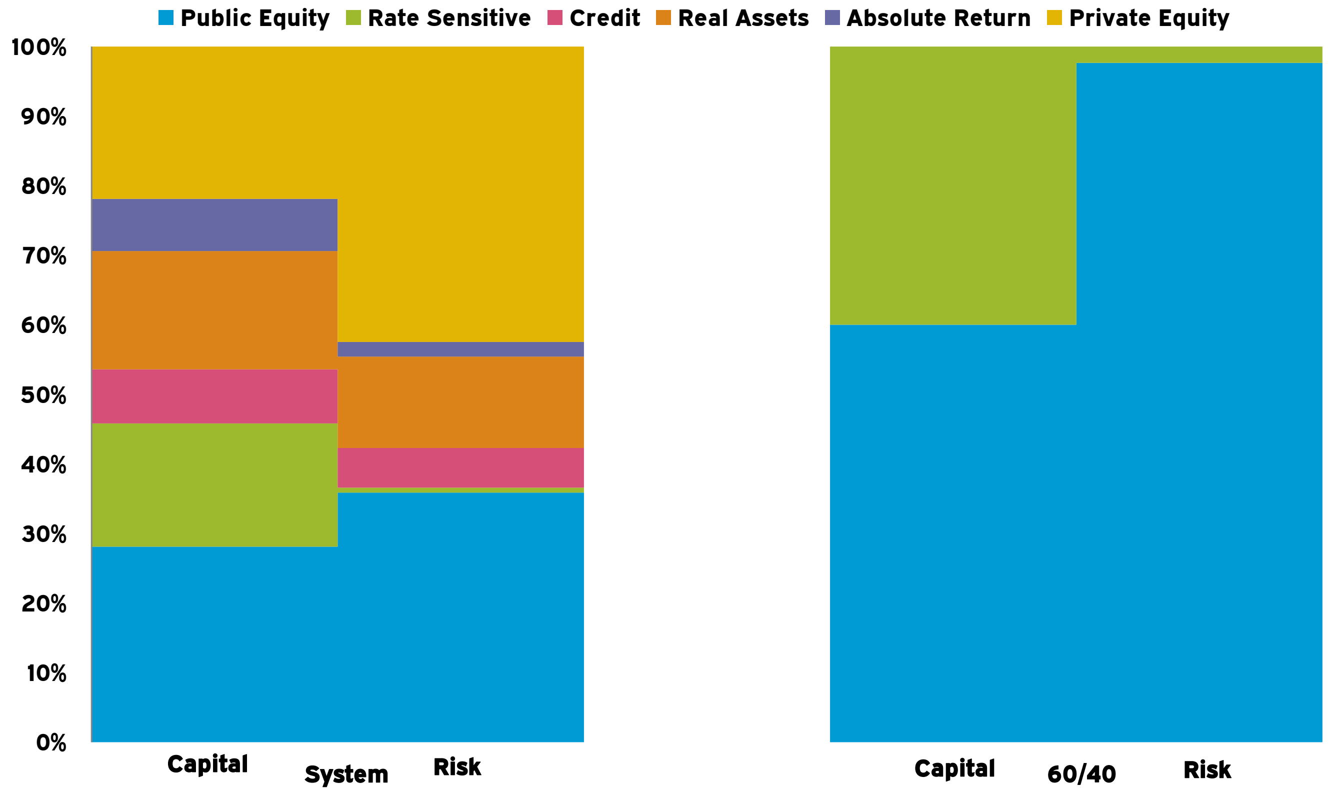
Quarterly and Cumulative Excess Performance



Growth of a Dollar
10 Years Ending September 30, 2022

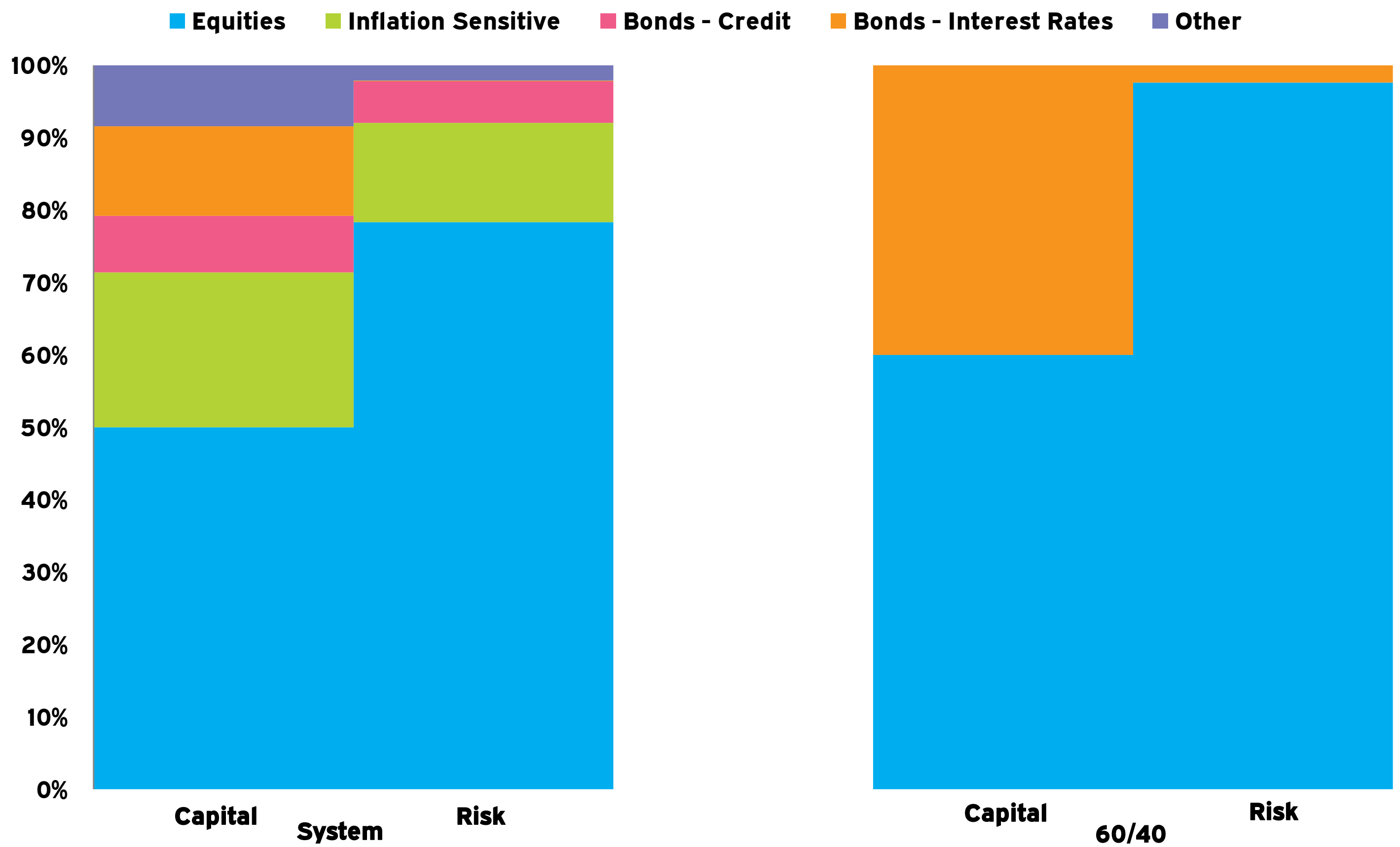


Capital Allocation vs. Risk Allocation
By Asset Class



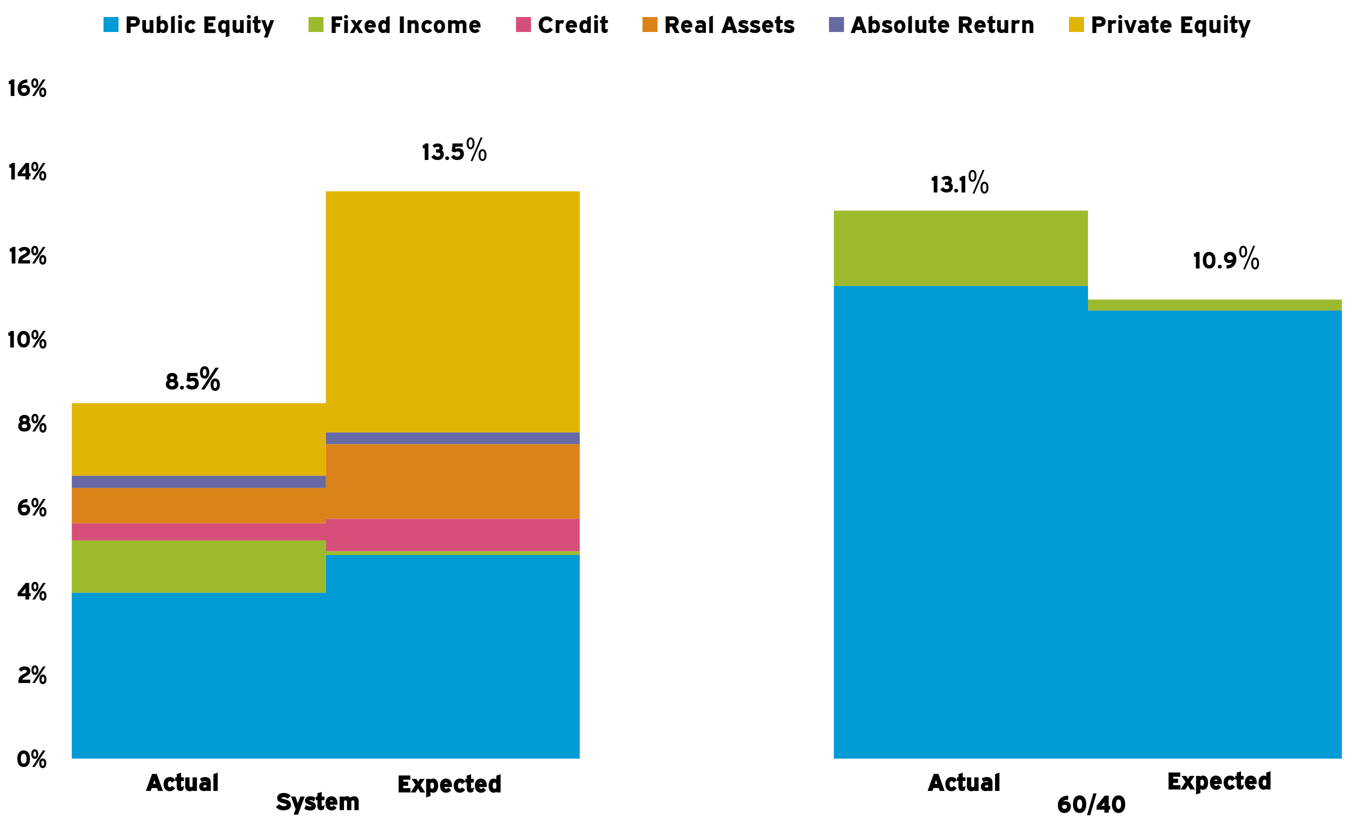
- → Public equity makes up close to 28% of the current asset allocation; however, it comprises about 36% of the risk allocation.
- → By contrast, in a 60/40 portfolio equity comprises 60% of the capital allocation but nearly 98% of the risk.

Capital Allocation vs. Risk Allocation
By Factor Exposure



→ Based on five broad risk exposures, equity (i.e. growth) risk dominates the risk composition of the System.

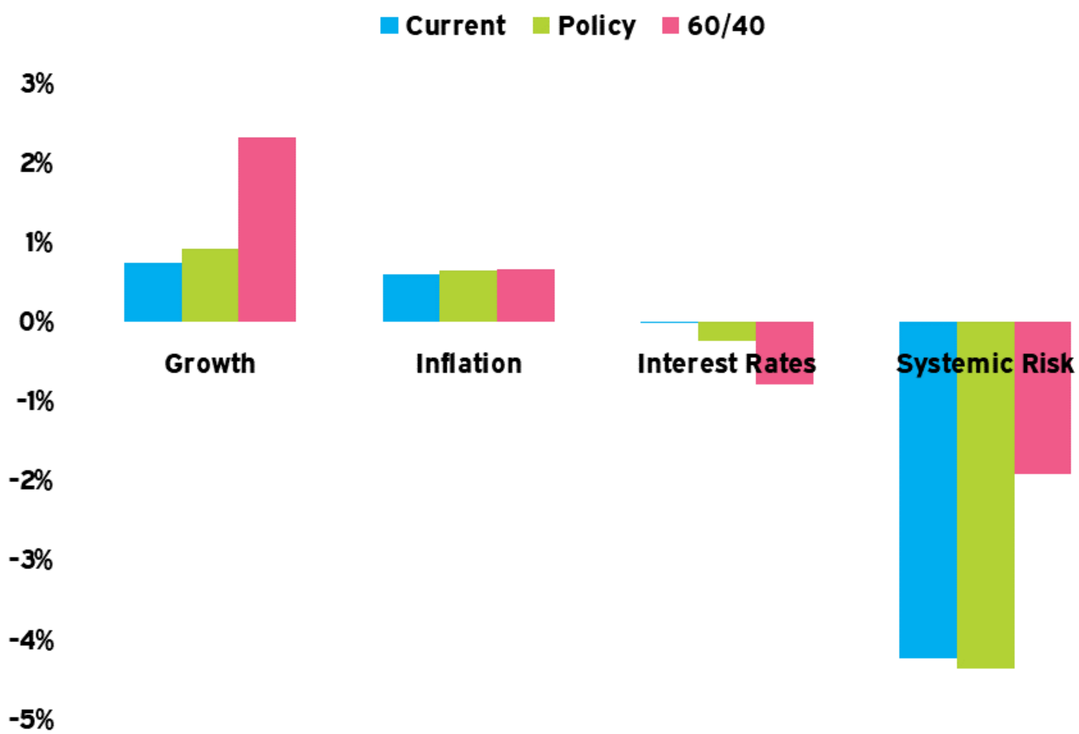
Risk Decomposition
Actual vs. Expected



→ The System's trailing 3-year standard deviation, as a measure of risk, has been lower than expected.

- Public equities, which make up over 36% of the expected risk composition, have made up over 47% of the actual risk over the last three years.

Portfolio Sensitivity Comparison



- The chart above shows the resulting change in portfolio return given a one standard deviation event in the respective risk factor.
- There is more concentration in Growth and Systematic Risk because these sources of risk tend to pay better (have higher expected returns) than the other risk factors.

Look Through Analysis Matrix[1,2]

	Manager Allocation	Public Equity	Fixed Income	Credit	Cash	Hedge Funds	Risk Parity/Multi -Asset	Closed-End Private Markets	Real Estate (Private)
Growth Equity	49%	26%				1%		22%	
Rate Sensitive	18%		17%			<1%			
Credit	8%			5%				3%	
Real Assets	17%	3%						2%	12%
Absolute Return	7%					7%			
Multi Asset	0%						<1%		
Cash	1%				1%				
Look Through Allocation	100%	29%	17%	5%	1%	9%	<1%	27%	12%

[1] Numbers may not sum to 100% due to rounding.
[2] Numbers do not reflect the impact of overlay investing.

Asset Allocation Target Range Compliance

Asset Class	Target Range (%)	In Compliance?
Growth Equity	+/- 7	Yes
Rate Sensitive	+/- 5	Yes
Credit	+/- 4	Yes
Real Assets	+/- 4	Yes
Absolute Return	+/- 4	Yes

Sub-Asset Class Allocation Target Range Compliance

Asset Class	Sub-Asset Class	Target Range (%)	In Compliance?
Public Equity	Hedge Funds	0-20	Yes
Private Equity	Buyout	60-90	Yes
	Venture/Growth	10-25	Yes
	Special Situations	10-30	Yes
Rate Sensitive	L-T Government	30-70	Yes
	Securitized Corp	10-50	Yes
	Inflation Linked	0-40	Yes
Credit	Hedge Funds	0-30	Yes
	Private Credit	0-80	Yes
Real Assets	Real Estate- Core	50-100	Yes
	Real Estate – Value Added	0-25	Yes
	Real Estate- Opportunistic	0-25	Yes
	REITS	0-30	Yes
	Commodities	0-25	Yes

Activity Update

Summary of Work to Date

Ongoing Work on Current Roster

→ Completed and submitted comprehensive quarterly reporting for the System.

- Collect and reconcile data from State Street Bank and investment managers, run holdings analysis and performance calculations.
  - Completed quarterly since second quarter 2014.

→ Completed numerous System-related reporting requirements.

- Iran/Sudan divestment analysis (semi-annually in January and July).
  - Attribution and cost analysis of identified companies and potential impact on performance resulting from divestment.

→ Annually, meet and review all public market managers (video conference calls) and make recommendations to staff on potential changes. Initial review of all managers have been completed.

- Annually, over 40 meetings completed via conference call or in person.
- Comprehensive manager analyses written on:
  - Inflation-Linked Bonds, and MLP managers (included 6 strategies)
  - US and Global Equity managers (included 9 strategies)
  - International Equity managers (included 13 strategies)
  - Fixed Income and Credit managers (included 10 strategies)

Summary of Work to Date

Investment Topics

→ Discussed general investment topics with Staff, and in some instances the Board.

→ The topics listed are covered through sharing white papers, holding conference calls, or in person meetings:

- Role of leverage in the System
- Public manager peer ranking
- Total fund fee analysis
- Survey & presentation of asset allocation best practices
- Emerging market sensitivity
- Inflation risk
- Benchmarking for private markets and hedge funds
- Fund Governance survey of best practices
- Annual risk reporting
- TUCS peer analysis
- Real estate and emerging market debt benchmarking
- Asset allocation and the impact of the inability to rebalance private markets on long-term returns
- Investing in a Low Interest Rate Environment
- Chinese Restricted List Divestment Impact Analysis
- Researching and drafting a responsible contractor policy
- Involvement with the ad hoc committee in the assumed rate of return
- Asset allocation including more detailed liability analysis and climate scenario analysis
- Implementation of Asset Allocation Changes and Benchmark Changes
- Absolute Return Program Overview
- System Exposure to China

Current Agenda Topics

→ Performance Review

→ Revisiting Emerging Markets and China: What is the impact on asset allocation?

Economic and Market Update

Data as of September 30, 2022

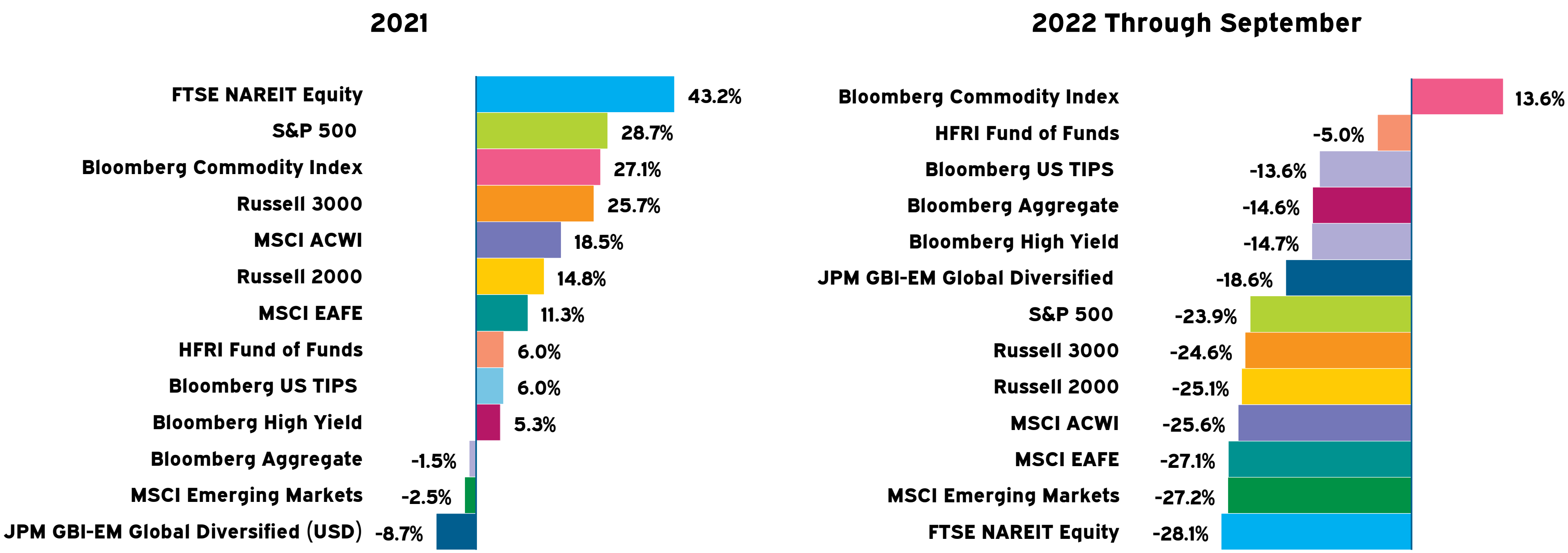
Commentary

→ After a strong July, global markets sold off in August and September, leading to quarterly declines as slower growth and higher inflation weighed on sentiment.

- The Federal Reserve maintained its aggressive tightening campaign with future hikes expected as US inflation continues to surprise to the upside and labor markets remain tight.
- In Europe, inflation hit a multi-decade high on energy prices. In the UK, Liz Truss became the new prime minister with her government quickly announcing a fiscal package in September. The proposal was poorly received by markets, as it undermined efforts of the central bank to lower inflation.
- Equity markets significantly declined for the month leading to quarterly losses with international markets declining the most. The war in Ukraine has elevated prices in Europe, while tight COVID-19 policies, slowing growth, and property market issues have weighed on China. Continued US dollar strength has been a further headwind.
- For the quarter, in a reversal of the prior trend, growth outpaced value across the capitalization spectrum but continued to trail year-to-date.
- Interest rates rose significantly across the US yield curve for the month and quarter with the curve remaining inverted (ten-year yield minus the two-year yield) by 44 basis points. This is by far the worst start to a calendar year for bond investors.

→ Persistently high inflation and the likely increased pace of the policy response, the war in Ukraine, lingering COVID-19 issues, and lockdowns in China will all have considerable consequences for the global economy.

Index Returns[1]



→ Except for emerging markets and the broad US investment grade bond market (Bloomberg Aggregate), most asset classes appreciated in 2021.

→ After a brief rally in July most asset classes declined significantly in August and September as it became clear further policy tightening would be taken to try to control inflation. Except for commodities, all major assets classes have experienced significant declines year-to-date.

[1] Source: Bloomberg and FactSet. Data is as of September 30, 2022.

Domestic Equity Returns[1]

Domestic Equity	September (%)	Q3 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	-9.2	-4.9	-23.9	-15.5	8.2	9.2	11.7
Russell 3000	-9.3	-4.5	-24.6	-17.6	7.7	8.6	11.4
Russell 1000	-9.3	-4.6	-24.6	-17.2	7.9	9.0	11.6
Russell 1000 Growth	-9.7	-3.6	-30.7	-22.6	10.7	12.2	13.7
Russell 1000 Value	-8.8	-5.6	-17.8	-11.4	4.4	5.3	9.2
Russell MidCap	-9.3	-3.4	-24.3	-19.4	5.2	6.5	10.3
Russell MidCap Growth	-8.5	-0.7	-31.5	-29.5	4.3	7.6	10.8
Russell MidCap Value	-9.7	-4.9	-20.4	-13.6	4.5	4.7	9.4
Russell 2000	-9.6	-2.2	-25.1	-23.5	4.3	3.6	8.5
Russell 2000 Growth	-9.0	0.2	-29.3	-29.3	2.9	3.6	8.8
Russell 2000 Value	-10.2	-4.6	-21.1	-17.7	4.7	2.9	7.9

US Equities: Russell 3000 Index fell 9.3% for September and 4.5% for the quarter.

→ US stocks fell sharply during September and finished down for the third quarter.

→ Each of the 11 sectors declined in September with six sectors (Real Estate, Communication Services, Technology, Utilities, Materials, and Industrials) falling by 10% or more. Health Care stocks fared best and declined 3.1%. For the quarter all sectors were down except for consumer discretionary and energy.

→ For the second straight month, value stocks outperformed growth stocks in the large cap segment of the market, while the reverse was true in the small cap segment. The underperformance of technology stocks, which account for 43% of the large cap growth market, drove this dynamic.

[1] Source: Bloomberg. Data is as of September 30, 2022.

Foreign Equity Returns[1]

Foreign Equity	September (%)	Q3 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	-10.0	-9.9	-26.5	-25.2	-1.5	-0.8	3.0
MSCI EAFE	-9.4	-9.4	-27.1	-25.1	-1.8	-0.8	3.7
MSCI EAFE (Local Currency)	-6.2	-3.6	-14.5	-11.1	2.5	2.8	7.4
MSCI EAFE Small Cap	-11.5	-9.8	-32.1	-32.1	-2.2	-1.8	5.3
MSCI Emerging Markets	-11.7	-11.6	-27.2	-28.1	-2.1	-1.8	1.0
MSCI Emerging Markets (Local Currency)	-9.4	-8.2	-20.8	-21.5	1.1	1.1	4.5
MSCI China	-14.6	-22.5	-31.2	-35.4	-7.2	-5.5	2.4

International equities (MSCI EAFE) fell 9.4%, while emerging markets (MSCI EM) returned -11.7% in September leading to quarterly declines of similar amounts.

→ Non-US developed market stocks again broadly trailed the US for the month, leading to the steepest declines year-to-date. High inflation in Europe, particularly related to gas and electricity, the ongoing war in Ukraine, and relatively slower growth globally continue to weigh on sentiment.

→ Emerging market equities were deep in the red for the month, driven by China's (-14.6%) on-going property market issues and strict COVID-19 policies. The upcoming National Communist Party Congress in China in October is highly anticipated.

→ The strength of the US dollar continued as a headwind to international equities for the month and year-to-date, both in developed and emerging markets.

[1] Source: Bloomberg. Data is as of September 30, 2022.

Fixed Income Returns[1]

Fixed Income	September (%)	Q3 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	-4.3	-4.5	-14.9	-14.9	-3.1	-0.2	1.2	5.2	6.2
Bloomberg Aggregate	-4.3	-4.8	-14.6	-14.6	-3.3	-0.3	0.9	4.8	6.4
Bloomberg US TIPS	-6.6	-5.1	-13.6	-11.6	0.8	1.9	1.0	4.3	6.9
Bloomberg High Yield	-4.0	-0.6	-14.7	-14.1	-0.5	1.6	3.9	9.7	4.6
JPM GBI-EM Global Diversified (USD)	-4.9	-4.7	-18.6	-20.6	-7.1	-3.9	-2.4	7.6	4.8

Fixed Income: The Bloomberg Universal declined 4.3% in September and 4.5% for the quarter.

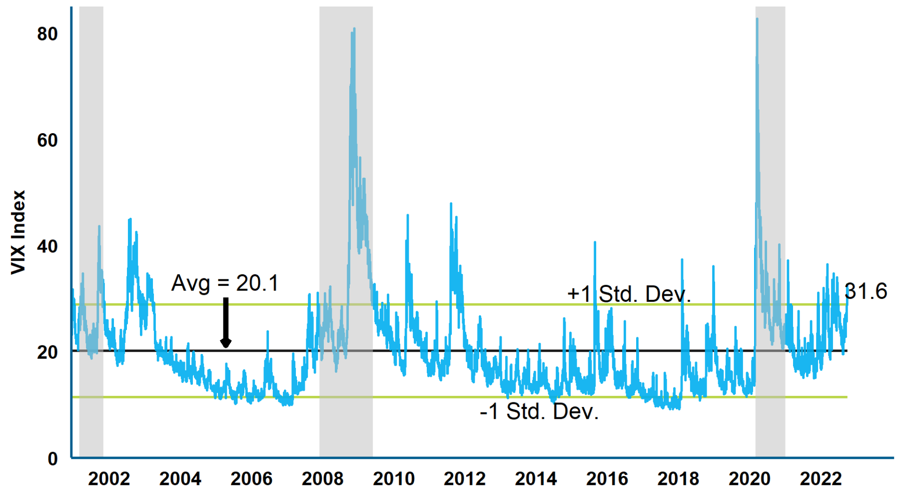
→ A sharp rise in bond yields driven by central banks confirming commitments to fight inflation weighed on fixed income in September leading to declines for the quarter as well. Year-to-date the US bond market is off by far to its worst calendar year start on record.

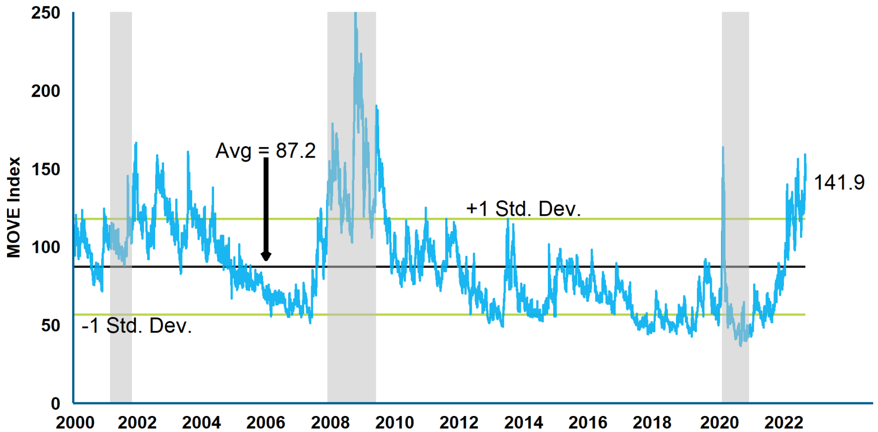
→ TIPS declined the most for the month and quarter as investors' confidence grew that tighter monetary policy would ultimately get inflation under control.

→ Riskier US bonds declined the least with the high yield index falling slightly less than the broad US bond market (-4.0% versus -4.3%). Emerging market bonds finished down close to 5% for the month with significant declines year-to-date.

[1] Source: Bloomberg. JPM GBI-EM is from InvestorForce. Data is as of September 30, 2022.

Equity and Fixed Income Volatility[1]

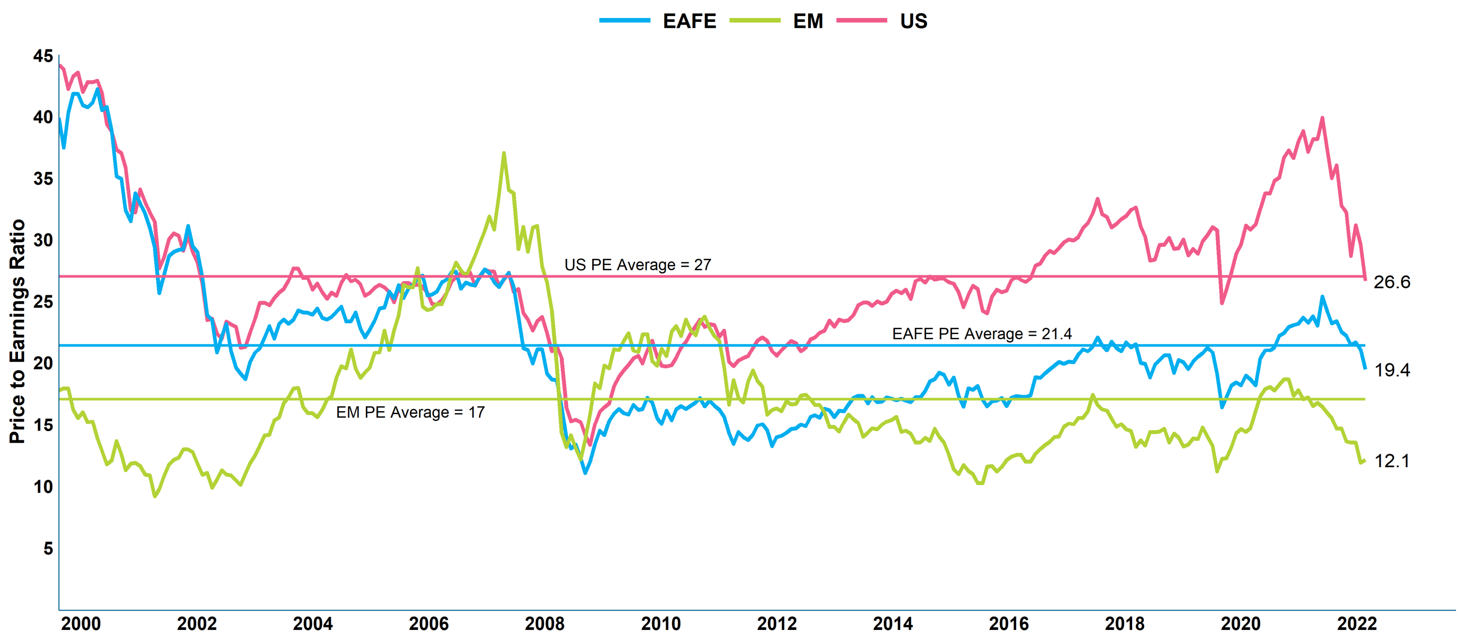




- → Volatility in equities (VIX) and fixed income (MOVE) rose in September and finished higher overall for the quarter as the Federal Reserve and other central banks made it clear that they were committed to aggressively tightening monetary policy to fight high inflation.
- → Fixed income volatility remains particularly high due to the uncertain path of short-term interest rates given stubbornly high inflation. Issues related to the UK's announcement to offer tax breaks despite the central bank's efforts to fight inflation also contributed to volatility in fixed income markets.

[1] Equity and Fixed Income Volatility – Source: Bloomberg. Implied volatility as measured using VIX Index for equity markets and the MOVE Index to measure interest rate volatility for fixed income markets. Data is as of September 2022. The average line indicated is the average of the VIX and MOVE values between January 2000 and the recent month-end respectively.

Equity Cyclically Adjusted P/E Ratios[1]

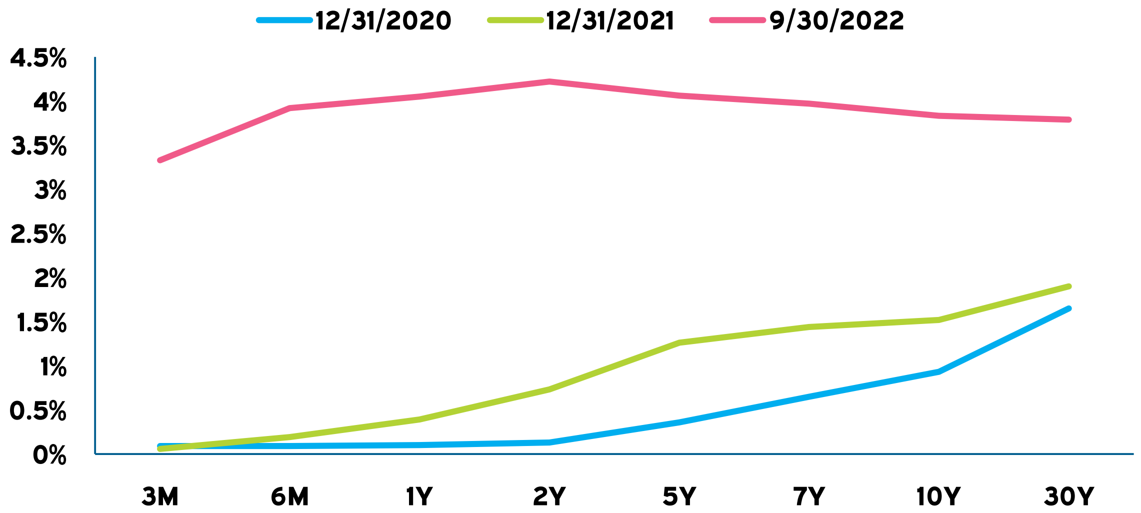


→ September price declines brought US equity price-to-earnings ratios slightly below the long-term (21st Century) average.

→ International developed market valuations remain below the US and are below their own long-term average, with those for emerging markets the lowest and well under the long-term average.

[1] US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years. Data is as of September 30, 2022. The average line is the long-term average of the US, EM, and EAFE PE values from December 1999 to the recent month-end respectively.

US Yield Curve[1]



→ Rates across the yield curve remain far higher than at the start of the year.

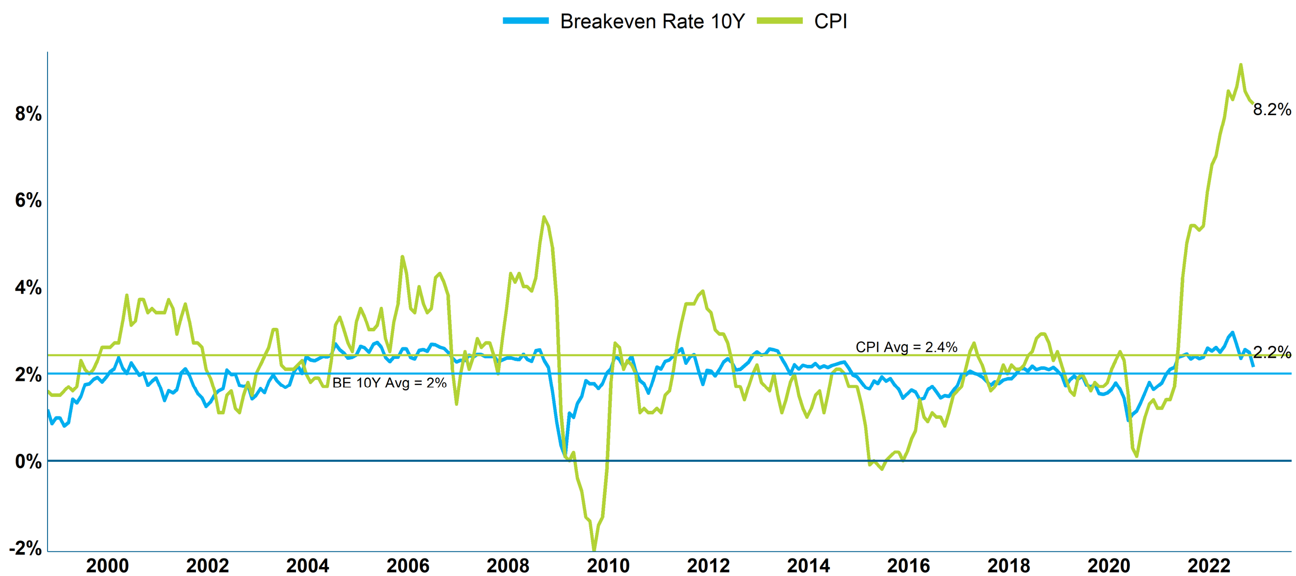
→ In September, rates rose across the yield curve, finishing the quarter significantly higher. Yields on two-year Treasuries increased 0.79% just in the month of September bring the quarterly increase to 1.32%, while ten-year Treasuries rose 0.64% for the month and 0.82% for the quarter.

→ The Fed remains strongly committed to fighting inflation, as it increased rates another 75 basis points to a range of 3.0% and 3.25%. This was the fifth increase this year and the third consecutive increase of this amount.

→ The yield spread between two-year and ten-year Treasuries remained negative, finishing September at -0.44%. Inversions in the yield curve have historically often preceded recessions.

[1] Source: Bloomberg. Data is as of September 30, 2022.

Ten-Year Breakeven Inflation and CPI[1]



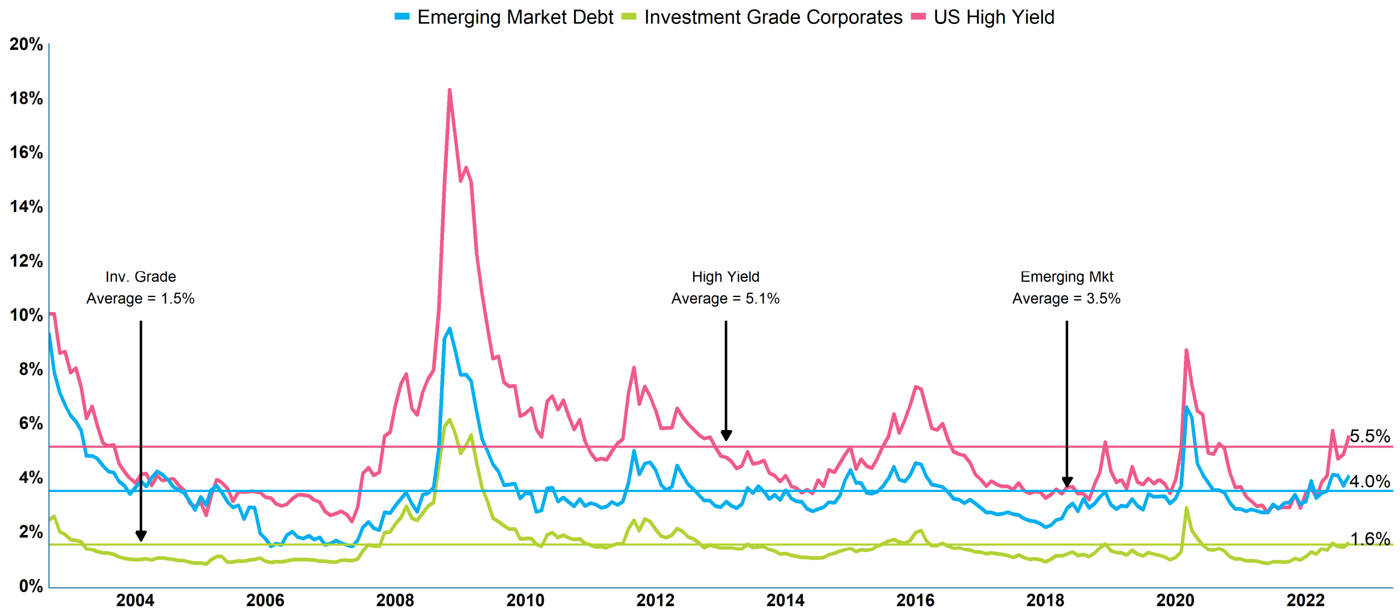
→ Inflation expectations (breakevens) declined for the month and finished the quarter slightly below the long-run average on the belief that tighter monetary policy would lower long-run inflation.

→ Trailing twelve-month CPI declined in September (8.2% versus 8.3%) but surprised markets by coming in above expectations.

→ Over the last year rising prices for energy (particularly oil), food, housing, and for new and used cars remain key drivers of inflation.

[1] Source: Bloomberg. Data is as of September 30, 2022. The CPI and 10 Year Breakeven average lines denote the average values from August 1998 to the present month-end respectively. Breakeven values represent month-end values for comparative purposes.

Credit Spreads vs. US Treasury Bonds[1]



→ Credit spreads (the spread above a comparable maturity Treasury) widened in September, finishing the quarter above long-term averages. Fears related to the impact of tighter monetary policy on economic growth was a key driver of wider spreads.

→ In the US, spreads for high yield increased sharply (5.5% versus 4.8%), with investment grade spreads rising more modestly (1.6% versus 1.4%). Emerging market spreads also increased (4.0% versus 3.6%).

[1] Sources: Bloomberg. Data is as of September 30, 2022. Average lines denote the average of the investment grade, high yield, and emerging market spread values from August 2000 to the recent month-end respectively.

Global Economic Outlook

In their October update, the IMF maintained lowered global growth forecasts, driven by the economic impacts of persistent inflation and corresponding tighter policy, as well as issues related to the war in Ukraine and the lingering pandemic.

→ The IMF forecasts global GDP growth to come in at 3.2% in 2022 (like the July estimate) and 2.7% in 2023 (0.2% below the prior estimate).

→ In advanced economies, GDP is projected to grow 2.4% in 2022 and 1.1% in 2023. The US saw another downgrade in the 2022 (1.6% versus 2.3%) forecast largely due to accelerated policy tightening, given persistently high inflation. The euro area saw an upgrade in expected growth (3.1% versus 2.6%) on substantial fiscal stimulus in 2022 but a downgrade in 2023 (0.5% versus 1.2%) as rising energy prices weigh on the region that is a net importer of energy. The Japanese economy is expected to grow 1.7% this year and 1.6% in 2023.

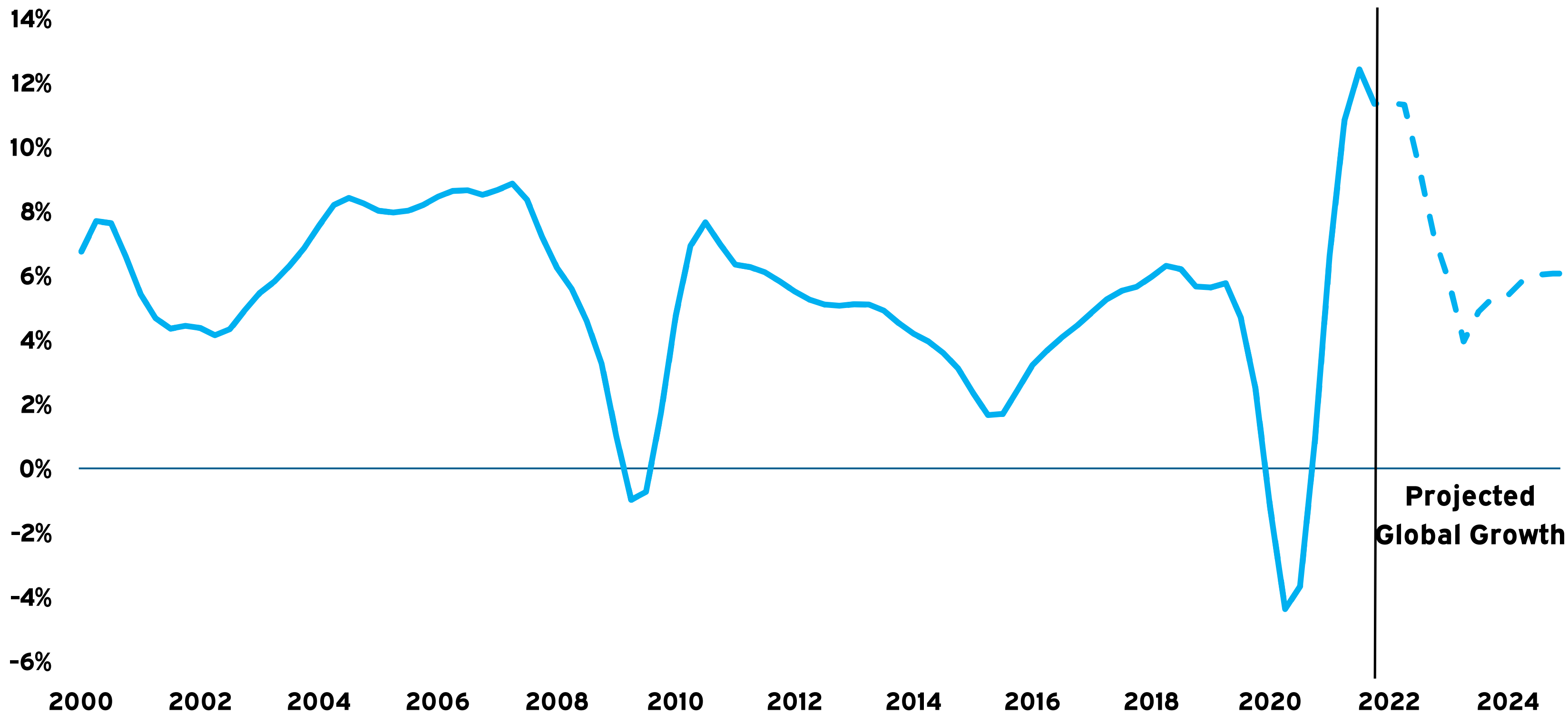
→ Growth projections for emerging markets are higher than developed markets, at 3.7% in 2022 and 2023. China's growth was downgraded for 2022 (3.2% versus 3.3%) and 2023 (4.4% versus 4.6%) given tight COVID-19 restrictions and continued property sector problems.

→ The global inflation forecast was significantly increased for 2022 (8.8% versus 7.4%).

	Real GDP (%)[1]			Inflation (%)[1]		
	IMF 2022 Forecast	IMF 2023 Forecast	Actual 10 Year Average	IMF 2022 Forecast	IMF 2023 Forecast	Actual 10 Year Average
World	3.2	2.7	3.2	8.8	6.5	3.6
Advanced Economies	2.4	1.1	1.6	7.2	4.3	1.6
US	1.6	1.0	2.1	8.1	3.5	2.0
Euro Area	3.1	0.5	1.0	8.3	5.7	1.3
Japan	1.7	1.6	0.8	2.0	1.4	0.4
Emerging Economies	3.7	3.7	4.4	9.9	8.1	5.3
China	3.2	4.4	7.3	2.2	2.2	2.4

[1] Source: IMF World Economic Outlook. Real GDP and Inflation forecasts from October 2022 Update. "Actual 10 Year Average" represents data from 2012 to 2021.

Global Nominal Gross Domestic Product (GDP) Growth[1]

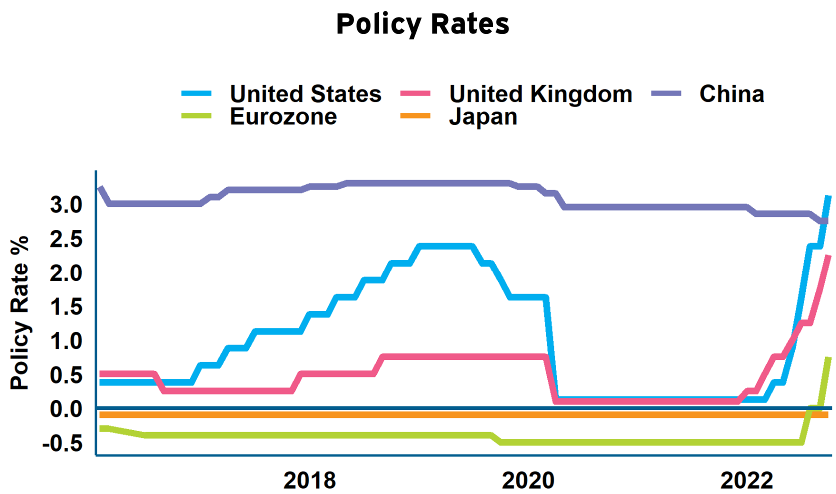


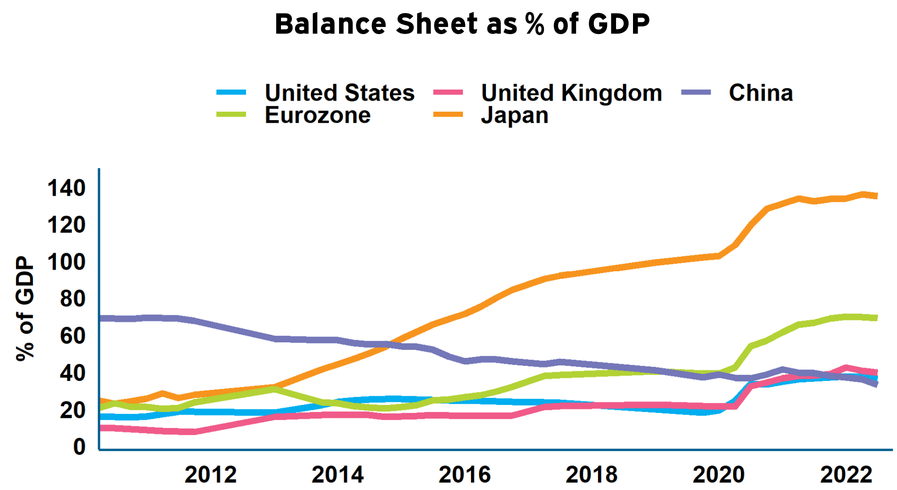
→ Global economies are expected to slow in 2022 compared to 2021, with risks of recession increasing given persistently high inflation and related tighter monetary policy.

→ The delicate balancing act of central banks trying to reduce inflation without dramatically impacting growth will remain key.

[1] Source: Oxford Economics (World GDP, US$ prices & PPP exchange rate, nominal, % change YoY). Updated September 2022. Nominal expectations for GDP remain much higher than real GDP expectations given the elevated inflation levels.

Central Bank Response[1]





→ After global central banks took extraordinary action to support economies during the pandemic, including policy rate cuts and emergency stimulus through quantitative easing (QE), many are now aggressively reducing support in the face of high inflation.

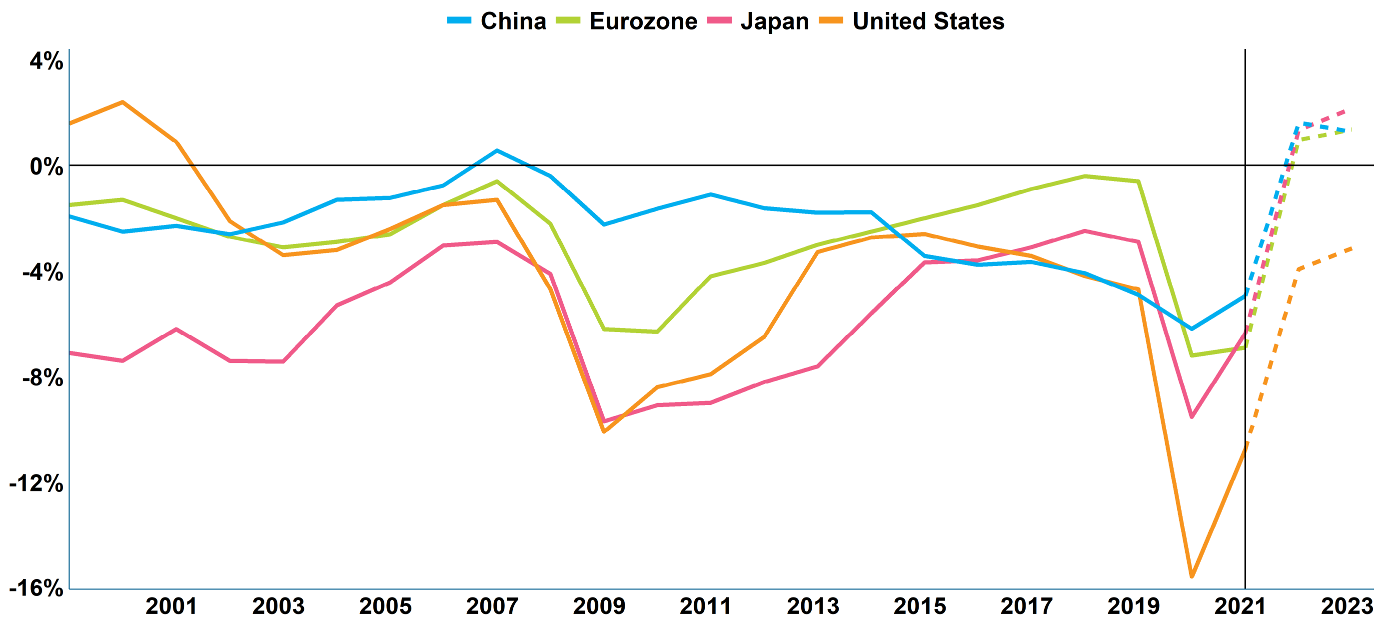
→ The pace of withdrawing support varies across central banks with the US taking a more aggressive approach. The UK is also aggressively increasing rates, but recent talks of easing fiscal policy (this ultimately did not happen) created significant volatility that spilled over into other markets.

→ The one notable central bank outlier is China, where the central bank has lowered rates and reserve requirements in response to slowing growth.

→ The risk remains for a policy error, particularly overtightening, as record inflation, the war in Ukraine, and a tough COVID-19 policy in China could suppress global growth.

[1] Source: Bloomberg. Policy rate data is as of September 30, 2022. China policy rate is defined as the medium-term lending facility 1 year interest rate. Balance sheet as % of GDP is based on quarterly data and is as of June 30, 2022.

Budget Surplus / Deficit as a Percentage of GDP[1]



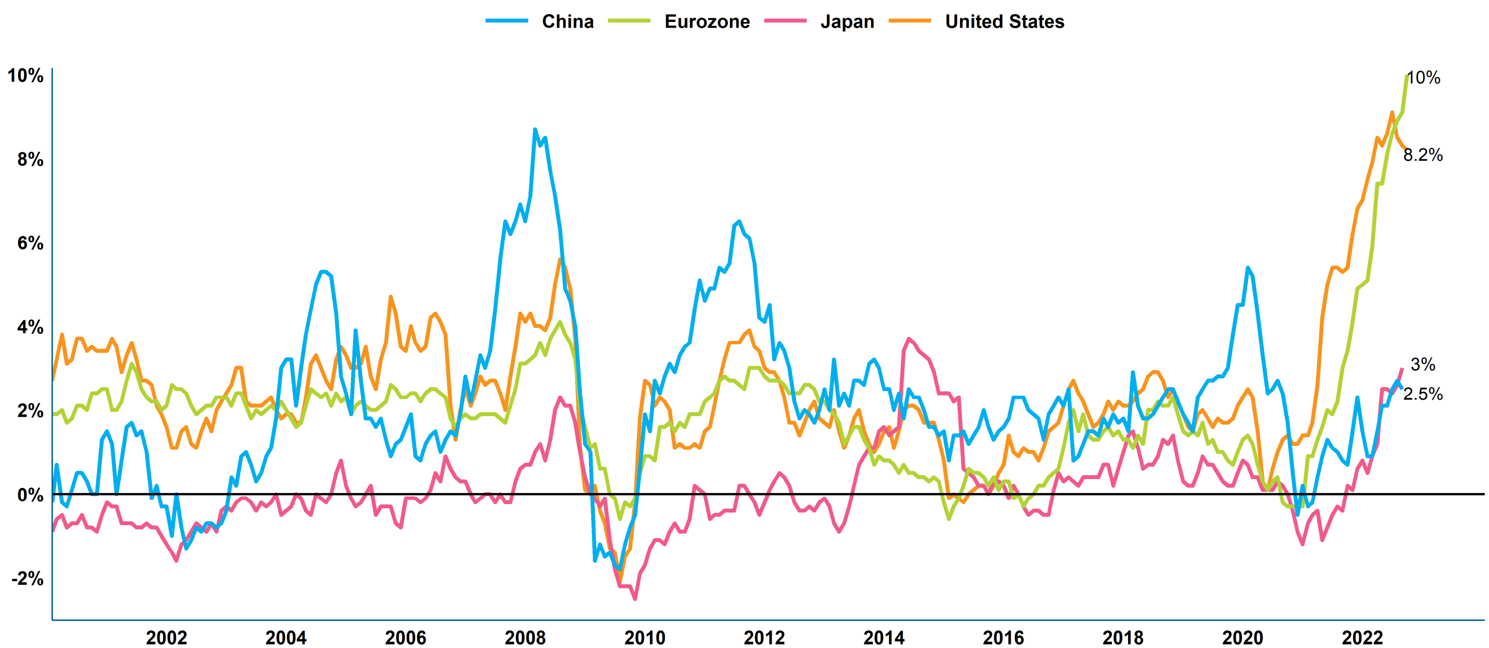
→ Budget deficits as a percentage of GDP drastically increased for major world economies, particularly the US, due to massive fiscal support and the severe economic contraction's effect on tax revenue in 2020 and 2021.

→ As fiscal stimulus programs end, and economic recoveries continue, deficits should improve.

→ Questions remain about how some countries will respond fiscally as inflation, particularly energy prices, weigh on consumers. Policies that undermine central banks' efforts to fight inflation could lead to additional market volatility like was seen in the UK.

[1] Source: Bloomberg. Data is as of September 30, 2022. Projections via IMF Forecasts from October 2022 Report. Dotted lines represent 2022 and 2023 forecasts.

Inflation (CPI Trailing Twelve Months)[1]

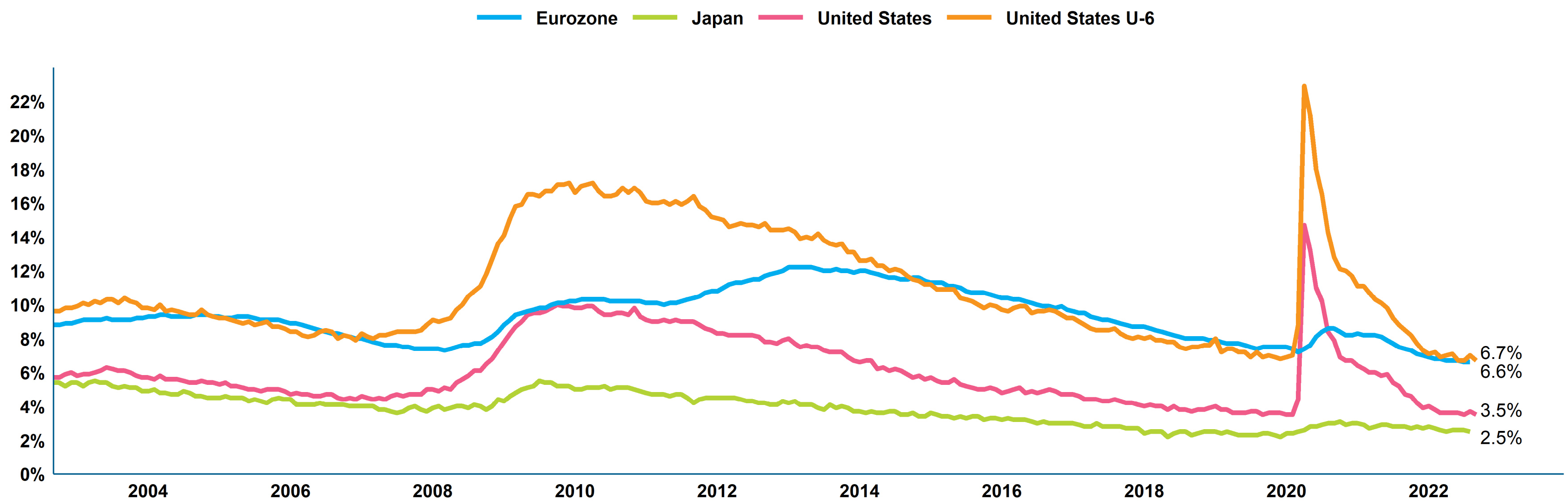


→ Inflation increased dramatically from the lows of the pandemic, particularly in the US and Eurozone where it has reached levels not seen in many decades.

→ Supply issues related to the pandemic, record monetary and fiscal stimulus, strict COVID-19 restrictions in China, and higher prices in many commodities driven by the war in Ukraine have been key global drivers of inflation.

[1] Source: Bloomberg. Data is as of September 2022. The most recent data for Japan and China is as of August 31, 2022.

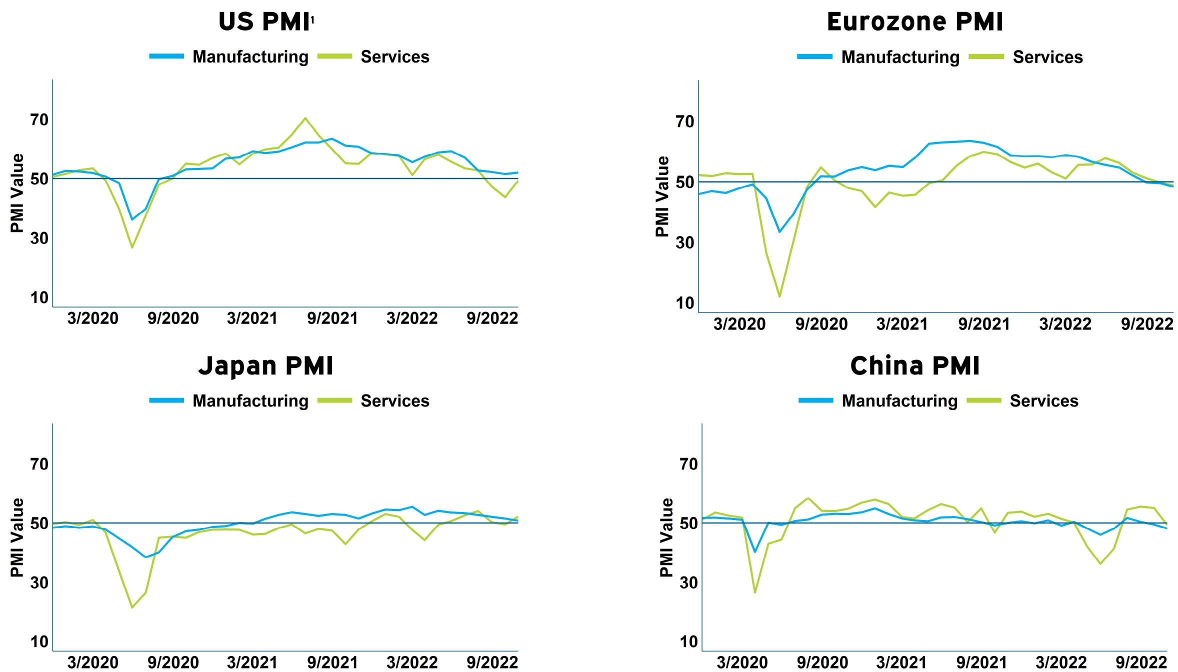
Unemployment[1]



- → As economies have largely reopened, helped by vaccines for the virus, improvements have been seen in the labor market.
- → Despite slowing growth and high inflation the US labor market remains a bright spot. Unemployment in the US, which experienced the steepest rise from the pandemic, declined to pre-pandemic (3.5%) levels. The broader measure (U-6) that includes discouraged and underemployed workers declined but is much higher at 6.7%.
- → The strong labor market and higher wages, although beneficial for workers, motivates the Fed's efforts to fight inflation, likely leading to eventually higher unemployment.

[1] Source: Bloomberg. Data is as of September 2022, for the US. The most recent data for Eurozone and Japanese unemployment is as of August 31, 2022.

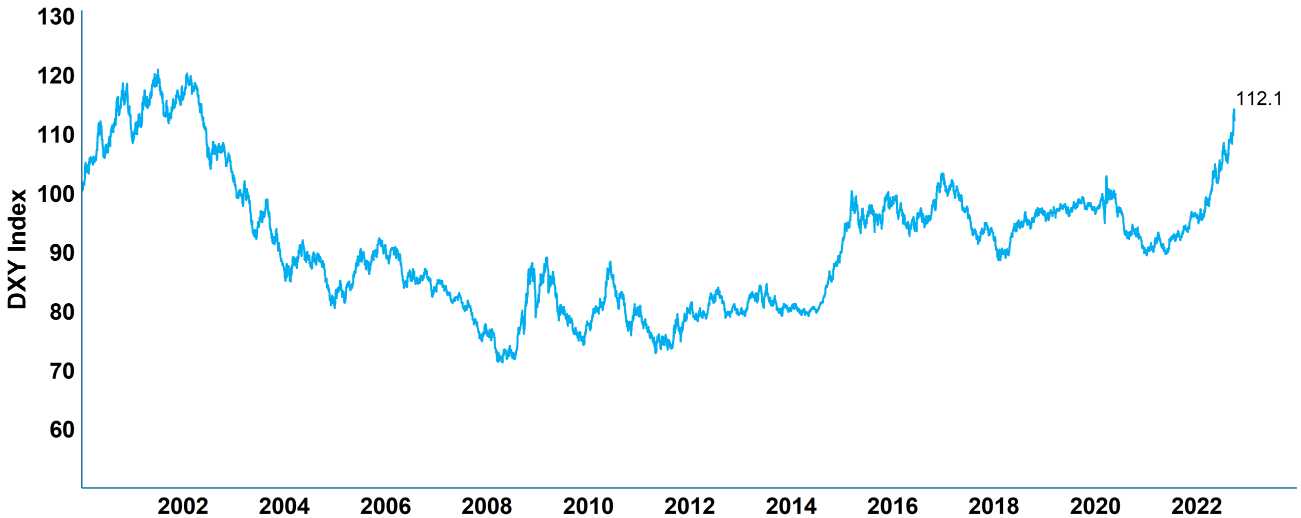
Global PMIs



- → After improvements from the lows of the pandemic, Purchasing Managers Indices (PMI), based on surveys of private sector companies, have largely experienced downward pressure recently.
- → Service sector PMIs, except Japan, are all in contraction territory. The US service sector recovered somewhat but remains in negative territory due to weak demand, a sharp decline in new orders, and softening employment.
- → Manufacturing PMIs are also slowing across China and developed markets given declines in demand and inflationary pressures with the Eurozone and China in contraction territory.

[1] Source: Bloomberg. US Markit Services and Manufacturing PMI, Caixin Services and Manufacturing PMI, Eurozone Markit Services and Manufacturing PMI, Jibun Bank Services and Manufacturing PMI. Data is as of September 2022. Readings below 50 represent economic contractions.

US Dollar versus Broad Currencies[1]



→ The US dollar continued to strengthen in September, increasing 7.1% overall for the quarter and reaching levels not seen in two decades.

→ The increased pace of policy tightening, stronger relative growth, and safe-haven flows all contributed to the dollar's strength this year.

→ The euro, yen, pound, and yuan have all experienced significant declines versus the dollar this year, adding to inflation.

[1] Source: Bloomberg. Data as of September 30, 2022.

Summary

Key Trends in 2022:

→ The impacts of record high inflation will remain key, with market volatility likely to remain high.

→ The pace of monetary tightening globally will be faster than previously expected, with the risk of overtightening.

→ Expect growth to slow globally in 2022 and into 2023 to the long-term trend or below. Inflation, monetary policy, and the war will all be key.

→ In the US the end of many fiscal programs is expected to put the burden of continued growth on consumers. Higher energy and food prices will depress consumers' spending in other areas.

→ Valuations have significantly declined in the US to below long-term averages.

→ Outside the US, equity valuations remain lower in both emerging and developed markets, but major risks remain, including continued strength in the US dollar, higher inflation particularly weighing on Europe, and China maintaining its restrictive COVID-19 policies.

Appendices

Meketa Investment Group
Corporate Update

→ Staff of 250, including 161 investment professionals and 48 CFA Charterholders

→ More than 240 clients, with over 400 funds throughout the United States

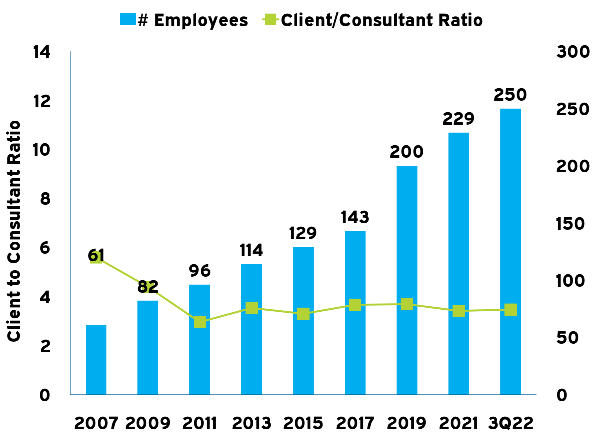
→ Significant investment in staff and resources

→ Offices in Boston, Chicago, Miami, New York, Portland (OR), San Diego, and London

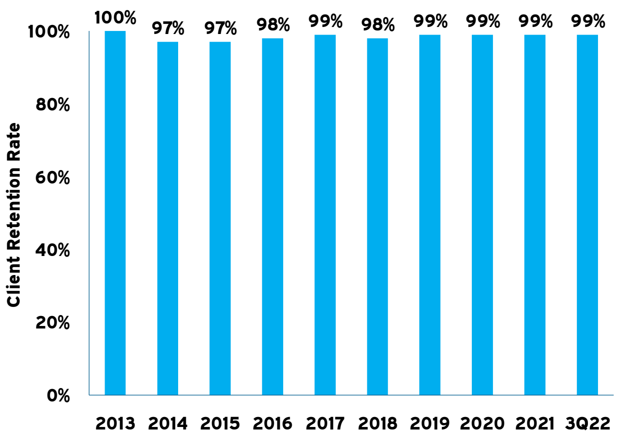
→ We advise on $1.8 trillion in client assets

- Over $150 billion in assets committed to alternative investments
  - Private Equity
  - Infrastructure
  - Natural Resources
  - Real Estate
  - Hedge Funds
  - Commodities

Client to Consultant Ratio[1]



Client Retention Rate[2]



Meketa Investment Group is proud to work for over 5 million American families everyday.

[1] On March 15, 2019, 31 employees joined the firm as part of the merger of Meketa Investment Group and Pension Consulting Alliance.
[2] Client Retention Rate is one minus the number of clients lost divided by the number of clients at prior year-end.

Asset Classes Followed Intensively by Meketa Investment Group

Domestic Equities	International Equities	Private Equity	Real Assets	Fixed Income	Hedge Funds
→ Passive	→ Large Cap Developed	→ Buyouts	→ Public REITs	→ Short-Term	→ Long/Short Equity
→ Enhanced Index	→ Small Cap Developed	→ Venture Capital	→ Core Real Estate	→ Core	→ Event Driven
→ Large Cap	→ Emerging Markets	→ Private Debt	→ Value Added Real Estate	→ Core Plus	→ Relative Value
→ Midcap	→ Frontier Markets	→ Special Situations	→ Opportunistic Real Estate	→ TIPS	→ Fixed Income Arbitrage
→ Small Cap		→ Secondaries	→ Infrastructure	→ High Yield	→ Multi Strategy
→ Microcap		→ Fund of Funds	→ Timber	→ Bank Loans	→ Market Neutral
→ 130/30			→ Natural Resources	→ Distressed	→ Global Macro
			→ Commodities	→ Global	→ Fund of Funds
				→ Emerging Markets	→ Portable Alpha

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Credit Risk: Refers to the risk that the issuer of a fixed income security may default (i.e., the issuer will be unable to make timely principal and/or interest payments on the security.)

Duration: Measure of the sensitivity of the price of a bond to a change in its yield to maturity. Duration summarizes, in a single number, the characteristics that cause bond prices to change in response to a change in interest rates. For example, the price of a bond with a duration of three years will rise by approximately 3% for each 1% decrease in its yield to maturity. Conversely, the price will decrease 3% for each 1% increase in the bond's yield. Price changes for two different bonds can be compared using duration. A bond with a duration of six years will exhibit twice the percentage price change of a bond with a three-year duration. The actual calculation of a bond's duration is somewhat complicated, but the idea behind the calculation is straightforward. The first step is to measure the time interval until receipt for each cash flow (coupon and principal payments) from a bond. The second step is to compute a weighted average of these time intervals. Each time interval is measured by the present value of that cash flow. This weighted average is the duration of the bond measured in years.

Information Ratio: This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

Jensen's Alpha: A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk. Portfolio Return- [Risk Free Rate+Beta*(market return-Risk Free Rate)].

Market Capitalization: For a firm, market capitalization is the total market value of outstanding common stock. For a portfolio, market capitalization is the sum of the capitalization of each company weighted by the ratio of holdings in that company to total portfolio holdings; thus it is a weighted-average capitalization. Meketa Investment Group considers the largest 65% of the broad domestic equity market as large capitalization, the next 25% of the market as medium capitalization, and the smallest 10% of stocks as small capitalization.

Market Weighted: Stocks in many indices are weighted based on the total market capitalization of the issue. Thus, the individual returns of higher market-capitalization issues will more heavily influence an index's return than the returns of the smaller market-capitalization issues in the index.

Maturity: The date on which a loan, bond, mortgage, or other debt/security becomes due and is to be paid off.

Prepayment Risk: The risk that prepayments will increase (homeowners will prepay all or part of their mortgage) when mortgage interest rates decline; hence, investors' monies will be returned to them in a lower interest rate environment. Also, the risk that prepayments will slow down when mortgage interest rates rise; hence, investors will not have as much money as previously anticipated in a higher interest rate environment. A prepayment is any payment in excess of the scheduled mortgage payment.

Price-Book Value (P/B) Ratio: The current market price of a stock divided by its book value per share. Meketa Investment Group calculates P/B as the current price divided by Compustat's quarterly common equity. Common equity includes common stock, capital surplus, retained earnings, and treasury stock adjusted for both common and nonredeemable preferred stock. Similar to high P/E stocks, stocks with high P/B's tend to be riskier investments.

Price-Earnings (P/E) Ratio: A stock's market price divided by its current or estimated future earnings. Lower P/E ratios often characterize stocks in low growth or mature industries, stocks in groups that have fallen out of favor, or stocks of established blue chip companies with long records of stable earnings and regular dividends. Sometimes a company that has good fundamentals may be viewed unfavorably by the market if it is an industry that is temporarily out of favor. Or a business may have experienced financial problems causing investors to be skeptical about is future. Either of these situations would result in lower relative P/E ratios. Some stocks exhibit above-average sales and earnings growth or expectations for above average growth. Consequently, investors are willing to pay more for these companies' earnings, which results in elevated P/E ratios. In other words, investors will pay more for shares of companies whose profits, in their opinion, are expected to increase faster than average. Because future events are in no way assured, high P/E stocks tend to be riskier and more volatile investments. Meketa Investment Group calculates P/E as the current price divided by the I/B/E/S consensus of twelve-month forecast earnings per share.

Quality Rating: The rank assigned a security by such rating services as Fitch, Moody's, and Standard & Poor's. The rating may be determined by such factors as (1) the likelihood of fulfillment of dividend, income, and principal payment of obligations; (2) the nature and provisions of the issue; and (3) the security's relative position in the event of liquidation of the company. Bonds assigned the top four grades (AAA, AA, A, BBB) are considered investment grade because they are eligible bank investments as determined by the controller of the currency.

Sharpe Ratio: A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

STIF Account: Short-term investment fund at a custodian bank that invests in cash-equivalent instruments. It is generally used to safely invest the excess cash held by portfolio managers.

Standard Deviation: A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

Style: The description of the type of approach and strategy utilized by an investment manager to manage funds. For example, the style for equities is determined by portfolio characteristics such as price-to-book value, price-to-earnings ratio, and dividend yield. Equity styles include growth, value, and core.

Tracking Error: A divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark, as defined by the difference in standard deviation.

Yield to Maturity: The yield, or return, provided by a bond to its maturity date; determined by a mathematical process, usually requiring the use of a "basis book." For example, a 5% bond pays $5 a year interest on each $100 par value. To figure its current yield, divide $5 by $95—the market price of the bond—and you get 5.26%. Assume that the same bond is due to mature in five years. On the maturity date, the issuer is pledged to pay $100 for the bond that can be bought now for $95. In other words, the bond is selling at a discount of 5% below par value. To figure yield to maturity, a simple and approximate method is to divide 5% by the five years to maturity, which equals 1% pro rata yearly. Add that 1% to the 5.26% current yield, and the yield to maturity is roughly 6.26%.

$$\frac{5\%\ \text{(discount)}}{5\ \text{(yrs. to maturity)}} = \begin{matrix}1\%\ \text{pro rata, plus} \\ 5.26\%\ \text{(current yield)}\end{matrix} = 6.26\%\ \text{(yield to maturity)}$$

Yield to Worst: The lowest potential yield that can be received on a bond without the issuer actually defaulting. The yield to worst is calculated by making worst-case scenario assumptions on the issue by calculating the returns that would be received if provisions, including prepayment, call, or sinking fund, are used by the issuer.

NCREIF Property Index (NPI): Measures unleveraged investment performance of a very large pool of individual commercial real estate properties acquired in the private market by tax-exempt institutional investors for investment purposes only. The NPI index is capitalization-weighted for a quarterly time series composite total rate of return.

NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE): Measures the investment performance of 28 open-end commingled funds pursuing a core investment strategy that reflects funds' leverage and cash positions. The NFI-ODCE index is equal-weighted and is reported gross and net of fees for a quarterly time series composite total rate of return.

Sources: Investment Terminology, International Foundation of Employee Benefit Plans, 1999.
The Handbook of Fixed Income Securities, Fabozzi, Frank J., 1991

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Throughout this report, numbers may not sum due to rounding.

Returns for periods greater than one year are annualized throughout this report.

Values shown are in millions of dollars, unless noted otherwise.