



# ASSET ALLOCATION AND EMERGING MARKETS REVIEW

FIREFIGHTERS' RETIREMENT SYSTEM  
OF LOUISIANA

OCTOBER 12-13, 2022

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# INTRODUCTION



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# ASSET CLASS ASSUMPTIONS

## OVERVIEW

- **NEPC's capital market assumptions are available each quarter and currently reflect June 30, 2022 market data**
- **Higher interest rates lifted fixed income return assumptions and temper the outlook for equities given the expected valuation headwinds**
- **We encourage investors to hold a dedicated safe-haven fixed income allocation to be a source of portfolio liquidity and downside protection**
- **NEPC's expectation for inflation is elevated over the near-term, but the long-term outlook reflects a more subdued inflation environment**

# ASSET CLASS ASSUMPTIONS

## DEVELOPMENT

- **Assumptions are published for over 70 asset classes**
  - NEPC publishes return forecasts for 10-year and 30-year periods
- **Market data as of 06/30/2022**
  - Assumptions are developed with NEPC valuations models and rely on a building block approach
- **The 10-year return outlook is intended to support strategic asset allocation analysis**
- **30-year return assumptions are used for actuarial inputs and long-term planning**

## Asset Allocation Process

1. Finalize list of new asset classes
2. Calculate asset class volatility and correlation assumptions
3. Set model terminal values, growth, and inflation inputs
4. Model data updated at quarter-end
5. Review model outputs and produce asset class return assumptions
6. Assumptions released on the 15<sup>th</sup> calendar day after quarter-end

# ASSET CLASS BUILDING BLOCKS

## METHODOLOGY

- **Asset models reflect current and forecasted market data to inform expected returns**
- **Systematic inputs are paired with a long-term trend to terminal values**
- **Model inputs are aggregated to capture key return drivers for each asset class**
- **Building block inputs will differ across asset class categories**

**Illiquidity Premium**

**Valuation**

**Inflation**

**Real Growth**

**Yield**

# CORE ASSET CLASS RETURN ASSUMPTIONS

	Asset Class	06/30/22 10-Year Return	06/30/21 10-Year Return	Delta
	Cash	2.9%	1.2%	+1.7%
	U.S. Inflation	2.4%	2.3%	+0.1%
Equity	U.S. Large-Cap Equity	5.8%	4.9%	+0.9%
	Non-U.S. Developed Equity	6.4%	5.2%	+1.2%
	Emerging Market Equity	9.6%	7.4%	+2.2%
	Global Equity*	6.8%	5.6%	+1.2%
	Private Equity*	9.8%	8.9%	+0.9%
Fixed Income	U.S. Treasury Bond	3.2%	1.4%	+1.8%
	U.S. Aggregate Bond*	3.8%	1.9%	+1.9%
	U.S. TIPS	3.0%	1.5%	+1.5%
	U.S. High Yield Corporate Bond	6.9%	3.1%	+3.8%
	Private Debt*	8.0%	6.4%	+1.6%
Real Assets	Commodity Futures	3.4%	1.3%	+2.1%
	REIT	6.1%	4.7%	+1.4%
	Gold	4.4%	3.4%	+1.0%
	Real Estate - Core	4.4%	4.8%	-0.4%
	Private Real Assets - Infrastructure	6.1%	5.4%	+0.7%
Multi-Asset	60% S&P 500 & 40% U.S. Aggregate	5.3%	4.0%	+1.3%
	60% MSCI ACWI & 40% U.S. Agg.	6.0%	4.5%	+1.5%
	Hedge Fund*	6.0%	4.2%	+1.8%

\*Calculated as a blend of other asset classes



# FRS ASSET ALLOCATION REVIEW



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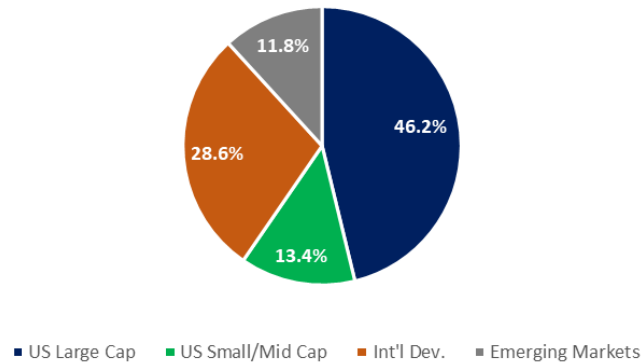
# JUNE 2022 FRS ASSET ALLOCATION REVIEW

Asset Class	Current Policy Target	Mix A	Mix B	Mix C
Large Cap Equity	20.5%	21.5%	22.0%	22.5%
Small/Mid Cap Equity	7.0%	7.0%	7.5%	8.0%
International Equity	11.5%	11.5%	11.5%	11.5%
Emerging Markets Equity	7.0%	6.0%	5.0%	4.0%
Global Equity	10.0%	10.0%	10.0%	10.0%
<b>Total Equities</b>	<b>56.0%</b>	<b>56.0%</b>	<b>56.0%</b>	<b>56.0%</b>
Core Bonds	18.0%	19.0%	20.0%	21.0%
US TIPS	3.0%	3.0%	3.0%	3.0%
Emerging Market Debt (Blended)	5.0%	4.0%	3.0%	2.0%
<b>Total Fixed Income</b>	<b>26.0%</b>	<b>26.0%</b>	<b>26.0%</b>	<b>26.0%</b>
Private Equity/Private Debt	9.0%	9.0%	9.0%	9.0%
Core Real Estate	6.0%	6.0%	6.0%	6.0%
Private Real Assets (Infrastructure)	3.0%	3.0%	3.0%	3.0%
<b>Total Alternative Assets</b>	<b>18.0%</b>	<b>18.0%</b>	<b>18.0%</b>	<b>18.0%</b>
<b>10 Year Expected Return</b>	<b>6.69%</b>	<b>6.61%</b>	<b>6.50%</b>	<b>6.47%</b>
<b>30 Year Expected Return</b>	<b>7.26%</b>	<b>7.21%</b>	<b>7.16%</b>	<b>7.11%</b>
<b>Standard Deviation</b>	<b>13.13%</b>	<b>12.95%</b>	<b>12.79%</b>	<b>12.64%</b>

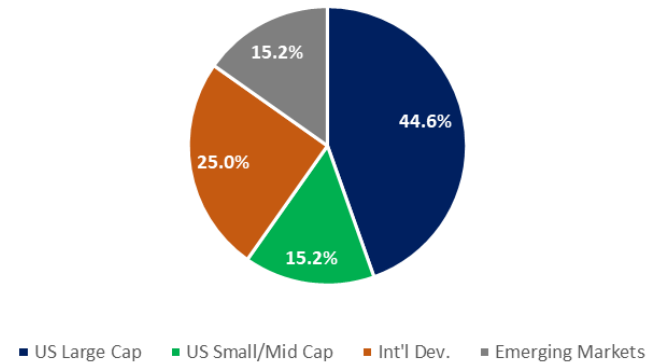


# JUNE 2022 FRS ASSET ALLOCATION REVIEW

Market Weight (6/30/2022)

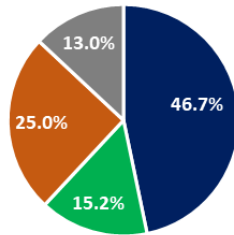


Current Policy



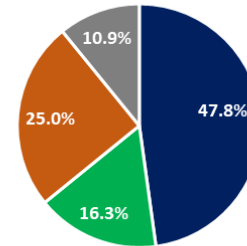
# JUNE 2022 FRS ASSET ALLOCATION REVIEW

Mix A



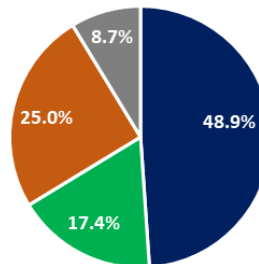
■ US Large Cap ■ US Small/Mid Cap ■ Int'l Dev. ■ Emerging Markets

Mix B



■ US Large Cap ■ US Small/Mid Cap ■ Int'l Dev. ■ Emerging Markets

Mix C



■ US Large Cap ■ US Small/Mid Cap ■ Int'l Dev. ■ Emerging Markets

# ASSET ALLOCATION 3/2013

	Current Allocation*	Target Allocation	Alt. Mix A	Alt. Mix B	Alt. Mix C	Alt. Mix D	Alt. Mix E
Large Cap Equities	15%	20%	10%	15%	15%	14%	13%
Small/Mid Cap Equities	14%	5%	5%	8%	8%	8%	8%
Int'l Equities	6%	0%	15%	11%	11%	11%	9%
Emerging Int'l Equities	0%	0%	5%	5%	5%	5%	5%
Global Equity	13%	20%	10%	10%	10%	8%	6%
<b>Total Equity</b>	<b>49%</b>	<b>45%</b>	<b>45%</b>	<b>49%</b>	<b>49%</b>	<b>46%</b>	<b>41%</b>
Core Bonds	19%	0%	15%	15%	15%	15%	15%
IG Corp Credit	0%	5%	0%	0%	0%	0%	0%
High-Yield Bonds	0%	10%	0%	0%	0%	0%	0%
Global Bonds	0%	3%	0%	0%	0%	0%	0%
EMD (Local Currency)	0%	5%	5%	5%	5%	5%	5%
<b>Total Fixed Income</b>	<b>19%</b>	<b>23%</b>	<b>20%</b>	<b>20%</b>	<b>20%</b>	<b>20%</b>	<b>20%</b>
Real Assets (Liquid)	0%	0%	5%	0%	0%	0%	0%
Commodities	0%	3%	0%	0%	0%	0%	0%
<b>Total Real Assets</b>	<b>0%</b>	<b>3%</b>	<b>5%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>
Private Equity	11%	10%	12%	12%	12%	12%	12%
Real Estate	7%	8%	7%	7%	7%	7%	7%
Hedge Funds	13%	13%	11%	7%	7%	5%	0%
<b>Total Alternatives</b>	<b>31%</b>	<b>30%</b>	<b>30%</b>	<b>26%</b>	<b>26%</b>	<b>24%</b>	<b>19%</b>
Global Tactical Asset Allocation	0%	0%	0%	5%	0%	5%	10%
Risk Parity	0%	0%	0%	0%	5%	5%	10%
<b>Total GAA</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>5%</b>	<b>5%</b>	<b>10%</b>	<b>20%</b>
<b>5-7 Year Expected Return</b>	<b>6.8%</b>	<b>7.1%</b>	<b>7.2%</b>	<b>7.2%</b>	<b>7.3%</b>	<b>7.2%</b>	<b>7.2%</b>
<b>Standard Dev of Asset Return</b>	<b>12.9%</b>	<b>13.4%</b>	<b>13.2%</b>	<b>13.6%</b>	<b>13.7%</b>	<b>13.5%</b>	<b>13.4%</b>
<b>Sharpe Ratio</b>	<b>0.47</b>	<b>0.47</b>	<b>0.49</b>	<b>0.47</b>	<b>0.48</b>	<b>0.48</b>	<b>0.48</b>
<b>30-Year Expected Return</b>	<b>7.9%</b>	<b>7.9%</b>	<b>8.2%</b>	<b>8.2%</b>	<b>8.2%</b>	<b>8.1%</b>	<b>8.0%</b>

# ASSET ALLOCATION 3/2013

5-7 Year Geometric Expected Return			
Asset Class	2012	2013	2013-2012
Cash	1.25%	0.75%	-0.50%
Treasuries	1.50%	1.00%	-0.50%
IG Corp Credit	4.50%	3.00%	-1.50%
MBS	3.25%	2.50%	-0.75%
<i>Core Bonds*</i>	<i>2.88%</i>	<i>2.04%</i>	<i>-0.84%</i>
TIPS	1.75%	1.50%	-0.25%
High-Yield Bonds	7.00%	5.00%	-2.00%
Bank Loans	5.00%	5.00%	
Global Bonds (Unhedged)	1.25%	0.75%	-0.50%
Global Bonds (Hedged)	1.49%	0.93%	-0.56%
EMD External	5.75%	4.00%	-1.75%
EMD Local Currency	6.75%	5.00%	-1.75%
Large Cap Equities	7.25%	6.75%	-0.50%
Small/Mid Cap Equities	7.50%	7.00%	-0.50%
Int'l Equities (Unhedged)	7.75%	7.75%	
Int'l Equities (Hedged)	8.00%	8.00%	
Emerging Int'l Equities	9.75%	9.75%	
Private Equity	9.75%	9.00%	-0.75%
Private Debt	9.50%	8.50%	-1.00%
Private Real Assets	N/A	8.00%	
Real Estate	6.00%	6.00%	
Commodities	4.75%	5.00%	0.25%
Hedge Funds Low Vol	5.50%	4.75%	-0.75%
Hedge Funds Mod Vol	7.25%	6.50%	-0.75%

# ASSET ALLOCATION 3/2013

30-Year Geometric Expected Return			
Asset Class	2012	2013	2013-2012
Cash	3.25%	3.00%	-0.25%
Treasuries	3.50%	3.00%	-0.50%
Credit	5.00%	4.25%	-0.75%
MBS	5.25%	4.50%	-0.75%
Core Bonds*	4.50%	3.84%	-0.66%
TIPS	3.75%	3.25%	-0.50%
High-Yield Bonds	6.25%	5.25%	-1.00%
Bank Loans	6.00%	5.50%	-0.50%
Global Bonds (Unhedged)	3.25%	2.50%	-0.75%
Global Bonds (Hedged)	3.48%	2.67%	-0.81%
EMD External	6.25%	6.00%	-0.25%
EMD Local Currency	7.00%	6.25%	-0.75%
Large Cap Equities	8.00%	8.00%	
Small/Mid Cap Equities	8.50%	8.25%	-0.25%
Int'l Equities (Unhedged)	8.25%	8.25%	
Int'l Equities (Hedged)	8.50%	8.50%	
Emerging Int'l Equities	9.50%	9.50%	
Private Equity	10.00%	10.00%	
Private Debt	8.00%	8.00%	
Real Estate	6.00%	6.00%	
Commodities	5.25%	5.50%	0.25%
Hedge Funds Low Vol	6.25%	5.75%	-0.50%
Hedge Funds Mod Vol	8.00%	7.50%	-0.50%

# ASSET ALLOCATION 3/2013

Volatility			
Asset Class	2012	2013	2013-2012
Cash	1.50%	1.00%	-0.50%
Treasuries	6.00%	6.00%	
IG Corp Credit	7.00%	7.50%	0.50%
MBS	9.00%	7.00%	-2.00%
Core Bonds*	7.00%	6.31%	-0.69%
TIPS	7.50%	7.50%	
High-Yield Bonds	13.00%	13.00%	
Bank Loans	6.50%	6.50%	
Global Bonds (Unhedged)	10.00%	9.00%	-1.00%
Global Bonds (Hedged)	5.50%	5.00%	-0.50%
EMD External	13.00%	12.00%	-1.00%
EMD Local Currency	15.00%	14.00%	-1.00%
Large Cap Equities	18.00%	18.00%	
Small/Mid Cap Equities	22.00%	21.00%	-1.00%
Int'l Equities (Unhedged)	21.00%	21.00%	
Int'l Equities (Hedged)	19.00%	19.00%	
Emerging Int'l Equities	27.00%	26.00%	-1.00%
Private Equity	28.00%	27.00%	-1.00%
Private Debt	19.00%	19.00%	
Private Real Assets	N/A	24.00%	
Real Estate	15.00%	17.00%	2.00%
Commodities	18.00%	18.00%	
Hedge Funds Low Vol	7.00%	7.00%	
Hedge Funds Mod Vol	12.00%	12.00%	



# EMERGING MARKETS REVIEW



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# ANNUALIZED RETURNS

	1 Year	Rank	3 Year	Rank	5 Year	Rank	7 Year	Rank	10 Year	Rank	SI - Invesco	Rank	SI- Acadian	Rank
<b>Emerging Markets Equity</b>														
Acadian EM Equity	<b>-22.2%</b>	28	2.7%	31	2.6%	57	3.7%	54	4.5%	46	1.9%	59	7.0%	23
Invesco EM Equity	<b>-34.3%</b>	93	<b>-3.4%</b>	94	1.3%	81	2.6%	79	3.7%	72	3.4%	17	--	--
MSCI Emerging Markets Index	<b>-25.3%</b>	44	0.6%	60	2.2%	67	2.8%	76	3.1%	82	0.9%	85	--	--

Performance as of as of June 30, 2022

Source: eVestment (Global Emerging Markets All Cap Equity Universe rankings)

Invesco strategy inception: 1/1/2008

Acadian strategy inception: 1/1/1994



# CALENDAR YEAR RETURNS

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>Emerging Markets Equity</b>											
<b>Acadian EM Equity</b>	<b>-6.6%</b>	<b>-5.1%</b>	<b>11.2%</b>	<b>-11.9%</b>	<b>-22.3%</b>	<b>65.2%</b>	<b>-25.2%</b>	<b>5.7%</b>	<b>-2.3%</b>	<b>75.9%</b>	<b>33.7%</b>
<b>Rank</b>	<b>42</b>	<b>42</b>	<b>73</b>	<b>91</b>	<b>34</b>	<b>72</b>	<b>31</b>	<b>31</b>	<b>43</b>	<b>6</b>	<b>16</b>
<b>Invesco EM Equity</b>	--	--	--	--	--	--	--	--	--	--	--
<b>Rank</b>	--	--	--	--	--	--	--	--	--	--	--
<b>MSCI Emerging Markets Index</b>	<b>-7.3%</b>	<b>-5.2%</b>	<b>6.0%</b>	<b>-11.6%</b>	<b>-25.3%</b>	<b>66.4%</b>	<b>-30.6%</b>	<b>-2.4%</b>	<b>-6.0%</b>	<b>56.0%</b>	<b>26.0%</b>

Source: eVestment (Global Emerging Markets All Cap Equity Universe rankings)  
 MSCI performance is MSCI EM-GD from 1994 – 1998 and MSCI EM-ND from 1998-2022

# CALENDAR YEAR RETURNS

	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>Emerging Markets Equity</b>									
Acadian EM Equity	35.3%	33.1%	44.3%	-55.9%	78.4%	23.0%	-17.8%	23.9%	-1.1%
Rank	58	58	28	67	64	37	47	18	67
Invesco EM Equity	--	--	--	-47.3%	84.6%	28.7%	-17.0%	22.5%	9.8%
Rank	--	--	--	19	38	8	37	27	9
MSCI Emerging Markets Index	34.5%	32.6%	39.8%	-53.2%	79.0%	19.2%	-18.2%	18.6%	-2.3%

Source: eVestment (Global Emerging Markets All Cap Equity Universe rankings)  
 MSCI performance is MSCI EM-GD from 1994 – 1998 and MSCI EM-ND from 1998-2022



# CALENDAR YEAR RETURNS

	2014	2015	2016	2017	2018	2019	2020	2021	YTD 2022
<b>Emerging Markets Equity</b>									
<b>Acadian EM Equity*</b>	1.6%	-18.1%	13.0%	37.8%	-19.0%	16.9%	11.6%	7.9%	-17.8%
<b>Rank</b>	35	92	23	44	80	69	76	24	41
<b>Invesco EM Equity*</b>	-5.2%	-13.7%	7.4%	35.3%	-11.8%	24.8%	17.7%	-7.1%	-25.3%
<b>Rank</b>	84	59	56	63	15	22	53	82	85
<b>MSCI Emerging Markets Index</b>	-2.2%	-14.9%	11.2%	37.3%	-14.6%	18.4%	18.3%	-2.5%	-17.6%

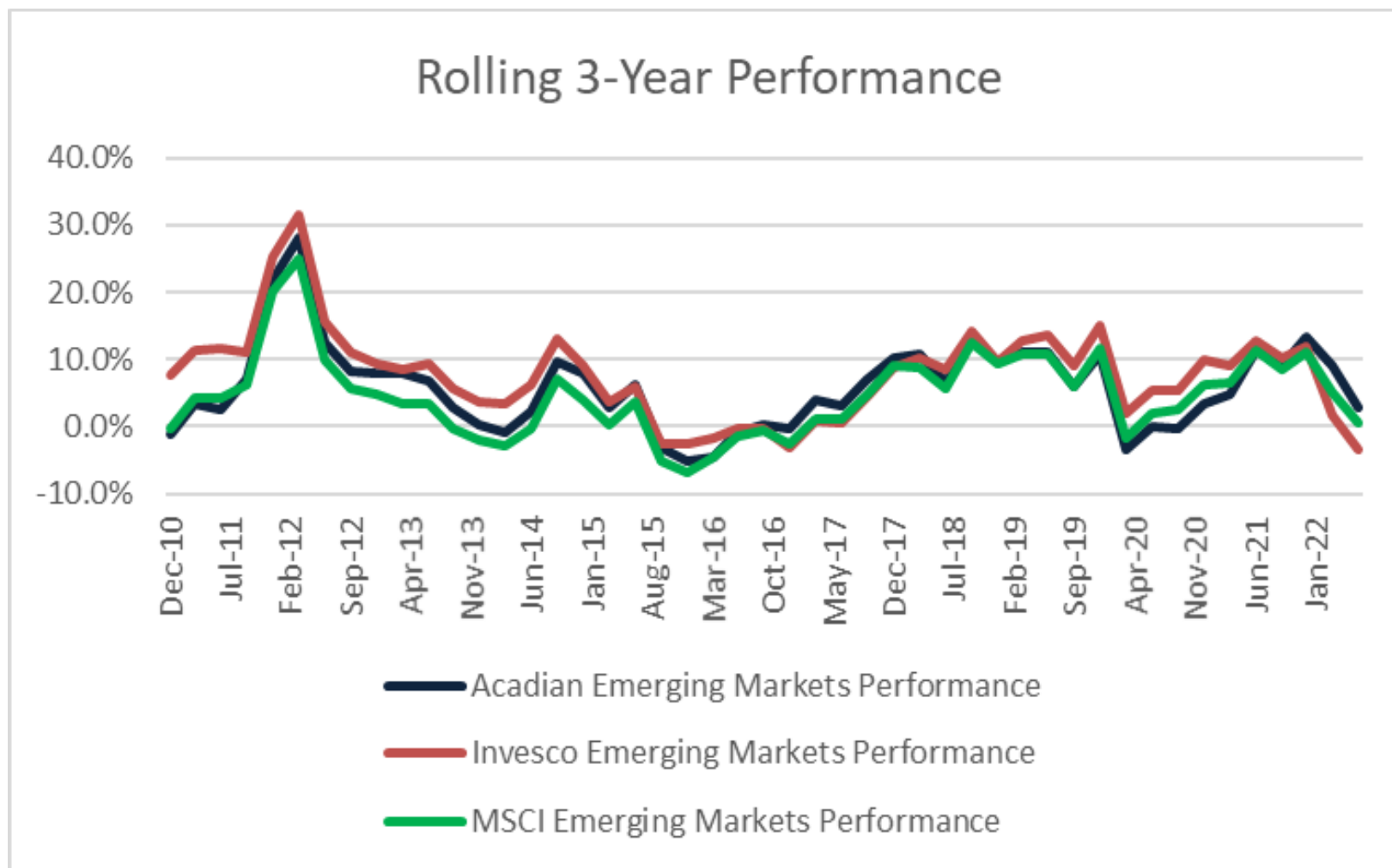
YTD 2022 returns are as of 6/30/2022

\*FRS account performance

Universe rankings based on eV Emg Mkts Equity Net Rank

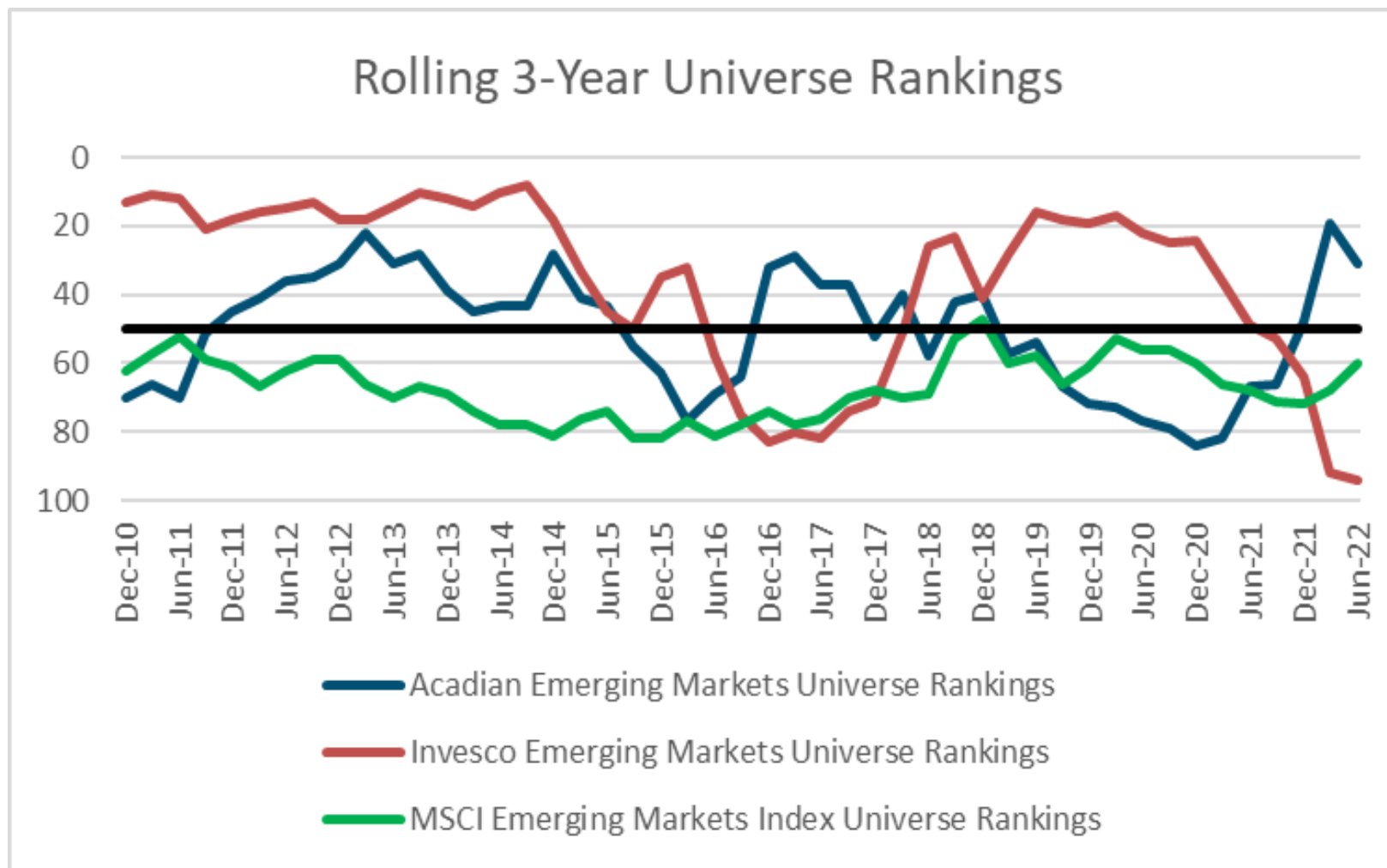


# ROLLING PERIOD RETURNS





# ROLLING PERIOD RETURNS

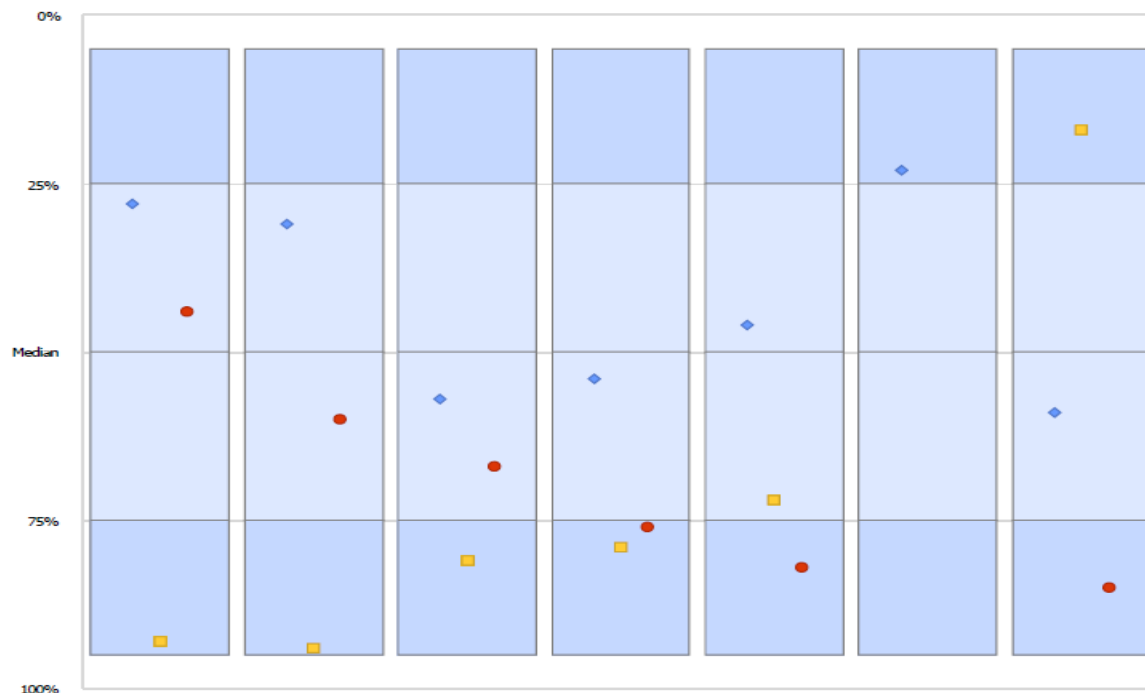


Source: eVestment (Global Emerging Markets All Cap Equity Universe rankings)



# TRAILING PERIOD RETURNS

- ◆ Acadian Asset Management LLC: Emerging Markets Equity
- Invesco, Ltd: Emerging Markets Equity
- MSCI Index: MSCI EM-ND



Universe: eVestment Global Emerging Mkts All Cap Equity (Percentile)

	VT	RM	1 Year		3 Years		5 Years		7 Years		10 Years		Acadian SI 28.5 Years <sup>1</sup>		Invesco SI 14.5 Years	
				Rk		Rk		Rk		Rk		Rk		Rk		Rk
5th percentile			-12.07		6.31		7.08		6.87		7.28		7.42		4.60	
25th percentile			-21.74		3.32		4.18		5.08		5.41		6.94		2.97	
Median			-26.28		1.18		2.95		3.84		4.37		6.33		2.22	
75th percentile			-30.15		-0.58		1.78		2.88		3.50		5.82		1.25	
95th percentile			-34.98		-3.64		-0.55		1.21		1.96		5.32		-0.04	
# of Observations			326		290		256		227		181		14		96	
◆ Acadian Asset Management LLC	SA	GF	-22.21	28	2.67	31	2.60	57	3.75	54	4.47	46	7.04	23	1.93	59
■ Invesco, Ltd	SA	GF	-34.30	93	-3.36	94	1.31	81	2.64	79	3.66	72	---	---	3.36	17
● MSCI Index	IX	IX	-25.28	44	0.57	60	2.18	67	2.79	76	3.06	82	---	---	0.88	85

Source: eVestment

# SIMULATED RISK PROFILE

	3 Year (Std. Dev.)	5 Year (Std. Dev.)	10 Year (Std. Dev.)	3 Year (Tracking Error)	5 Year (Tracking Error)	10 Year (Tracking Error)
<b>Emerging Markets Equity</b>						
100% Active (Current)*	18.1%	17.1%	--	3.7%	3.2%	--
75% Active / 25% Passive**	18.3%	17.2%	15.6%	2.7%	2.4%	2.1%
50% Active / 50% Passive**	18.2%	17.1%	15.6%	1.8%	1.6%	1.4%
25% Active / 75% Passive**	18.2%	17.1%	15.6%	0.9%	0.8%	0.7%

Performance as of as of June 30, 2022

\* FRS Emerging Markets Equity Composite

\*\*Source: eVestment



## TRAILING PERIOD RETURNS (NEPC)

	1 Year	Rank	3 Year	Rank	5 Year	Rank	7 Year	Rank	10 Year	Rank
<b>Emerging Markets Equity</b>										
Abrdn EM Equity	-30.6%	78	0.2%	65	1.9%	73	3.5%	61	3.4%	77
ABS EM Strategic	-25.5%	45	3.1%	27	3.9%	30	5.0%	29	6.5%	11
Acadian EM Equity	<b>-22.2%</b>	<b>28</b>	<b>2.7%</b>	<b>31</b>	<b>2.6%</b>	<b>57</b>	<b>3.7%</b>	<b>54</b>	<b>4.5%</b>	<b>46</b>
Arrowstreet EM Equity	-20.8%	21	11.7%	1	8.0%	2	7.3%	4	6.8%	7
Axiom EM Equity	-30.5%	77	2.2%	36	4.0%	28	4.5%	34	5.4%	26
Baron EM	-30.2%	75	0.7%	59	2.3%	66	3.5%	61	6.2%	14
City of London EM	-27.2%	58	1.8%	39	3.1%	44	4.2%	42	5.2%	30
Invesco EM Equity	<b>-34.3%</b>	<b>93</b>	<b>-3.4%</b>	<b>94</b>	<b>1.3%</b>	<b>81</b>	<b>2.6%</b>	<b>79</b>	<b>3.7%</b>	<b>72</b>
LSV EM Value	-15.0%	8	1.6%	43	2.4%	61	3.4%	64	4.2%	54
Neuberger Berman EM	-28.2%	65	-2.1%	88	0.9%	86	3.0%	71	3.9%	63
Pzena EM Focused Value	-14.6%	8	4.2%	16	3.9%	28	5.9%	12	5.9%	18
RBC EM Equity	-20.7%	21	0.5%	61	3.6%	36	4.3%	37	5.7%	20
Schroder Global EM Core	-28.2%	65	1.5%	44	3.6%	34	4.8%	31	4.7%	41
Wasatch EM Select	-30.9%	81	9.7%	1	8.3%	1	6.8%	6	---	---
Westwood Global EM	-12.9%	6	3.6%	23	2.9%	51	4.3%	37	4.3%	50
William Blair EM Growth	-31.8%	85	6.1%	6	5.8%	10	5.3%	17	6.2%	14
<b>MSCI Emerging Markets Index</b>	<b>-25.3%</b>	<b>44</b>	<b>0.6%</b>	<b>60</b>	<b>2.2%</b>	<b>67</b>	<b>2.8%</b>	<b>76</b>	<b>3.1%</b>	<b>82</b>

Past performance is no guarantee of future results

Performance as of as of June 30, 2022

Source: eVestment (Global Emerging Markets All Cap Equity Universe rankings)



## TRAILING PERIOD RETURNS (GREENWICH)

	1 Year	Rank	3 Year	Rank	5 Year	Rank	7 Year	Rank	10 Year	Rank
<b>Emerging Markets Equity</b>										
Artisan Dev World	-48.0%	100	3.8%	21	7.0%	5	8.0%	1	--	--
Baillie Gifford EM AC	-35.4%	96	-0.5%	74	3.8%	31	5.2%	22	5.5%	23
Causeway EM Equity	-26.3%	51	0.8%	57	1.9%	73	2.5%	83	4.1%	56
GQG EM Equity	-22.1%	28	4.4%	14	6.7%	6	6.6%	7	--	--
Harding Loevner EM	-32.9%	91	-3.2%	93	-0.1%	92	2.3%	86	3.8%	68
J.P. Morgan Total EM	-16.8%	11	1.3%	48	3.3%	39	3.5%	60	--	--
MFS EM Equity	-26.9%	56	-2.5%	90	1.2%	83	3.0%	72	2.6%	90
Wellington EM Equity	-27.9%	63	3.8%	21	4.7%	19	5.3%	16	5.3%	28
<b>MSCI Emerging Markets Index</b>	<b>-25.3%</b>	<b>44</b>	<b>0.6%</b>	<b>60</b>	<b>2.2%</b>	<b>67</b>	<b>2.8%</b>	<b>76</b>	<b>3.1%</b>	<b>82</b>

Past performance is no guarantee of future results

Performance as of June 30, 2022

Source: eVestment (Global Emerging Markets All Cap Equity Universe rankings)

Coalition Greenwich survey: U.S. Inv. Consultants – Non Domestic Short List Recommendations – managers listed are those with >10% recommendations



# PUBLIC EQUITY



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# PUBLIC EQUITY ASSUMPTIONS

## OVERVIEW

- **Valuation multiples underlying the equity return assumptions have moved lower to reflect the increase in long-term interest rates**
- **Equity valuation multiples are sensitive to higher interest rates, though inflation can positively impact nominal revenue growth**
- **We recommend strategic asset allocation targets for emerging market equity reflect an overweight compared to the MSCI ACWI IMI**
  - The return assumption for emerging equity is highest among public equity and we recommend using non-U.S. developed equity as the funding source
- **NEPC encourages a strategic bias to small-cap with the use of active management relative to small-cap exposure in the MSCI ACWI IMI**

# PUBLIC EQUITY ASSUMPTIONS

## BUILDING BLOCKS

<b>Illiquidity Premium</b>	The return expected for assets with illiquidity risk
<b>Valuation</b>	Represents P/E multiple contraction or expansion relative to long-term trend
<b>Inflation</b>	Market-specific inflation based on country-level revenue exposure
<b>Real Earnings Growth</b>	Market-specific real growth based on a weighted-average of country revenue exposure and GDP growth
<b>Dividend Yield</b>	Income distributed to shareholders adjusted to reflect market trends

Asset Class	06/30/22 10-Yr Return	12-Month Change
U.S. Large-Cap Equity	5.8%	+0.9%
U.S. Small/Mid-Cap Equity	7.2%	+2.2%
U.S. Microcap Equity	8.0%	+2.7%
Non-U.S. Developed Equity	6.4%	+1.2%
Non-U.S. Developed Small-Cap Equity	7.4%	+2.1%
Emerging Market Equity	9.6%	+2.2%
Emerging Market Small-Cap Equity	9.3%	+1.5%
China Equity	9.4%	+2.2%
Hedge Fund - Equity	5.5%	+1.4%
Global Equity*	6.8%	+1.2%
Private Equity*	9.8%	+0.9%

Source: NEPC

\*Calculated as a blend of other asset classes

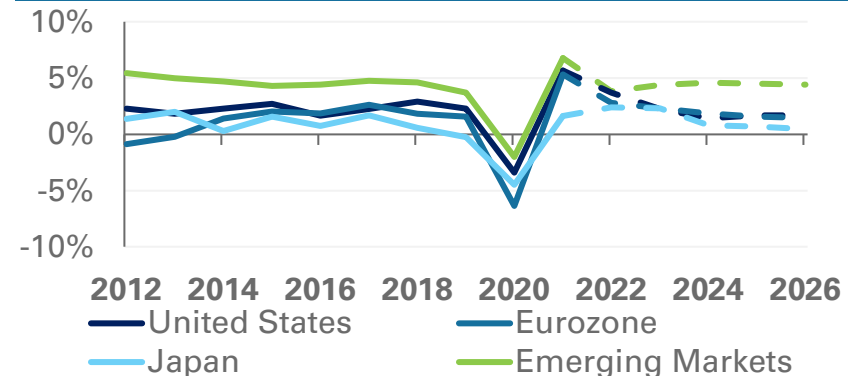


# PUBLIC EQUITY

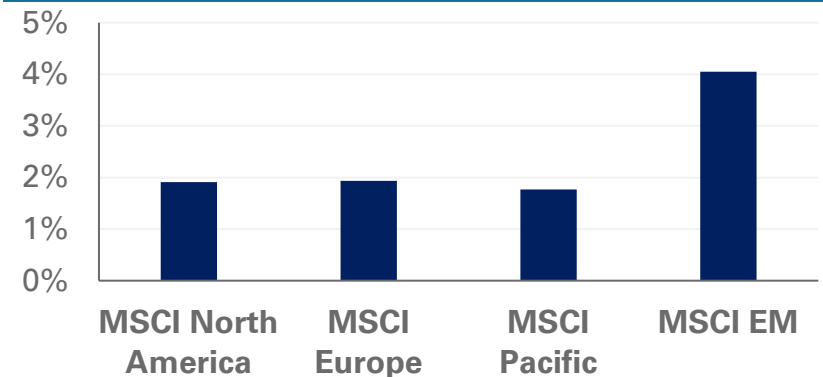
## REAL EARNINGS GROWTH

- **Global growth rates have slowed from recent highs**
- **Regions reliant on revenue from emerging markets are forecasted to enjoy higher earnings growth**
  - Non-U.S. stocks benefit from a greater portion of revenue from EM than U.S. stocks
- **We expect elevated real earnings growth for small-caps over the long-term relative to large-cap**
  - Over the long-term we expect a forward-looking risk premium for small-cap and mid-cap equities relative to large-cap stocks

### Real GDP Growth Projections

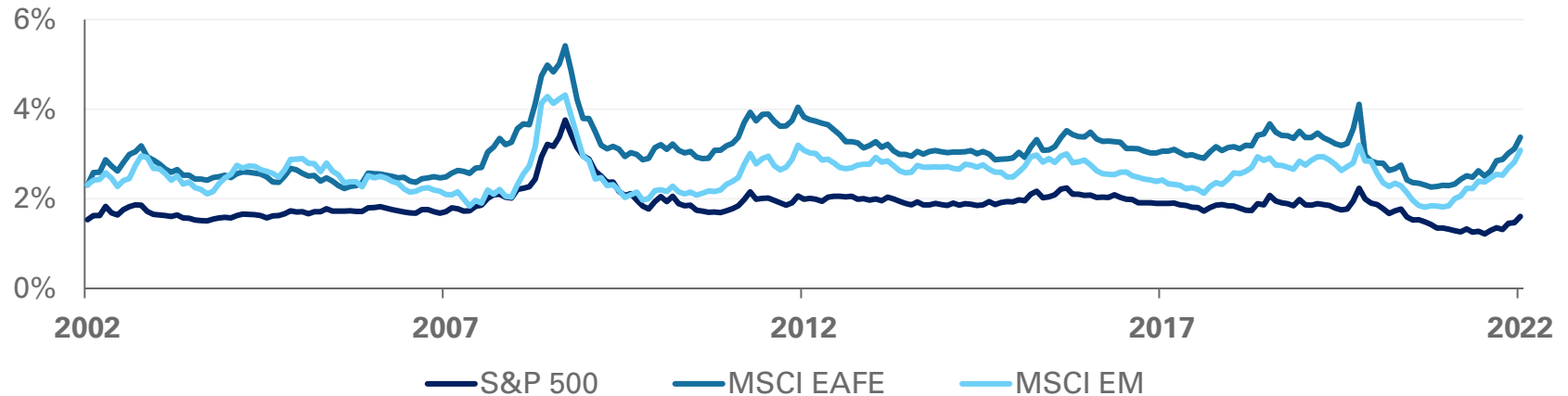


### Expected 5-Year Real Growth



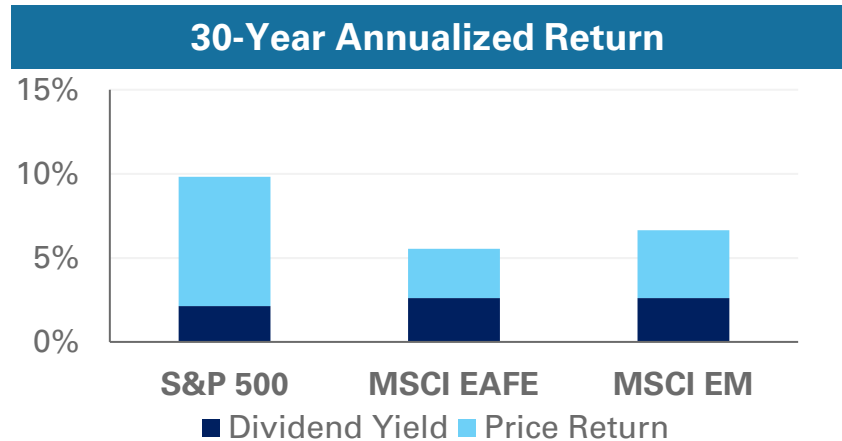
# PUBLIC EQUITY

## DIVIDEND YIELD



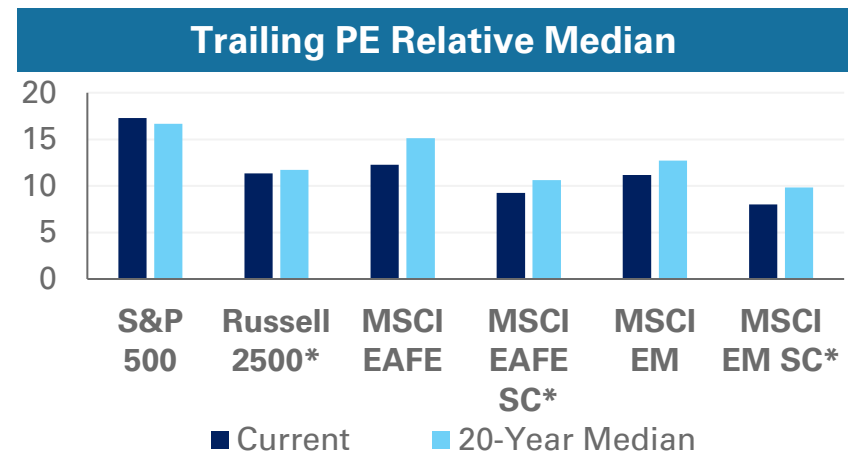
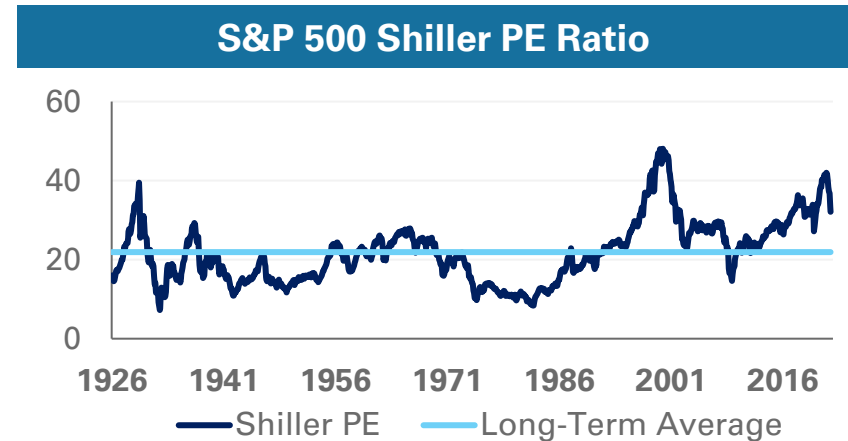
- **Non-U.S. equities provide higher dividend yields relative to the U.S. over the long-term**

- Terminal value dividend yield inputs for MSCI EM and EAFE are 2.5% and 3.0%
- Terminal value dividend yield input for S&P 500 is 2.50%



## VALUATION

- **U.S. stock valuations are elevated relative to long-term averages**
- **P/E terminal value inputs have been adjusted lower to reflect the impact of higher nominal interest rates**
- **EAFE P/E inputs reflect more subdued market sentiment levels**
- **Emerging market stocks offer an elevated total return opportunity relative to developed markets**

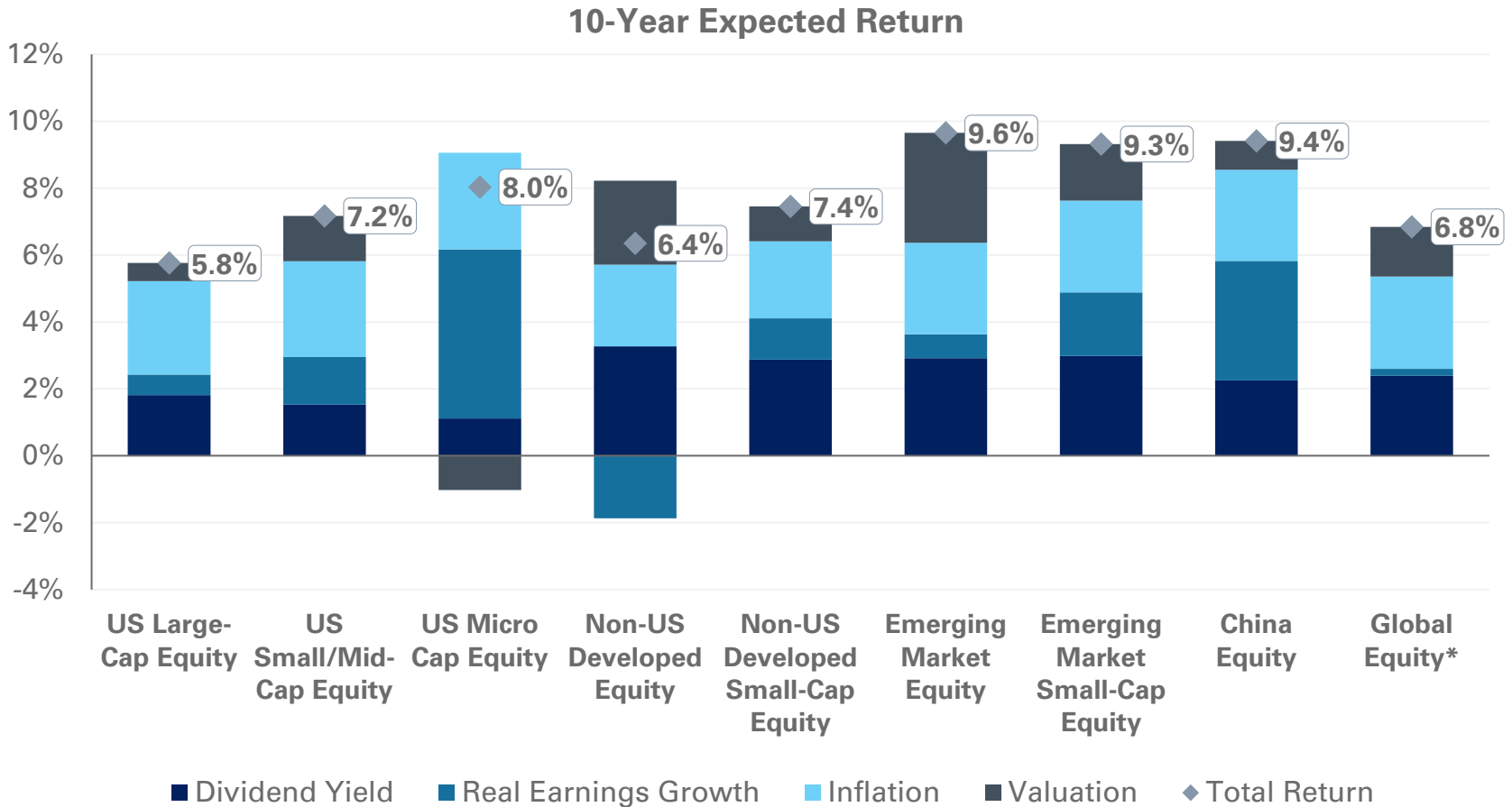


Sources: S&P, Shiller, Russell, MSCI, FactSet, NEPC; Shiller PE long-term average beginning in 1926

Note: \*Small cap indices valuations based on EV/EBITDA multiples; MSCI EM Small Cap median calculated since 3/31/2003

# PUBLIC EQUITY

## BUILDING BLOCKS



Source: NEPC

\*Calculated as a blend of other classes



# FIXED INCOME



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# FIXED INCOME ASSUMPTIONS

## OVERVIEW

- **Fixed income return assumptions reflect a transition to tighter monetary policy to offset ongoing inflationary pressures**
- **NEPC remains committed to a dedicated Treasury allocation given the upward movement in interest rates and return expectations**
- **Safe-haven fixed income exposure will differ by investor objective**
  - The fixed income asset-type and duration profile should reflect portfolio objectives, asset-liability glide path, and desire for capital efficiency
- **The use of return-seeking credit investments requires a more dynamic posture to manage shifts in credit spreads and market cycles**

# FIXED INCOME ASSUMPTIONS

## BUILDING BLOCKS

<b>Illiquidity Premium</b>	The return expected for assets with illiquidity risk
<b>Government Rates Price Change</b>	Change due to shifts in current yields relative to forecasted rates
<b>Credit Deterioration</b>	The average loss for credit assets due to defaults and recovery rates
<b>Spread Price Change</b>	Valuation change due to changes in credit spreads relative to long-term targets
<b>Credit Spread</b>	Yield premium provided by securities with credit risk
<b>Government Rates</b>	The yield attributed to sovereign bonds that do not have credit risk

Asset Class	06/30/22 10-Yr Return	12-Month Change
U.S. TIPS	3.0%	+1.5%
U.S. Treasury Bond	3.2%	+1.8%
U.S. Corporate Bond	5.2%	+2.6%
U.S. MBS	3.4%	+1.7%
U.S. High Yield Corporate	6.9%	+3.8%
U.S. Leveraged Loan	6.6%	+2.2%
EMD External Debt	7.3%	+3.6%
EMD Local Currency Debt	6.9%	+1.1%
Non-U.S. Govt. Bond	2.1%	+1.1%
U.S. Muni Bond (1-10 Year)	3.0%	+1.8%
U.S. High Yield Muni Bond	5.0%	+2.8%
Hedge Fund – Credit	6.5%	+2.4%
U.S. Aggregate Bond*	3.8%	+1.9%
Private Debt*	8.0%	+1.6%

Source: NEPC

\*Calculated as a blend of other asset classes

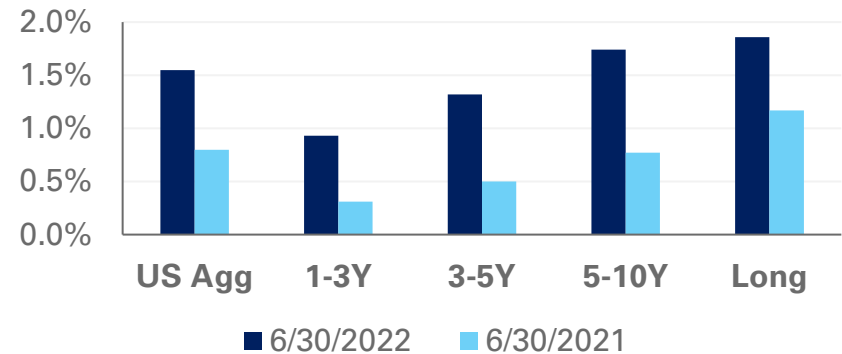


# FIXED INCOME

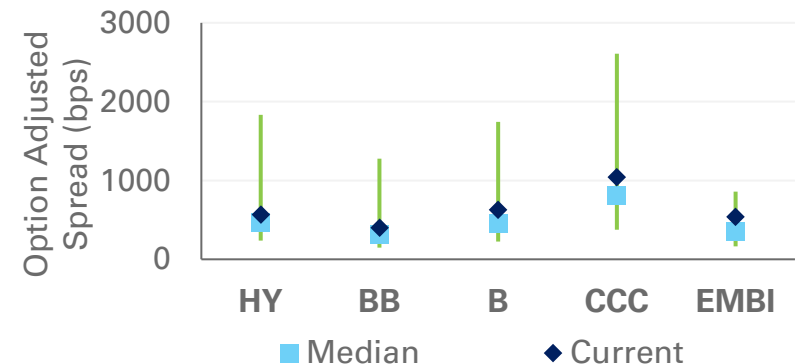
## CREDIT SPREADS

- **Credit spreads have increased and are above median levels**
- **Higher credit spread levels raise future return expectations**
- **Credit spread assumptions reflect potential disruption**
  - With a record number of BBB-rated corporates, fallen angel downgrades are a greater risk
- **Default and recovery rates are informed by long-term history**

U.S. Corporate OAS by Maturity



Return-Seeking Credit Spreads



# FIXED INCOME

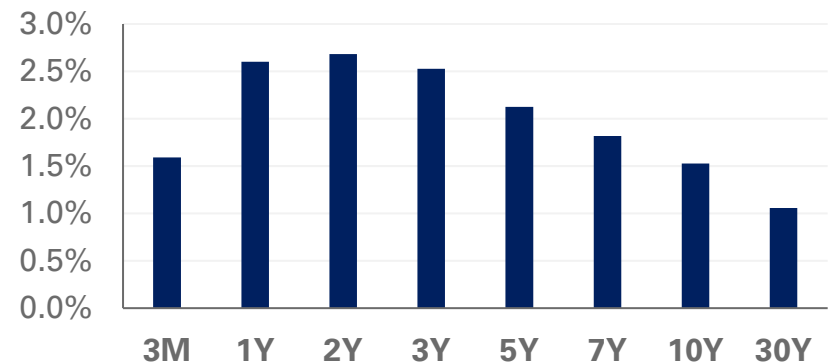
## GOVERNMENT RATES

- **Government rates price change reflects shifts in interest rates, the yield curve, and roll down**
  - Roll down refers to the price change due to the aging of a bond along the yield curve
- **Expectations for rising rates are a headwind for return expectations**
  - However, higher interest rates boost the long-term return due to the increased yield benefit
- **A steeper yield curve relative to forward interest rates can offer relief from rising rates**

Barclays U.S. Aggregate Bond

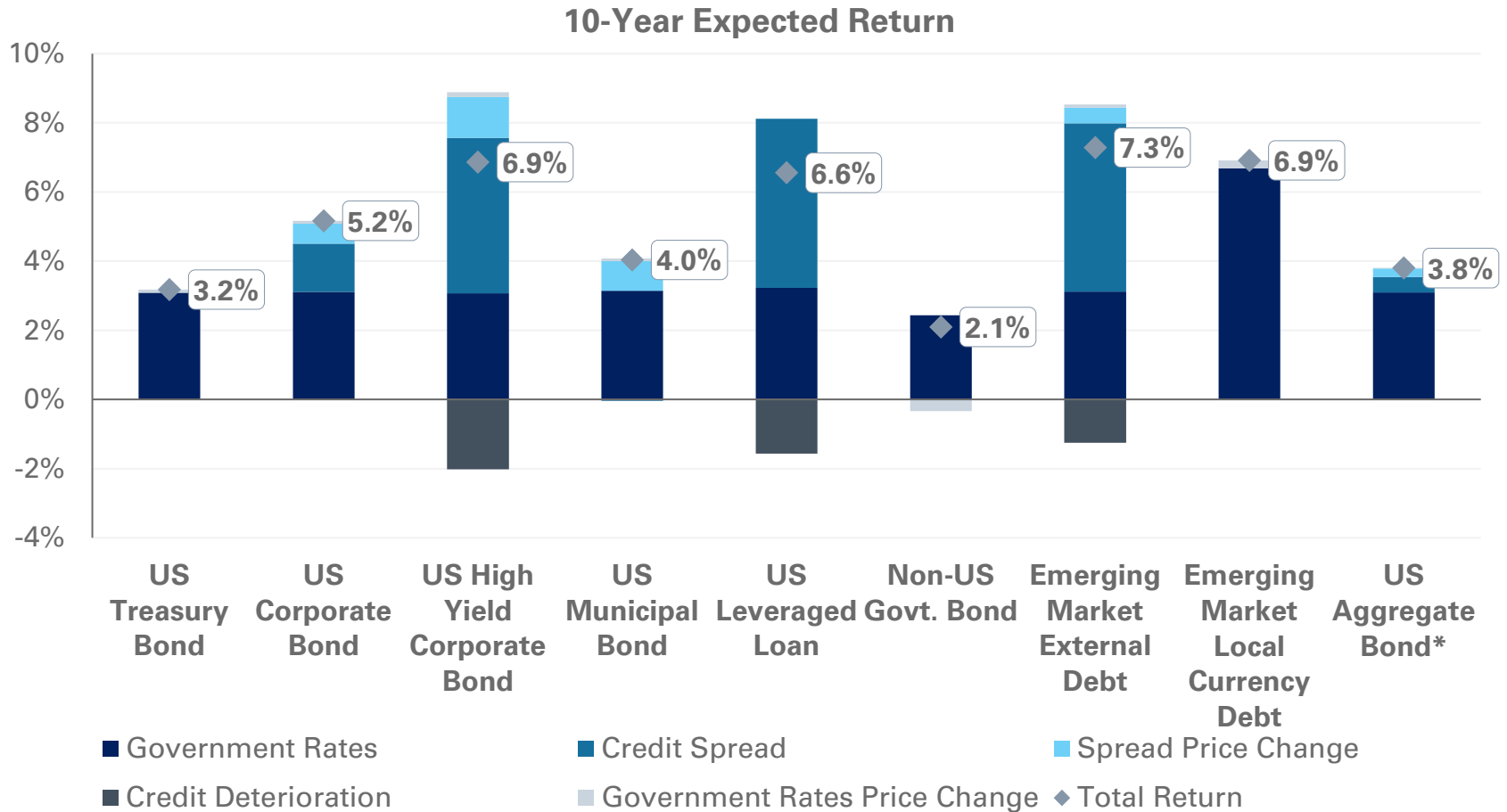


Annual Change in Treasury Yields



# FIXED INCOME

## BUILDING BLOCKS

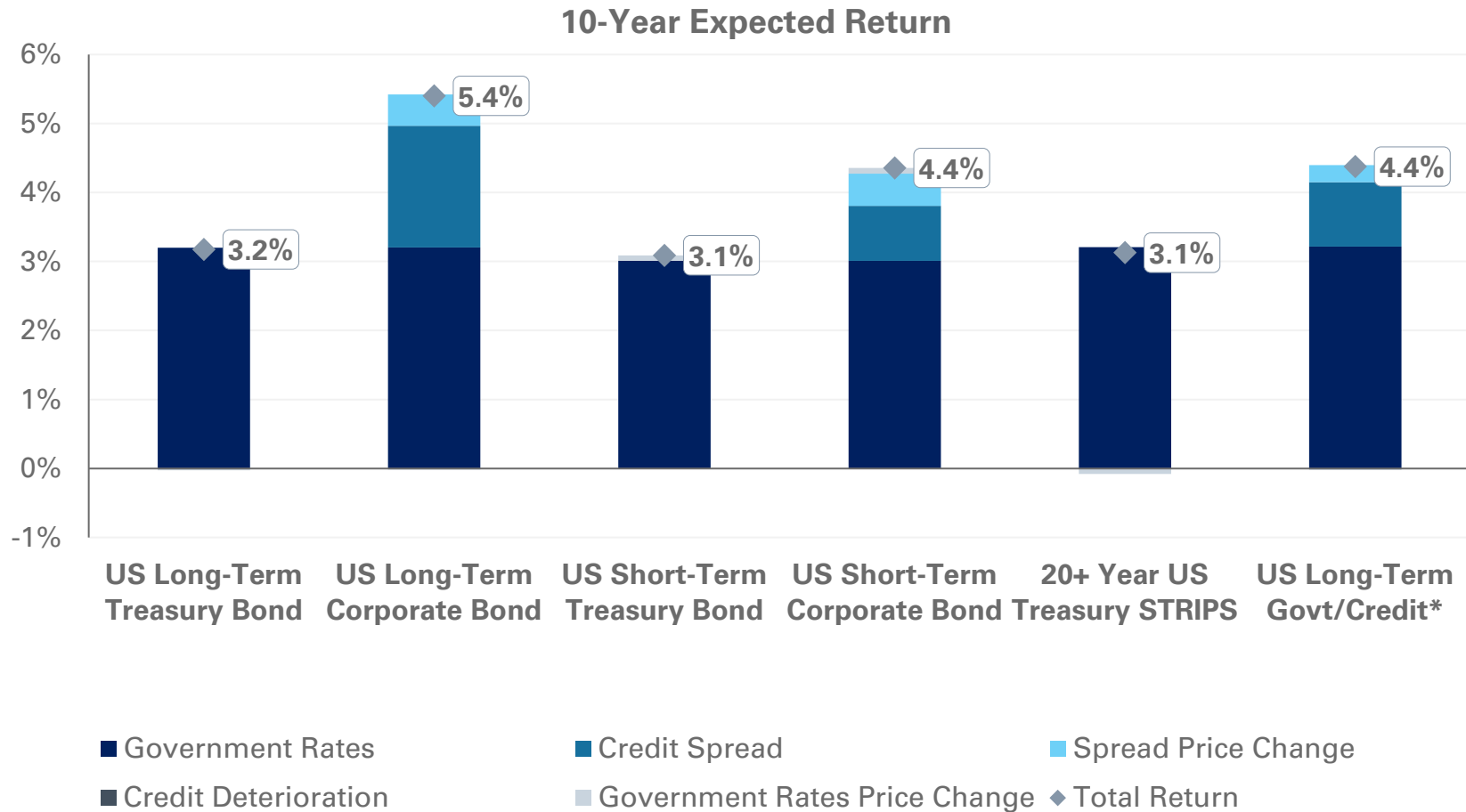


Source: NEPC

\*Calculated as a blend of other classes

# FIXED INCOME

## BUILDING BLOCKS



Source: NEPC

\*Calculated as a blend of other classes

# REAL ASSET



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# REAL ASSET ASSUMPTIONS

## OVERVIEW

- **The strategic outlook for real assets reflects a high level of uncertainty due to the elevated near-term inflation environment**
- **Real assets offer a meaningful portfolio diversification benefit, but are sensitive to a wide range of potential inflation scenarios**
- **Real assets exhibit different betas to inflation and each asset class is exposed to various economic factors**
  - Diversification and correlation benefits are helpful to a portfolio but must be carefully considered relative to the expected risk premium
- **Inflation-sensitivity and portfolio objectives influence an investor's strategic allocation to real assets**
  - We recommend private markets to meet strategic real asset allocation targets
  - Relative to portfolio objectives, we prefer the use of public market strategies to mitigate short-term inflation risks

# REAL ASSET ASSUMPTIONS

## BUILDING BLOCKS

<b>Illiquidity Premium</b>	The return expected for assets with illiquidity risk
<b>Valuation</b>	The change in price of the asset moving to a terminal value or real average level
<b>Inflation</b>	Based on the inflation path as defined by breakeven-inflation rates and NEPC assumptions
<b>Growth</b>	Market-specific real growth based on a weighted-average of country-level revenue exposure and GDP growth
<b>Real Income</b>	The inflation-adjusted income produced by the asset

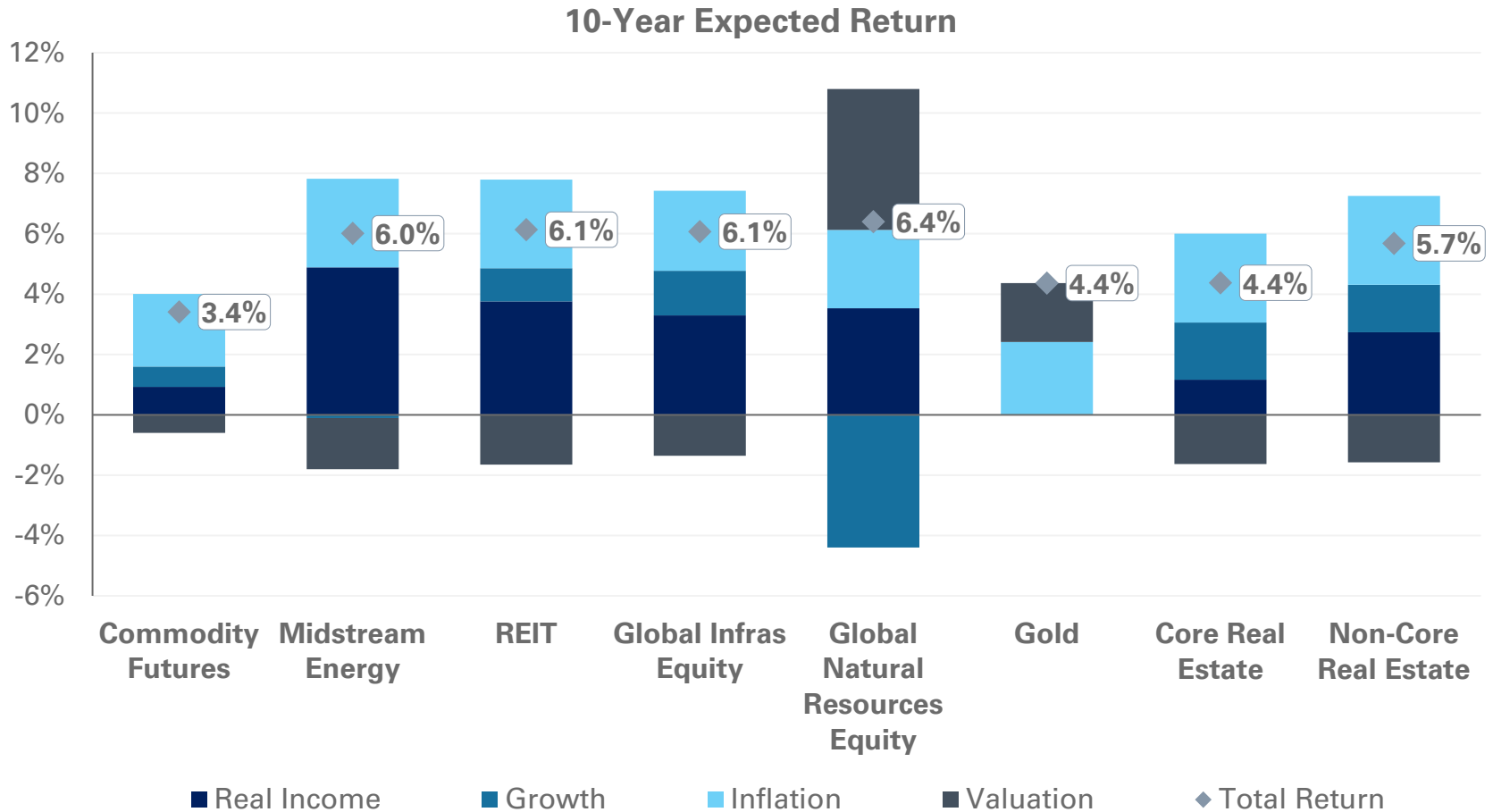
Asset Class	06/30/22 10-Yr Return	12-Month Change
Commodity Futures	3.4%	+2.1%
Midstream Energy	6.0%	-0.3%
REIT	6.1%	+1.4%
Global Infrastructure Equity	6.1%	+0.4%
Global Natural Resources Equity	6.4%	+1.0%
Gold	4.4%	+1.0%
Real Estate - Core	4.4%	-0.4%
Real Estate – Non-Core	5.7%	-0.3%
Private Debt - Real Estate	5.3%	+0.8%
Private Real Assets - Natural Resources	7.9%	+0.7%
Private Real Assets - Infrastructure	6.1%	+0.7%

Source: NEPC

\*Calculated as a blend of other asset classes



# REAL ASSET BUILDING BLOCKS



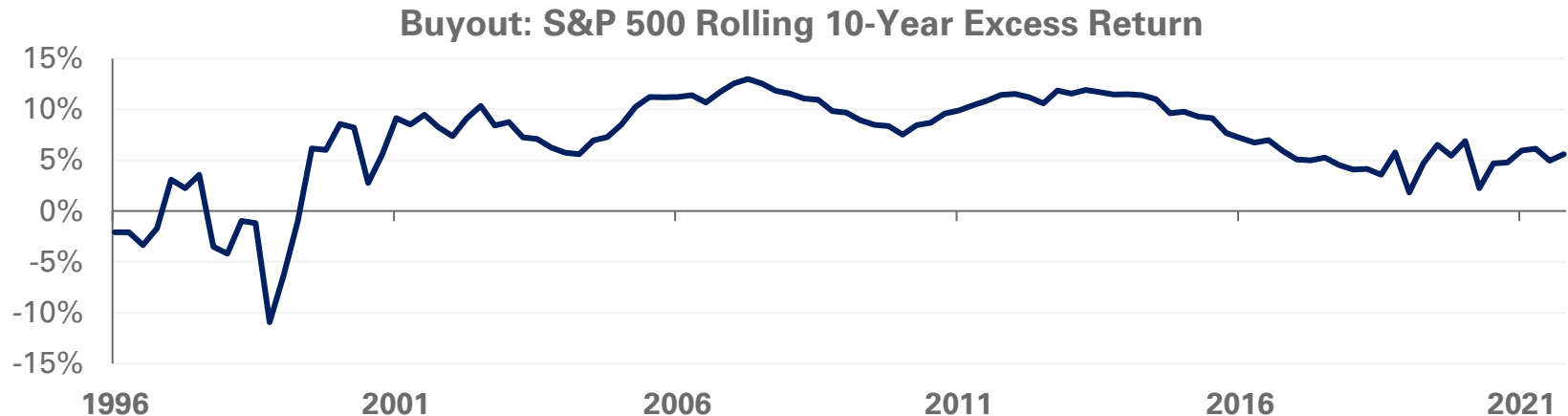
# ALTERNATIVE ASSETS



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# ALTERNATIVE ASSETS

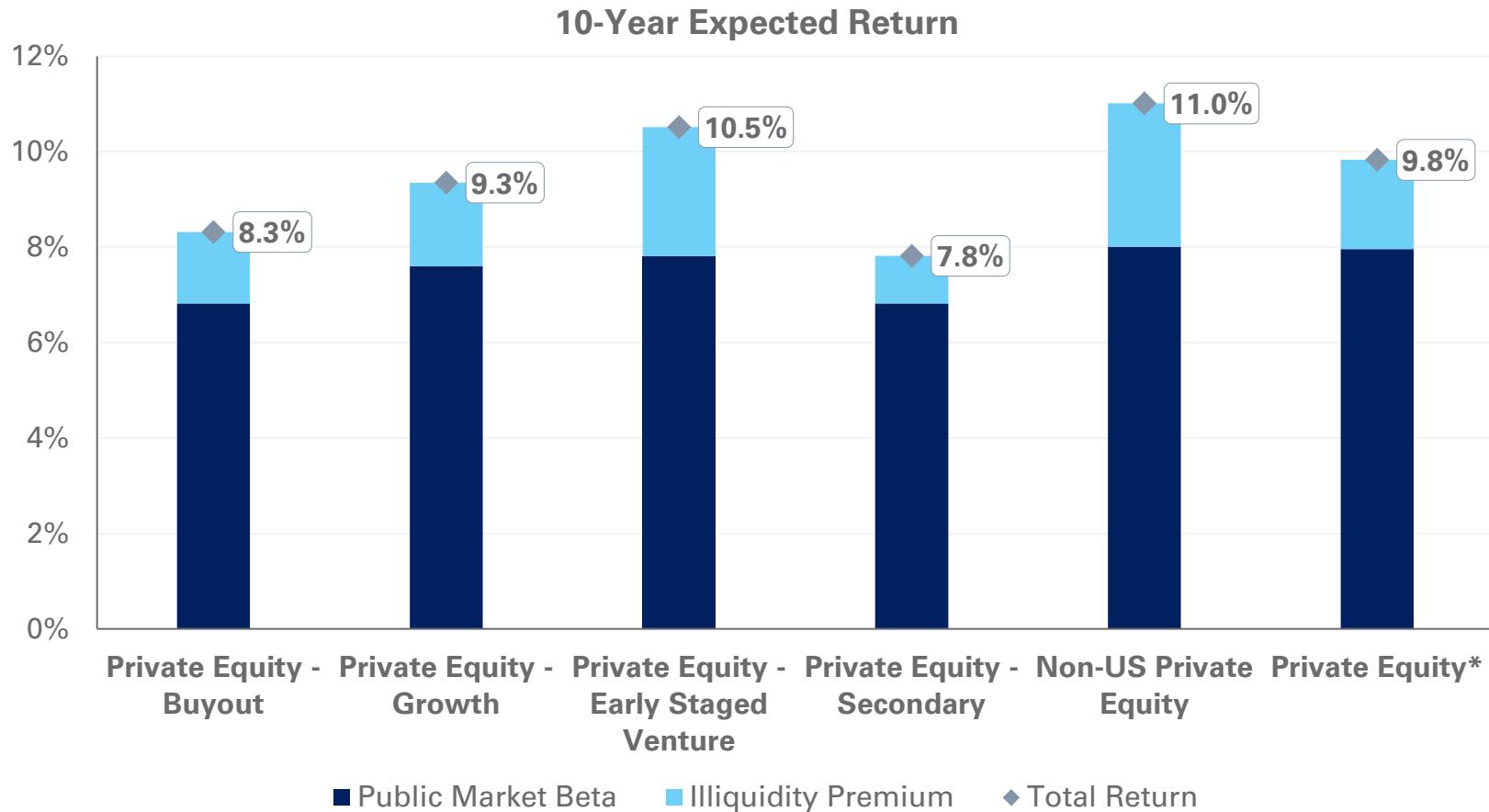
## METHODOLOGY



- **Private market assumptions are constructed from betas to public markets with an added illiquidity premia**
  - Historically, the observed illiquidity premium has been a significant component driving private market returns
- **Hedge fund assumptions are constructed from betas to public markets with an added alpha assumption**

# PRIVATE EQUITY

## BUILDING BLOCKS

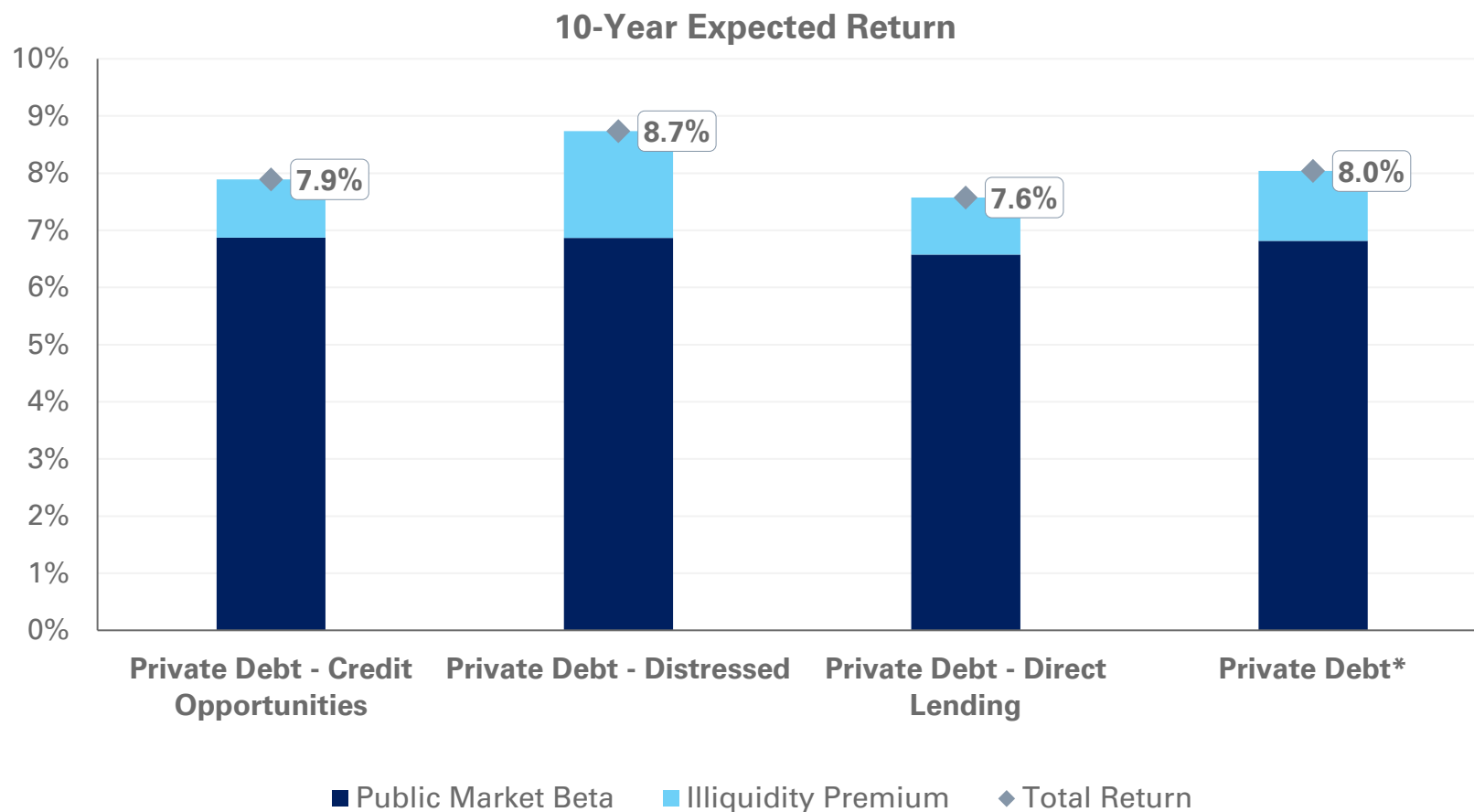


Source: NEPC

\*Private Equity is a derived composite of 34% U.S. Buyout, 34% U.S. Growth, 8.5% U.S. Secondary, 8.5% U.S. Venture, 15% Non-U.S. PE

# PRIVATE DEBT

## BUILDING BLOCKS



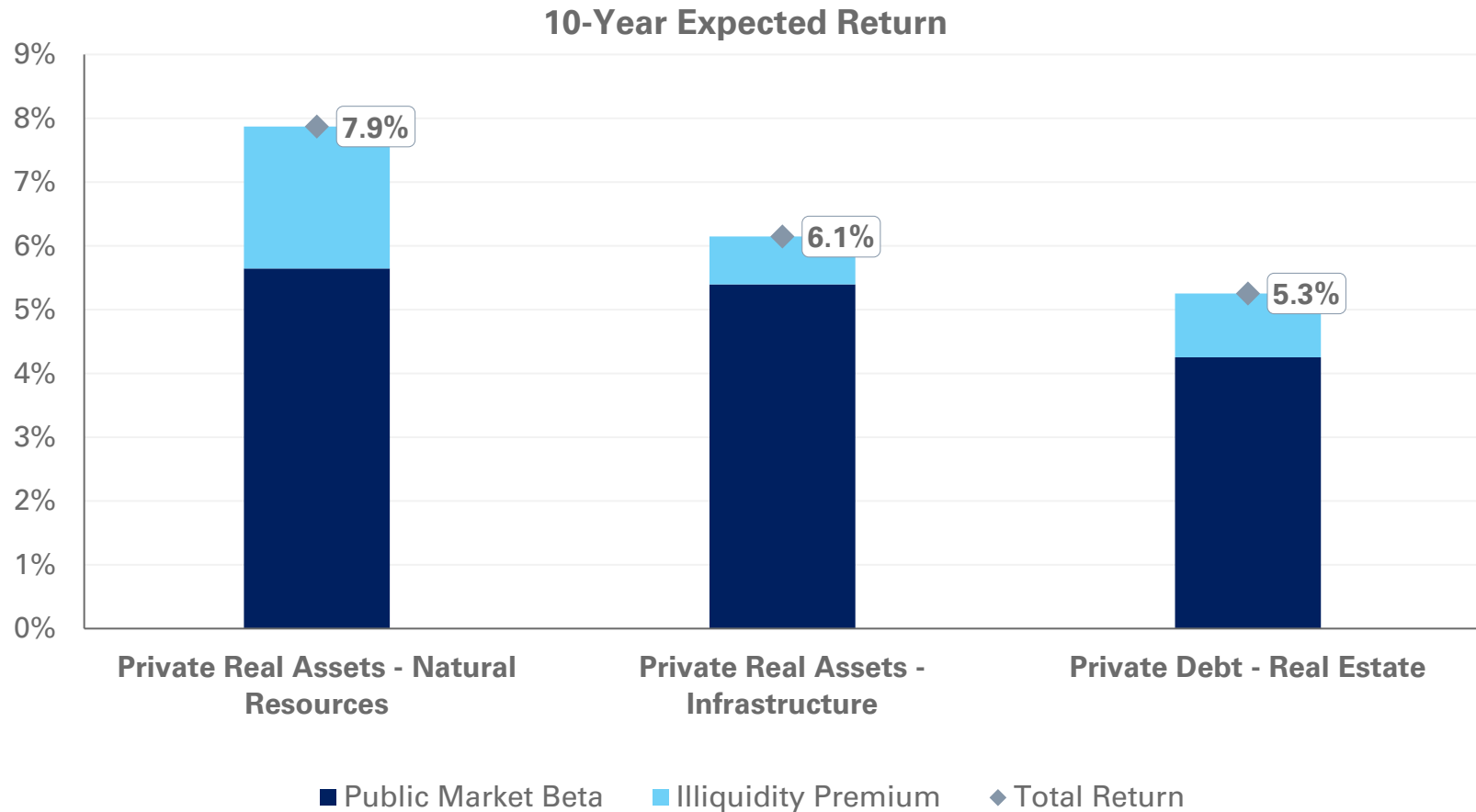
Source: NEPC

\*Private Debt is a derived composite of 25% Mezzanine, 25% Distressed, 50% Direct Lending



# PRIVATE REAL ASSET

## BUILDING BLOCKS





# APPENDIX



# 10-YEAR RETURN FORECASTS

## EQUITY

Geometric Expected Return				
Asset Class	06/30/2022	06/30/2021	Delta	Std. Dev.
U.S. Large-Cap Equity	5.8%	4.9%	+0.9%	16.6%
U.S. Small/Mid-Cap Equity	7.2%	5.0%	+2.2%	20.7%
Non-U.S. Developed Equity	6.4%	5.2%	+1.2%	19.6%
Non-U.S. Developed Equity (USD Hedge)	6.5%	5.4%	+1.1%	17.6%
Non-U.S. Developed Small-Cap Equity	7.4%	5.3%	+2.1%	24.2%
Emerging Market Equity	9.6%	7.4%	+2.2%	28.3%
Emerging Market Small-Cap Equity	9.3%	7.8%	+1.5%	34.4%
Hedge Fund - Equity	5.5%	4.1%	+1.4%	11.4%
Private Equity - Buyout	8.3%	7.2%	+1.1%	19.0%
Private Equity - Growth	9.3%	8.4%	+0.9%	31.5%
Private Equity - Early Stage Venture	10.5%	9.8%	+0.7%	45.0%
Private Equity - Secondary	7.8%	6.7%	+1.1%	20.0%
Non-U.S. Private Equity	11.0%	10.3%	+0.7%	32.0%
China Equity	9.4%	7.2%	+2.2%	28.6%
U.S. Microcap Equity	8.0%	5.3%	+2.7%	25.8%
Global Equity*	6.8%	5.6%	+1.2%	17.9%
Private Equity*	9.8%	8.9%	+0.9%	25.2%



\*Calculated as a blend of other asset classes

# 10-YEAR RETURN FORECASTS

## SAFE-HAVEN FIXED INCOME

Geometric Expected Return				
Asset Class	06/30/2022	06/30/2021	Delta	Std. Dev.
Cash	2.9%	1.2%	+1.7%	0.6%
U.S. TIPS	3.0%	1.5%	+1.5%	5.8%
U.S. Treasury Bond	3.2%	1.4%	+1.8%	5.3%
U.S. Corporate Bond	5.2%	2.6%	+2.6%	7.3%
U.S. Corporate Bond - AAA	4.3%	1.9%	+2.4%	6.0%
U.S. Corporate Bond - AA	4.3%	2.1%	+2.2%	5.9%
U.S. Corporate Bond - A	4.8%	2.4%	+2.4%	7.2%
U.S. Corporate Bond - BBB	5.5%	2.8%	+2.7%	8.0%
U.S. Mortgage-Backed Securities	3.4%	1.7%	+1.7%	6.5%
U.S. Securitized Bond	4.1%	2.1%	+2.0%	8.4%
U.S. Collateralized Loan Obligation	4.7%	2.9%	+1.8%	7.3%
U.S. Municipal Bond	4.0%	1.5%	+2.5%	6.0%
U.S. Municipal Bond (1-10 Year)	3.0%	1.2%	+1.8%	4.5%

# 10-YEAR RETURN FORECASTS

## SAFE-HAVEN FIXED INCOME

Geometric Expected Return				
Asset Class	06/30/2022	06/30/2021	Delta	Std. Dev.
Non-US Government Bond	2.1%	1.0%	+1.1%	9.3%
Non-US Government Bond (USD Hedge)	2.3%	1.2%	+1.1%	4.0%
Non-US Inflation-Linked Bond (USD Hedge)	1.7%	0.6%	+1.1%	5.9%
U.S. Short-Term TIPS (1-3 Year)	2.8%	1.2%	+1.6%	3.2%
U.S. Short-Term Treasury Bond (1-3 Year)	3.1%	1.3%	+1.8%	2.1%
U.S. Short-Term Corporate Bond (1-3 Year)	4.4%	2.2%	+2.2%	3.0%
U.S. Intermediate-Term TIPS (3-10 Year)	3.1%	1.5%	+1.6%	8.5%
U.S. Intermediate-Term Treasury Bond (3-10 Year)	3.2%	1.5%	+1.7%	5.4%
U.S. Intermediate-Term Corporate Bond (3-10 Year)	5.3%	2.8%	+2.5%	5.5%
U.S. Long-Term Treasury Bond (10-30 Year)	3.2%	1.4%	+1.8%	6.5%
U.S. Long-Term TIPS (10-30 Year)	3.5%	1.6%	+1.9%	10.9%
U.S. Long-Term Corporate Bond (10-30 Year)	5.4%	2.5%	+2.9%	11.6%
20+ Year U.S. Treasury STRIPS	3.1%	1.1%	+2.0%	10.7%
10 Year U.S. Treasury Bond	3.4%	1.7%	+1.7%	7.4%
10 Year Non-U.S. Government Bond (USD Hedge)	1.4%	0.2%	+1.2%	5.1%
U.S. Aggregate Bond*	3.8%	1.9%	+1.9%	5.6%

\*Calculated as a blend of other asset classes



# 10-YEAR RETURN FORECASTS

## RETURN-SEEKING CREDIT

Geometric Expected Return				
Asset Class	06/30/2022	06/30/2021	Delta	Std. Dev.
U.S. High Yield Corporate Bond	6.9%	3.1%	+3.8%	11.2%
U.S. Corporate Bond - BB	7.2%	3.9%	+3.3%	9.8%
U.S. Corporate Bond - B	7.4%	3.4%	+4.0%	11.7%
U.S. Corporate Bond - CCC/Below	2.3%	-3.5%	+5.8%	20.6%
U.S. Short-Term High Yield Corp Bond (1-3 Year)	5.5%	2.0%	+3.5%	8.5%
U.S. Leveraged Loan	6.6%	4.4%	+2.2%	9.1%
Emerging Market External Debt	7.3%	3.7%	+3.6%	13.0%
Emerging Market Local Currency Debt	6.9%	5.8%	+1.1%	13.0%
U.S. High Yield Securitized Bond	6.6%	3.0%	+3.6%	11.2%
U.S. High Yield Collateralized Loan Obligation	7.3%	5.2%	+2.1%	10.8%
U.S. High Yield Municipal Bond	5.0%	2.2%	+2.8%	12.0%
Hedge Fund - Credit	6.5%	4.1%	+2.4%	10.2%
Private Debt - Credit Opportunities	7.9%	6.3%	+1.6%	14.4%
Private Debt - Distressed	8.7%	7.3%	+1.4%	14.3%
Private Debt - Direct Lending	7.6%	5.9%	+1.7%	10.5%
Private Debt*	8.0%	6.4%	+1.6%	11.6%



\*Calculated as a blend of other asset classes

# 10-YEAR RETURN FORECASTS

## REAL ASSETS

Geometric Expected Return				
Asset Class	06/30/2022	06/30/2021	Delta	Std. Dev.
Commodity Futures	3.4%	1.3%	+2.1%	18.5%
Midstream Energy	6.0%	6.3%	-0.3%	28.6%
REIT	6.1%	4.7%	+1.4%	21.4%
Global Infrastructure Equity	6.1%	5.7%	+0.4%	20.3%
Global Natural Resources Equity	6.4%	5.4%	+1.0%	23.2%
Gold	4.4%	3.4%	+1.0%	16.3%
Real Estate - Core	4.4%	4.8%	-0.4%	15.0%
Real Estate - Non-Core	5.7%	6.0%	-0.3%	17.5%
Private Debt - Real Estate	5.3%	4.5%	+0.8%	11.4%
Private Real Assets - Natural Resources	7.9%	7.2%	+0.7%	32.5%
Private Real Assets - Infrastructure	6.1%	5.4%	+0.7%	12.6%

# 30-YEAR RETURN FORECASTS

## EQUITY

Geometric Expected Return			
Asset Class	06/30/2022	06/30/2021	Delta
U.S. Large-Cap Equity	6.9%	6.2%	+0.7%
U.S. Small/Mid-Cap Equity	7.5%	6.3%	+1.2%
Non-U.S. Developed Equity	7.0%	6.2%	+0.8%
Non-U.S. Developed Equity (USD Hedge)	7.2%	6.4%	+0.8%
Non-U.S. Developed Small-Cap Equity	7.8%	6.6%	+1.2%
Emerging Market Equity	9.5%	8.4%	+1.1%
Emerging Market Small-Cap Equity	9.6%	8.4%	+1.2%
Hedge Fund - Equity	5.9%	5.2%	+0.7%
Private Equity - Buyout	8.9%	8.4%	+0.5%
Private Equity - Growth	9.9%	9.6%	+0.3%
Private Equity - Early Stage Venture	10.7%	10.5%	+0.2%
Private Equity - Secondary	8.3%	7.9%	+0.4%
Non-U.S. Private Equity	11.0%	10.6%	+0.4%
China Equity	9.3%	7.9%	+1.4%
U.S. Microcap Equity	8.4%	7.0%	+1.4%
Global Equity*	7.7%	6.8%	+0.9%
Private Equity*	10.3%	9.9%	+0.4%



\*Calculated as a blend of other asset classes

# 30-YEAR RETURN FORECASTS

## SAFE-HAVEN FIXED INCOME

Geometric Expected Return			
Asset Class	06/30/2022	06/30/2021	Delta
Cash	2.9%	2.3%	+0.6%
U.S. TIPS	3.6%	2.7%	+0.9%
U.S. Treasury Bond	3.4%	2.6%	+0.8%
U.S. Corporate Bond	5.3%	4.2%	+1.1%
U.S. Corporate Bond - AAA	4.4%	3.3%	+1.1%
U.S. Corporate Bond - AA	4.4%	3.4%	+1.0%
U.S. Corporate Bond - A	4.8%	3.8%	+1.0%
U.S. Corporate Bond - BBB	5.5%	4.3%	+1.2%
U.S. Mortgage-Backed Securities	3.7%	2.8%	+0.9%
U.S. Securitized Bond	4.5%	3.6%	+0.9%
U.S. Collateralized Loan Obligation	4.6%	4.0%	+0.6%
U.S. Municipal Bond	3.5%	2.5%	+1.0%
U.S. Municipal Bond (1-10 Year)	3.1%	2.4%	+0.7%
U.S. Taxable Municipal Bond	5.2%	3.6%	+1.6%



# 30-YEAR RETURN FORECASTS

## SAFE-HAVEN FIXED INCOME

Geometric Expected Return			
Asset Class	06/30/2022	06/30/2021	Delta
Non-US Government Bond	2.8%	1.9%	+0.9%
Non-US Government Bond (USD Hedge)	3.0%	2.2%	+0.8%
Non-US Inflation-Linked Bond (USD Hedge)	2.6%	1.5%	+1.1%
U.S. Short-Term TIPS (1-3 Year)	3.2%	2.5%	+0.7%
U.S. Short-Term Treasury Bond (1-3 Year)	3.2%	2.4%	+0.8%
U.S. Short-Term Corporate Bond (1-3 Year)	4.3%	3.4%	+0.9%
U.S. Intermediate-Term TIPS (3-10 Year)	3.7%	2.8%	+0.9%
U.S. Intermediate-Term Treasury Bond (3-10 Year)	3.6%	2.8%	+0.8%
U.S. Intermediate-Term Corporate Bond (3-10 Year)	5.4%	4.4%	+1.0%
U.S. Long-Term Treasury Bond (10-30 Year)	3.4%	2.5%	+0.9%
U.S. Long-Term TIPS (10-30 Year)	3.8%	2.5%	+1.3%
U.S. Long-Term Corporate Bond (10-30 Year)	5.5%	4.2%	+1.3%
20+ Year U.S. Treasury STRIPS	3.3%	2.2%	+1.1%
10 Year U.S. Treasury Bond	3.9%	3.1%	+0.8%
10 Year Non-U.S. Government Bond (USD Hedge)	2.5%	1.4%	+1.1%
U.S. Aggregate Bond*	4.0%	3.2%	+0.8%



\*Calculated as a blend of other asset classes

# 30-YEAR RETURN FORECASTS

## RETURN-SEEKING CREDIT

Geometric Expected Return			
Asset Class	06/30/2022	06/30/2021	Delta
U.S. High Yield Corporate Bond	6.9%	5.4%	+1.5%
U.S. Corporate Bond - BB	7.3%	6.0%	+1.3%
U.S. Corporate Bond - B	7.0%	5.4%	+1.6%
U.S. Corporate Bond - CCC/Below	1.7%	-0.5%	+2.2%
U.S. Short-Term High Yield Corp Bond (1-3 Year)	5.0%	3.6%	+1.4%
U.S. Leveraged Loan	6.3%	5.5%	+0.8%
Emerging Market External Debt	6.5%	5.1%	+1.4%
Emerging Market Local Currency Debt	5.9%	5.4%	+0.5%
U.S. High Yield Securitized Bond	6.8%	5.3%	+1.5%
U.S. High Yield Collateralized Loan Obligation	7.1%	6.4%	+0.7%
U.S. High Yield Municipal Bond	5.2%	4.0%	+1.2%
Hedge Fund - Credit	6.6%	5.7%	+0.9%
Private Debt - Credit Opportunities	8.1%	7.2%	+0.9%
Private Debt - Distressed	9.1%	8.1%	+1.0%
Private Debt - Direct Lending	8.6%	7.8%	+0.8%
Private Debt*	8.7%	7.8%	+0.9%



\*Calculated as a blend of other asset classes

# 30-YEAR RETURN FORECASTS

## REAL ASSETS

Geometric Expected Return			
Asset Class	06/30/2022	06/30/2021	Delta
Commodity Futures	3.3%	3.5%	-0.2%
Midstream Energy	6.7%	6.5%	+0.2%
REIT	7.3%	6.5%	+0.8%
Global Infrastructure Equity	6.7%	6.4%	+0.3%
Global Natural Resources Equity	6.7%	6.5%	+0.2%
Gold	4.4%	4.1%	+0.3%
Real Estate - Core	5.2%	5.6%	-0.4%
Real Estate - Non-Core	6.7%	7.0%	-0.3%
Private Debt - Real Estate	5.7%	5.4%	+0.3%
Private Real Assets - Natural Resources	8.4%	8.1%	+0.3%
Private Real Assets - Infrastructure	6.8%	6.5%	+0.3%

# PRIVATE MARKETS COMPOSITES

## PUBLIC MARKET BETA INPUTS FOR PRIVATE MARKETS

### PRIVATE EQUITY

**Buyout:** 25% U.S. Large Cap, 75% U.S. Small/Mid Cap

**Secondary:** 25% U.S. Large Cap, 75% U.S. Small/Mid Cap

**Growth:** 50% U.S. Small/Mid Cap, 50% U.S. Microcap

**Early-Stage Venture:** 25% U.S. Small/Mid Cap, 75% U.S. Microcap

**Non-U.S.:** 70% International Small Cap, 30% Emerging Small Cap

**Composite:** 34% Buyout, 34% Growth, 15 % Non-U.S., 8.5% Secondary, 8.5% Early Venture

### PRIVATE DEBT

**Direct Lending:** 100% Bank Loans

**Distressed:** 20% U.S. Small/Mid Cap, 60% U.S. High Yield, 20% Bank Loans

**Credit Opportunities:** 34% U.S. SMID Cap, 33% U.S. High Yield, 33% Bank Loans

**Composite:** 50% Direct Lending, 25% Credit Opportunities, 25% Distressed

### PRIVATE REAL ASSETS

**Energy:** 30% Comm., 35% Midstream, 35% Public Resource Equity

**Infra/Land:** 30% Commodities, 70% Public Infrastructure

**Private Real Estate Debt:** 50% CMBS, 50% Real Estate - Core



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Past performance is no guarantee of future results.

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