

# STATE OF RHODE ISLAND

## 2020 CAPITAL MKT. ASSUMPTIONS

January, 2020

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BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO

# 2020 ASSET CLASS OVERVIEW

## **2019 was a year of robust returns across most asset classes**

Investors were rewarded with lucrative returns as global equities and bonds rallied

## **Falling global yields were a powerful tailwind**

Fixed income benefitted as prices rose with falling yields

The discounting of future cash flows with lower rates, supports higher equity valuations

## **The economic backdrop weakened globally, but remains net positive**

Accommodative monetary policy in the developed world was a positive for risk assets

## **Market-based inflation expectations have declined considerably and reflect a lower expected inflation path over the long-term**

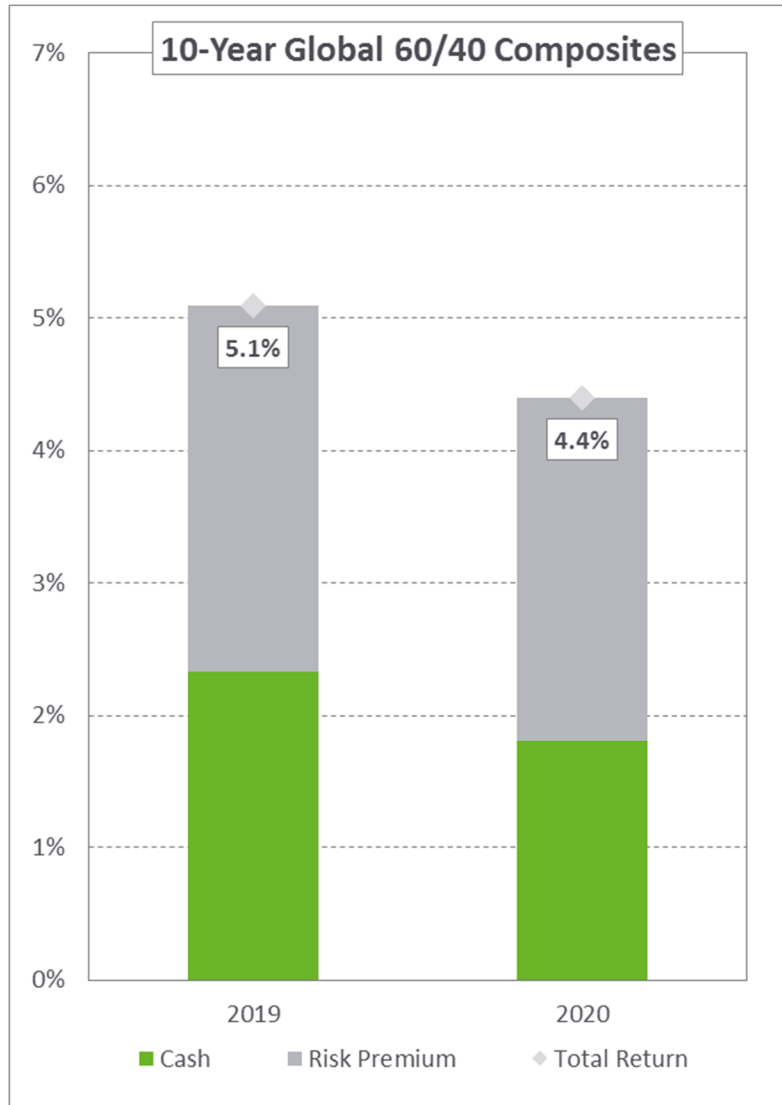
The “lower for longer” period has extended out a decade due to central bank intervention

## **The combination of falling interest rates, robust returns in the prior year, and lower growth and inflation expectations generate declining return expectations for nearly all asset classes**

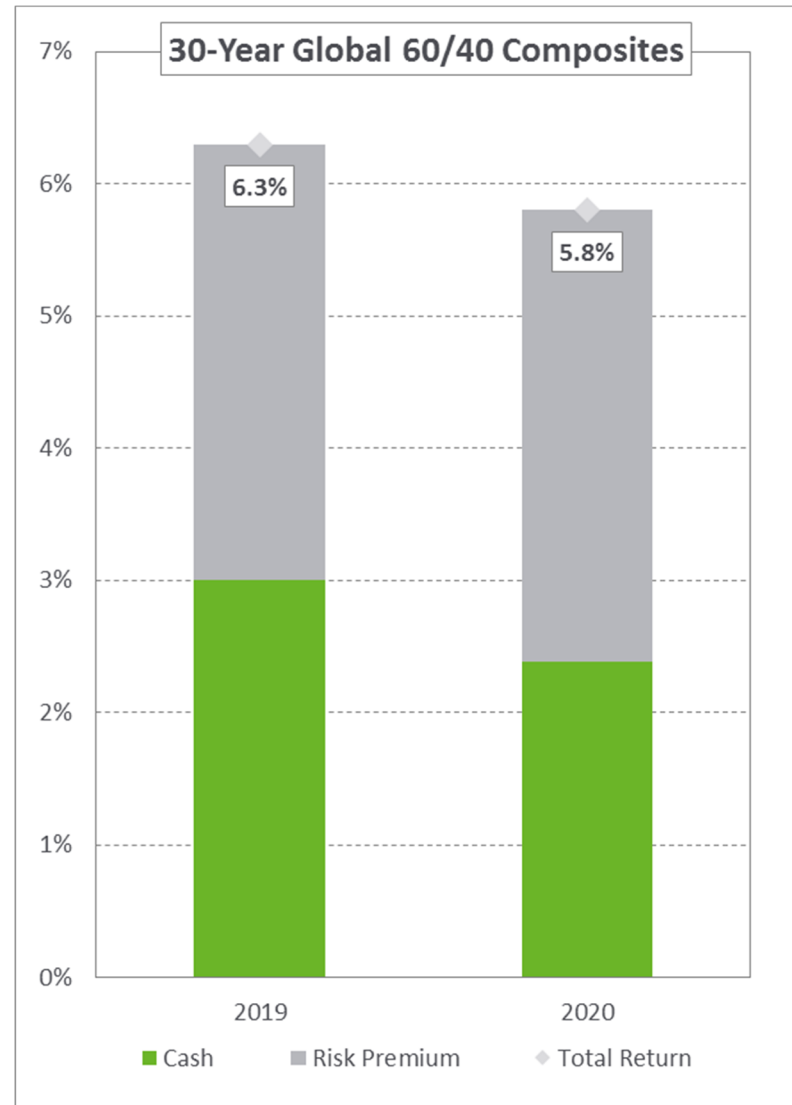
These significant market movements resulted in a secular decline in NEPC’s outlook – impacting both the 10-year and 30-year assumptions



# THE IMPACT OF LOWER CASH RATES



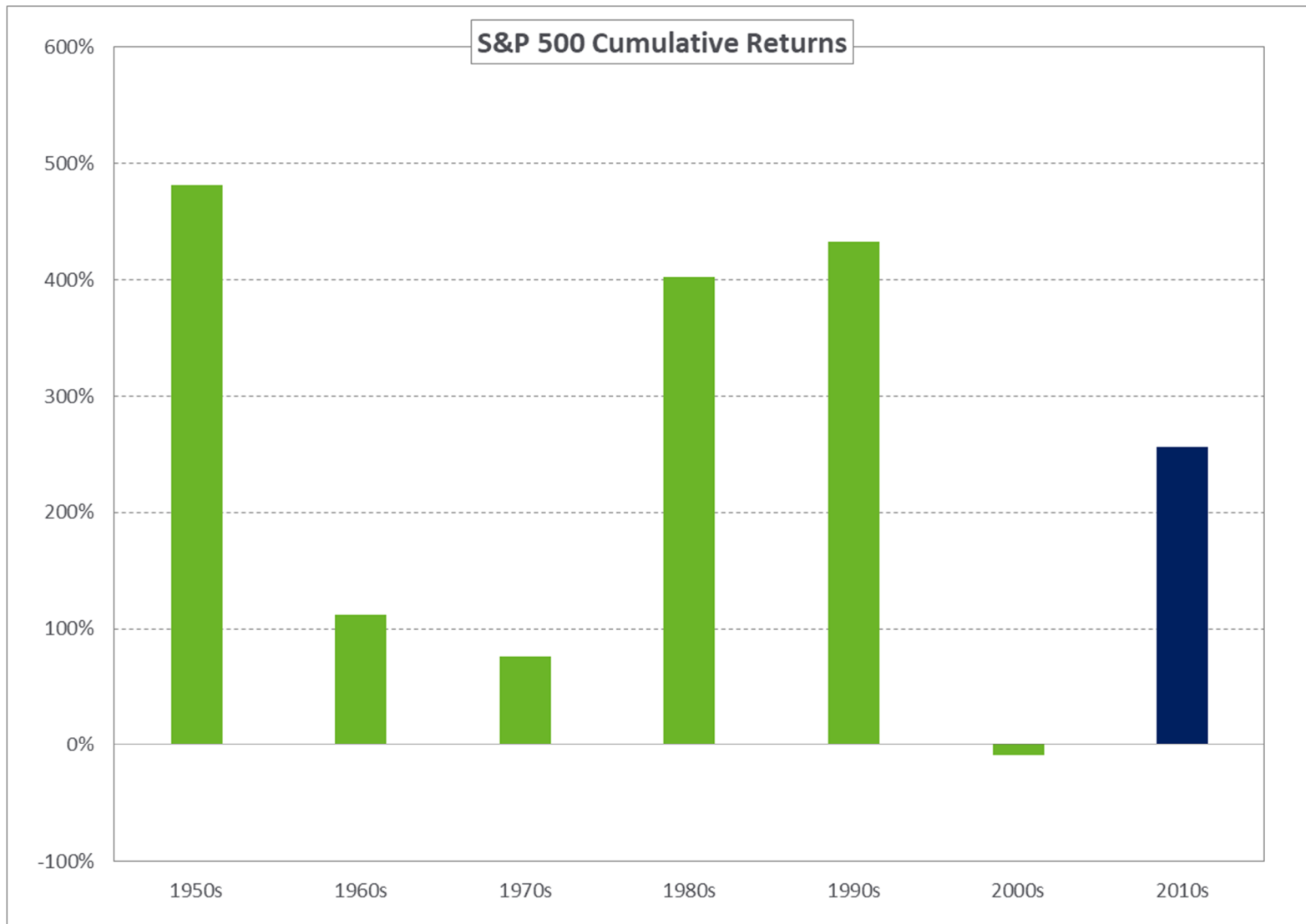
Source: NEPC



Source: NEPC



# WHAT WILL THE 20'S BRING?



Source: S&P, FactSet



# CORE GEOMETRIC RETURN ASSUMPTIONS

	Asset Class	10-Year Return	30-Year Return	Volatility
	Cash	1.8%	2.4%	1.00%
	US Inflation	2.3%	2.5%	-
Equity	Large Cap Equities	5.0%	6.7%	16.50%
	International Equities (Unhedged)	6.0%	7.0%	20.50%
	Emerging International Equities	9.0%	9.2%	28.00%
	<i>Global Equity*</i>	6.2%	7.5%	17.79%
	<i>Private Equity*</i>	9.4%	10.7%	24.58%
Fixed Income	Treasuries	1.9%	2.7%	5.50%
	<i>Core Bonds*</i>	2.5%	3.4%	6.01%
	TIPS	2.2%	2.7%	6.50%
	High Yield Bonds	4.1%	5.6%	12.50%
	<i>Private Debt*</i>	6.7%	7.8%	11.54%
Real Assets	Commodities	4.0%	4.8%	19.00%
	REITs	5.4%	6.5%	20.00%
	Core Real Estate	5.2%	6.0%	13.00%
	Private Real Assets: Infrastructure/Land	5.9%	6.7%	12.00%
Multi-Asset	<i>US 60/40*</i>	4.3%	5.7%	10.37%
	<i>Global 60/40*</i>	4.4%	5.8%	11.53%
	<i>Hedge Funds*</i>	5.0%	5.9%	8.18%

\*Calculated as a blend of other asset classes



# SIC STRATEGIC ASSET ALLOCATION

				Individual Asset Classes	
				Expected Return (10 year)	Expected Risk
Growth	US Equities	12.7%	16.4%	5.09%	17.20%
	Int'l Equities	7.6%	8.2%	6.02%	20.50%
	Emerging Int'l Equities	4.7%	5.1%	9.00%	28.00%
	Global Equity	15%	16%	6.21%	17.79%
	<b>Global Equity</b>	<b>40%</b>	<b>45%</b>	<b>6.15%</b>	<b>19.32%</b>
	Private Equity	11.3%	7.5%	9.37%	24.58%
	Non-Core Real Estate	2.3%	1.8%	6.42%	19.50%
	Opp. Private Credit	1.5%	0.7%	7.56%	14.00%
	<b>Private Growth</b>	<b>15%</b>	<b>10%</b>	<b>8.74%</b>	<b>22.76%</b>
<b>TOTAL GROWTH</b>	<b>55%</b>	<b>55%</b>	<b>6.86%</b>	<b>20.26%</b>	
Income	Equity Options	2.0%	0.0%	4.21%	11.00%
	Liquid Credit	2.8%	3.6%	4.46%	10.75%
	EMD (Blended)	2.0%	0.0%	4.76%	13.00%
	HY Infrastructure	1%	1%	5.20%	11.98%
	REITs	1%	1%	5.42%	20.00%
	Private Credit	3.2%	2.0%	6.72%	11.54%
<b>TOTAL INCOME</b>	<b>12%</b>	<b>8%</b>	<b>5.21%</b>	<b>12.25%</b>	
Stability	Long Treasuries	5%	4%	1.68%	12.00%
	Systematic Trend	5%	4%	5.04%	9.50%
	<b>CPC</b>	<b>10%</b>	<b>8%</b>	<b>3.36%</b>	<b>10.75%</b>
	Core Real Estate	3.6%	4.2%	5.21%	13.00%
	Private Infrastructure	2.4%	2.0%	5.91%	12.00%
	TIPS	2%	1%	2.19%	6.50%
	Commodities	0%	0%	3.96%	19.00%
	<b>Inflation Protection</b>	<b>8%</b>	<b>8%</b>	<b>4.67%</b>	<b>11.08%</b>
	Core Bonds	0%	11%	2.51%	6.01%
	IG Corp Credit (Core Bonds)	3.25%	0.00%	3.36%	7.50%
	Securitized Credit (Core Bonds)	3.25%	0.00%	2.48%	7.00%
	Absolute Return	6.5%	6.6%	5.02%	8.18%
	Strategic Cash	2%	3%	1.81%	1.00%
	<b>Volatility Protection</b>	<b>15%</b>	<b>21%</b>	<b>3.68%</b>	<b>6.82%</b>
<b>TOTAL STABILITY</b>	<b>33%</b>	<b>36%</b>	<b>3.82%</b>	<b>9.04%</b>	
Other	Short-Term Cash	0.0%	0.3%	2.10%	1.00%
	Russell Overlay	0.0%	0.2%	2.10%	1.00%
	<b>TOTAL CASH</b>	<b>0.0%</b>	<b>0.5%</b>	<b>0.0%</b>	<b>0.0%</b>
				<b>2020 Assumptions</b>	
				<b>Current Target</b>	<b>Current Allocation</b>
<b>Expected Return 10 yrs</b>				<b>6.16%</b>	<b>5.82%</b>
<b>Expected Return 30 yrs</b>				<b>7.24%</b>	<b>6.90%</b>
<b>Standard Dev</b>				<b>12.37%</b>	<b>11.78%</b>
<b>Sharpe Ratio (10 years)</b>				<b>0.35</b>	<b>0.34</b>

\*Current allocation is as of 11.30.2019



# KEY MARKET THEMES OVERVIEW

**Key Market Themes are factors that define global markets and can be expected to both evolve and remain relevant without a clear timeline of conclusion. At times, themes may be challenged or disrupted and generate market volatility. The conclusion of a theme likely alters both market dynamics and our market outlook. Our intent is for clients to be aware of these themes and understand their implications for asset allocation and portfolio implementation.**

**NEPC currently has four Key Market Themes:**







# DEFINING THE THEME

## **The developed world is undergoing a regime shift defined by central bank market interventions and permanent fiscal support from governments**

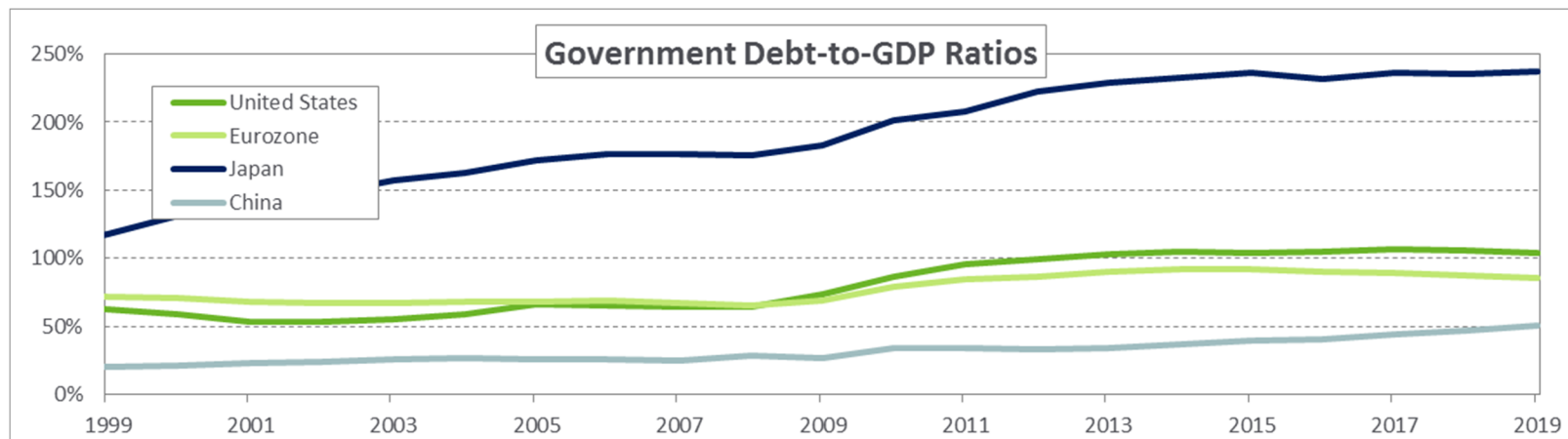
The dynamics of muted inflation pressures and below-average trend growth rates motivate a combined monetary and political response to address deflationary pressures and society's desire for higher economic growth rates

## **We believe central banks across the globe will continue to expand balance sheet assets to sustain an environment of excess liquidity**

Low to negative interest rates and a fragile economic environment force central banks to continue to grow balance sheets and liquify the global financial system

## **Weak economic growth trends in the developed world underpin political tensions, which we believe will motivate significant fiscal debt expansion**

Japan was at the forefront of this theme, raising debt-to-GDP levels to nearly 250% to confront a demographically-driven growth and inflation crisis and highlights a path for the US and Europe to address their unique long-term growth and inflation concerns



Source: FactSet, IMF



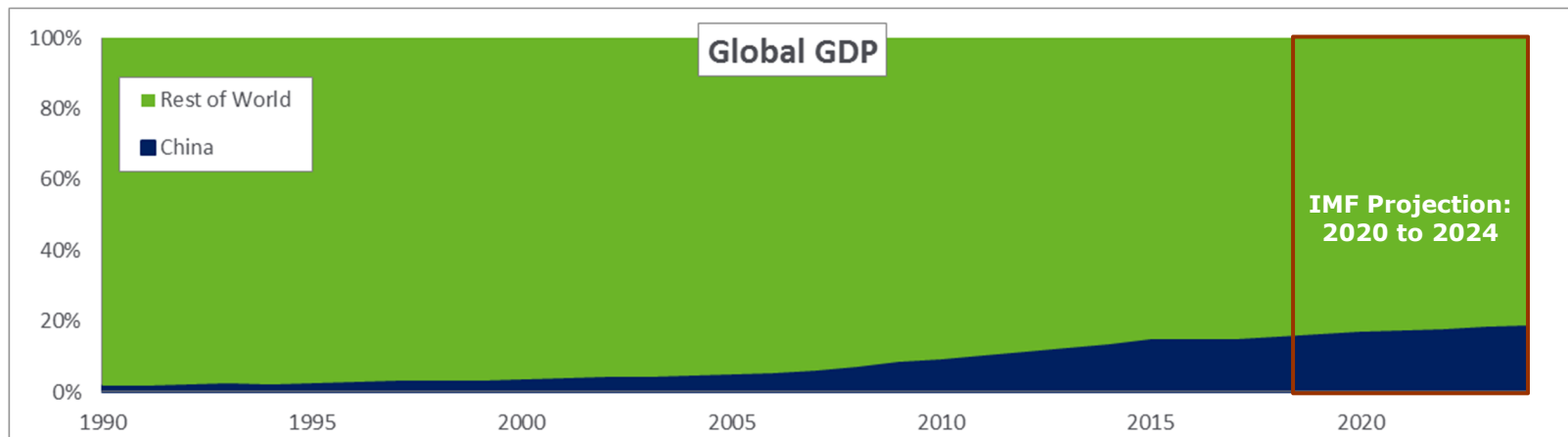
# DEFINING THE THEME

## **China is undergoing a multi-faceted evolution as the economy transitions to a services and consumption-based model, while China's role on the global stage shifts to reflect its ascending geopolitical power**

Domestically, China's socioeconomic profile is changing with rising income levels, increasing urbanization, but also challenging demographics. The country is leveraging this transition to continue its economic liberalization, but fixed investment and credit growth are required to support the "old" economy and maintain employment levels

In addition to economic liberalization, barriers to enter China's capital markets are being relaxed and the ability of foreign investors to access local markets has broadly expanded. Index providers are likely to continue to increase China's weight in global equity and fixed income indices, which is a better reflection of China's position in the world economy

## **China is the global growth engine and any disruption to these significant transitions will be transmitted globally due to the country's expanding role in the world economy**



Source: IMF



# DEFINING THE THEME

## Stagnant wage growth and growing wealth inequality are fueling political discontent across the developed and emerging world

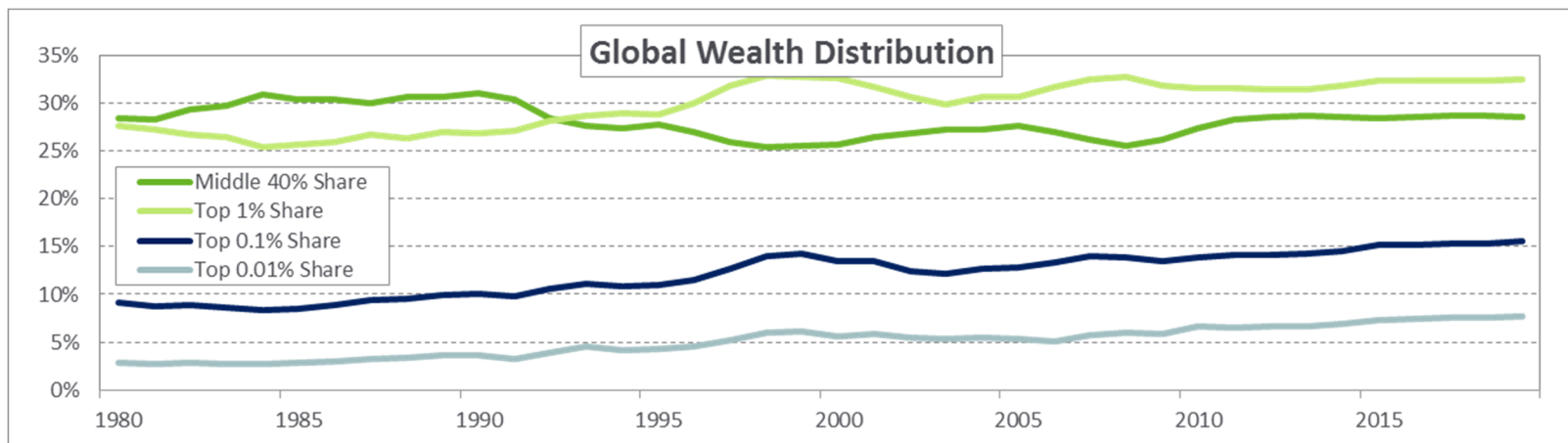
Populist movements across the world are shifting away from the political and economic orthodoxy of the last 50 years

## Globalization is viewed with suspicion by a growing percentage of voters, shifting multiple countries to more nationalist policies

Fatigue over globalization is changing political platforms and increasing trade tensions. A reevaluation of established multilateral relationships likely increases geopolitical risks

## The growth of populist movements, on the “left” and “right”, destabilizes the political order and materializes as Globalization Backlash

An anti-establishment political bias and a drift from political orthodoxy heighten tail-risks in global markets, specifically currency markets, as voting patterns become more volatile with a wider range of outcomes associated with foreign policy, trade policy, and tax rates



Source: World Inequality Lab



# APPENDIX

NEPC, LLC

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# 2020 VS. 2019 EXPECTED RISK & RETURN

		Current Target	Current Allocation
Growth	US Equities	12.7%	16.4%
	Int'l Equities	7.6%	8.2%
	Emerging Int'l Equities	4.7%	5.1%
	Global Equity	15%	16%
	<b>Global Equity</b>	<b>40%</b>	<b>45%</b>
	Private Equity	11.3%	7.5%
	Non-Core Real Estate	2.3%	1.8%
	Opp. Private Credit	1.5%	0.7%
	<b>Private Growth</b>	<b>15%</b>	<b>10%</b>
	<b>TOTAL GROWTH</b>	<b>55%</b>	<b>55%</b>
Income	Equity Options	2.0%	0.0%
	Liquid Credit	2.8%	3.6%
	EMD (Blended)	2.0%	0.0%
	HY Infrastructure	1%	1%
	REITs	1%	1%
	Private Credit	3.2%	2.0%
	<b>TOTAL INCOME</b>	<b>12%</b>	<b>8%</b>
Stability	Long Treasuries	5%	4%
	Systematic Trend	5%	4%
	<b>CPC</b>	<b>10%</b>	<b>8%</b>
	Core Real Estate	3.6%	4.2%
	Private Infrastructure	2.4%	2.0%
	TIPS	2%	1%
	Commodities	0%	0%
	<b>Inflation Protection</b>	<b>8%</b>	<b>8%</b>
	Core Bonds	0%	11%
	IG Corp Credit (Core Bonds)	3.25%	0.00%
	Securitized Credit (Core Bonds)	3.25%	0.00%
	Absolute Return	6.5%	6.6%
	Strategic Cash	2%	3%
	<b>Volatility Protection</b>	<b>15%</b>	<b>21%</b>
<b>TOTAL STABILITY</b>	<b>33%</b>	<b>36%</b>	
Other	Short-Term Cash	0.0%	0.3%
	Russell Overlay	0.0%	0.2%
	<b>TOTAL CASH</b>	<b>0.0%</b>	<b>0.5%</b>

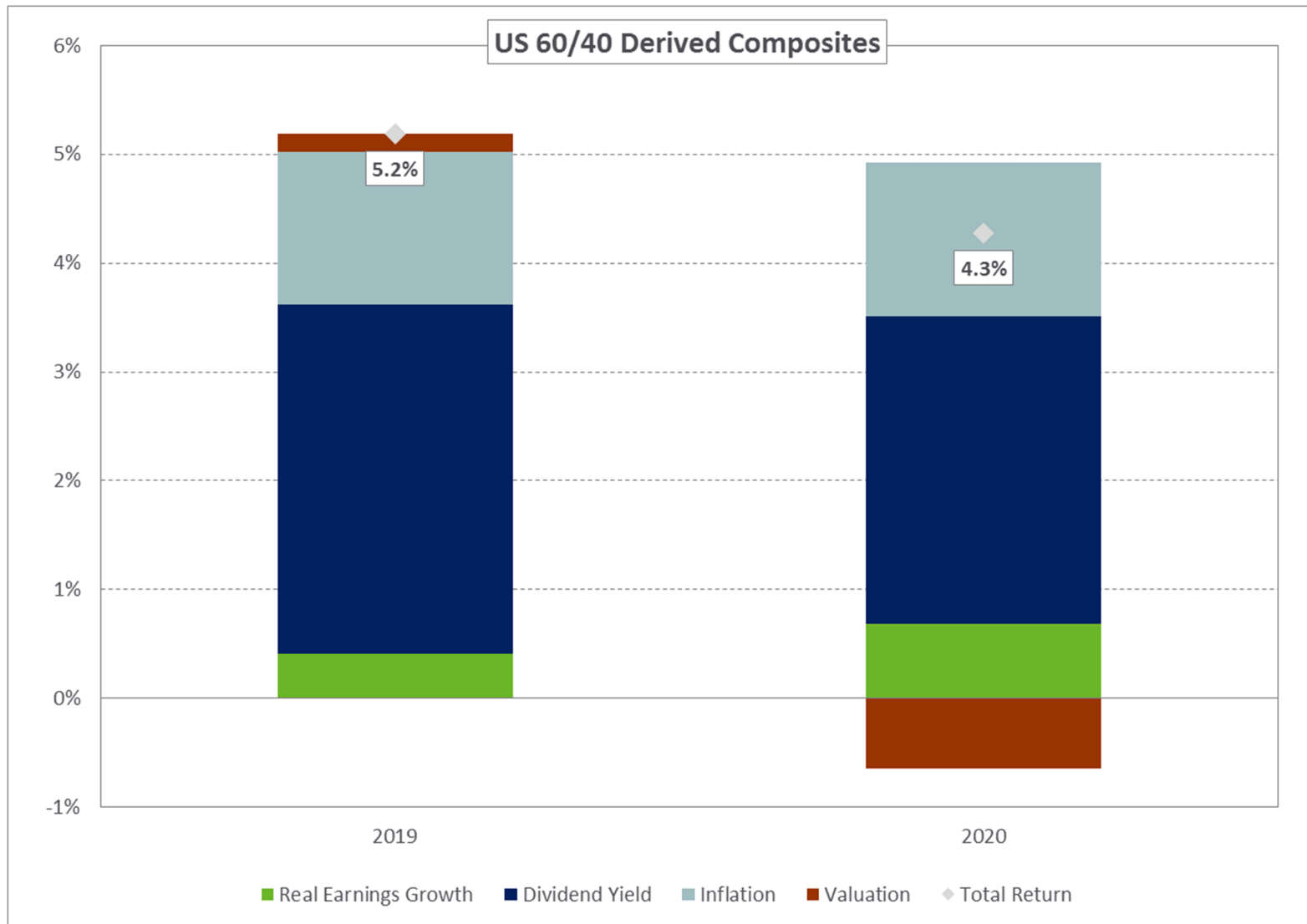
	2020 Assumptions	
	Current Target	Current Allocation
<b>Expected Return 10 yrs</b>	<b>6.16%</b>	<b>5.82%</b>
<b>Expected Return 30 yrs</b>	<b>7.24%</b>	<b>6.90%</b>
<b>Standard Dev</b>	<b>12.37%</b>	<b>11.78%</b>
<b>Sharpe Ratio (10 years)</b>	<b>0.35</b>	<b>0.34</b>
<b>Expected Return 30 yrs Global 60/40</b>	<b>5.80%</b>	

	2019 Assumptions
	2019 Target
<b>Expected Return 5-7 yrs</b>	<b>6.70%</b>
<b>Expected Return 30 yrs</b>	<b>7.81%</b>
<b>Standard Dev</b>	<b>11.90%</b>
<b>Sharpe Ratio (5-7 years)</b>	<b>0.35</b>
<b>Expected Return 30 yrs Global 60/40</b>	<b>6.30%</b>

\*Current allocation is as of 11.30.2019



# US 60/40 BUILDING BLOCKS



Source: NEPC



# EQUITY: ASSUMPTIONS

Equity Building Blocks	
<b>Illiquidity Premium</b>	The additional return expected for investments carrying liquidity risk
<b>Valuation</b>	An input representing P/E multiple contraction or expansion relative to long-term trend
<b>Inflation</b>	Represents market-specific inflation derived from index country revenue contribution and region-specific forecasted inflation
<b>Real Earnings Growth</b>	Reflects market-specific real growth for each equity asset class as a weighted-average derived from index country revenue contribution and forecasted GDP growth
<b>Dividend Yield</b>	Informed by current income distributed to shareholders with adjustments made to reflect market conditions and trends

Asset Class	2020 10-Year Return	2019 10-Year Return
US Large Cap	5.0%	6.2%
US Small/Mid-Cap	5.5%	6.4%
US Micro Cap	7.0%	7.1%
International (Unhedged)	6.0%	7.3%
International Small Cap	6.4%	7.6%
Emerging Markets	9.0%	9.2%
Emerging Markets Small Cap	9.2%	9.6%
China Equity	8.8%	7.9%
Hedge Funds – Long/Short	4.8%	5.7%
<i>Global Equity</i>	6.2%	7.3%
<i>Private Equity</i>	9.4%	10.1%

Source: NEPC

2019 return number reflects NEPC's implied 10-year assumption



# FIXED INCOME: ASSUMPTIONS

Fixed Income Building Blocks	
<b>Illiquidity Premium</b>	The additional return expected for investments carrying liquidity risk
<b>Government Rates Price Change</b>	The valuation change resulting from a change in the current yield curve to forecasted rates
<b>Credit Deterioration</b>	The average loss for credit securities associated with an expected default cycle and recovery rates
<b>Spread Price Change</b>	The valuation change resulting from a change in credit spreads over the duration of the investment and highly sensitive to economic cycles
<b>Credit Spread</b>	Additional yield premium provided by securities with credit risk
<b>Government Rates</b>	The yield attributed to sovereign bonds that do not have credit risk associated with their valuation

Asset Class	2020 10-Year Return	2019 10-Year Return
TIPS	2.2%	3.2%
Treasuries	1.9%	2.5%
Investment-Grade Corporate Credit	3.4%	4.4%
MBS	2.5%	2.8%
High-Yield Bonds	4.1%	5.5%
Bank Loans	4.8%	5.5%
EMD (External)	4.1%	5.3%
EMD (Local Currency)	5.4%	6.8%
Non-US Bonds (Unhedged)	0.2%	0.9%
Municipal Bonds (1-10 Year)	1.9%	3.0%
High-Yield Municipal Bonds	3.2%	3.7%
Hedge Funds – Credit	4.8%	5.9%
<i>Core Bonds</i>	2.5%	3.2%
<i>Private Debt</i>	6.7%	7.6%

Source: NEPC

2019 return number reflects NEPC's implied 10-year assumption





# REAL ASSETS: ASSUMPTIONS

Real Assets Building Blocks	
<b>Illiquidity Premium</b>	The additional return expected for investments carrying liquidity risk
<b>Valuation</b>	The expected change in price of the underlying asset reverting to a long-term real average or terminal value assumption
<b>Inflation</b>	Incorporates the inflation paths as defined by TIPS breakeven expectations and NEPC expected inflation assumptions
<b>Growth</b>	Reflects market-specific growth for each equity asset class as a weighted-average derived from index country revenue contribution and forecasted GDP growth
<b>Real Income</b>	Represents the inflation-adjusted income produced by the underlying tangible or physical asset

Asset Class	2020 10-Year Return	2019 10-Year Return
Commodities	4.0%	4.4%
Midstream Energy	7.4%	8.5%
REITs	5.4%	6.9%
Public Infrastructure	5.3%	-
Public Resource Equity	7.3%	-
Core Real Estate	5.2%	6.0%
Non-Core Real Estate	6.4%	7.0%
Private RE Debt	5.0%	5.8%
Private Real Assets: Energy/ Metals	9.1%	9.7%
Private Real Assets: Infra/Land	5.9%	6.4%

Source: NEPC

2019 return number reflects NEPC's implied 10-year assumption



# 2020 CAPITAL MARKET FORECASTS

Asset Class	10-Year	30-Year	Volatility
Inflation	2.3%	2.5%	-
Cash	1.8%	2.4%	1.00%
US Leverage Cost	2.1%	2.7%	1.00%
Non-US Cash	0.4%	2.1%	1.00%
Large Cap Equities	5.0%	6.7%	16.50%
Small/Mid Cap Equities	5.5%	7.2%	20.00%
Int'l Equities (Unhedged)	6.0%	7.0%	20.50%
Int'l Equities (Hedged)	6.2%	7.2%	17.50%
Int'l Sm Cap Equities (Unhedged)	6.4%	7.5%	22.00%
Emerging Int'l Equities	9.0%	9.2%	28.00%
Emerging Int'l Sm Cap Equities	9.2%	9.2%	31.00%
Hedge Funds - Long/Short	4.8%	5.7%	11.50%
PE Buyout	7.4%	9.0%	18.50%
PE Growth	9.0%	10.4%	30.50%
PE Venture	10.6%	11.5%	45.00%
PE Secondary	6.9%	8.5%	21.00%
PE Non-US	10.7%	11.1%	33.00%
China Equity	8.8%	9.1%	29.50%
US Microcap Equity	7.0%	8.2%	25.00%



# 2020 CAPITAL MARKET FORECASTS

<b>Asset Class</b>	<b>10-Year</b>	<b>30-Year</b>	<b>Volatility</b>
TIPS	2.2%	2.7%	6.50%
Treasuries	1.9%	2.7%	5.50%
IG Corp Credit	3.4%	4.4%	7.50%
MBS	2.5%	3.4%	7.00%
High-Yield Bonds	4.1%	5.6%	12.50%
Bank Loans	4.8%	5.2%	9.00%
EMD (External)	4.1%	5.0%	13.00%
EMD (Local Currency)	5.4%	5.3%	13.00%
Non-US Bonds (Unhedged)	0.2%	2.1%	10.00%
Non-US Bonds (Hedged)	0.3%	2.3%	4.50%
Short TIPS (1-5 yr)	2.2%	2.8%	3.50%
Short Treasuries (1-3 yr)	2.1%	2.7%	2.50%
Short Credit (1-3 yr)	2.9%	3.6%	3.50%
Short HY (1-3 yr)	3.4%	4.1%	8.50%
Municipal Bonds	1.9%	2.6%	7.00%
Municipal Bonds (1-10 Year)	1.9%	2.6%	5.50%
High-Yield Municipal Bonds	3.2%	5.0%	12.00%
Hedge Funds - Credit	4.8%	5.9%	9.00%
PD Credit Opportunities	6.3%	7.5%	14.00%



# 2020 CAPITAL MARKET FORECASTS

Asset Class	10-Year	30-Year	Volatility
PD Distressed	7.6%	8.3%	14.00%
PD Direct Lending	6.3%	7.5%	11.00%
Long Treasuries	1.7%	2.7%	12.00%
Long TIPS	2.2%	2.7%	10.00%
Long Credit	3.4%	4.6%	12.00%
20+ YR STRIPS	1.4%	2.5%	21.00%
Corp - AAA	2.7%	3.6%	7.00%
Corp - AA	2.7%	3.6%	6.50%
Corp - A	3.0%	4.0%	7.50%
Corp - BBB	3.7%	4.6%	8.50%
Corp - BB	4.6%	6.2%	10.50%
Corp - B	4.4%	5.7%	12.50%
Corp - CCC/Below	0.7%	0.8%	20.00%
IG ABS/CMBS	2.8%	3.7%	9.00%
IG CLO	2.9%	3.5%	7.50%
HY Securitized	4.2%	5.6%	11.00%
HY CLO	5.3%	5.8%	11.00%
Taxable Muni Debt	2.8%	4.3%	8.00%
US 10 yr Treasuries	1.9%	2.9%	7.50%



# 2020 CAPITAL MARKET FORECASTS

Asset Class	10-Year	30-Year	Volatility
Non-US 10-Year Sovereign (Hedged)	0.4%	2.6%	5.50%
Commodities	4.0%	4.8%	19.00%
Midstream Energy	7.4%	7.1%	18.50%
REITs	5.4%	6.5%	20.00%
Public Infrastructure	5.3%	6.1%	18.50%
Public Resource Equity	7.3%	7.4%	22.00%
Core Real Estate	5.2%	6.0%	13.00%
Non-Core Real Estate	6.4%	7.4%	19.50%
Private RE Debt	5.0%	5.7%	11.00%
Private Real Assets - Energy/Metals	9.1%	9.0%	32.00%
Private Real Assets - Infra/Land	5.9%	6.7%	12.00%
Hedge Funds - Macro	5.0%	5.4%	9.50%
<i>Global Equity*</i>	6.2%	7.5%	17.79%
<i>Private Equity*</i>	9.4%	10.7%	24.58%
<i>Core Bonds*</i>	2.5%	3.4%	6.01%
<i>Private Debt*</i>	6.7%	7.8%	11.54%
<i>Long Govt/Credit*</i>	2.8%	3.9%	11.25%
<i>Hedge Funds*</i>	5.0%	5.9%	8.18%

\*Assumptions are derived from the underlying equity, credit, and real assets building blocks



# FORECAST TIME HORIZON ADJUSTMENT

## **NEPC has adopted a 10-year return horizon and shifted from a 5-7 year outlook for capital market assumptions**

The 5-7 year time horizon was intended to correspond to the approximate length of the market cycle; recent structural changes in the economic environment signal longer cycles

Themes and valuation shifts are likely to play out over a more extended time frame

This adjustment allows clients to more easily reconcile forecasts from multiple sources

## **The 10-year horizon is representative of a long-term strategic view and should not be conflated with shorter-term market views**

Forecasts are influenced by the path of key inputs such as growth, rates, and inflation, as well as terminal values of valuations, spreads, and profit margins

## **This change in methodology introduces nuances relative to prior years:**

The change in assumptions over time should be muted as convergence toward a terminal value is incorporated over a longer time frame

For 2020, 10-year forecasts would be slightly higher than a 5-7 year forecast as capital markets are assumed to normalize over time

The decline in 2020 capital market expectations is predominantly driven by changes from the 2019 market environment rather than longer time horizon



# BUILDING BLOCKS METHODOLOGY

**Forward-looking asset class models incorporate current and forecasted market and economic data to inform expected returns**

**Quantitative inputs combined with a conversion to long-term terminal values drive the 10-year outlook**

**Asset components are aggregated to capture core drivers of return across asset classes – forming the foundation of our building blocks framework**

**Building block components will differ for equity, fixed income, and real assets**



# US CASH EXPECTATIONS

## Cash is a foundation for all asset classes

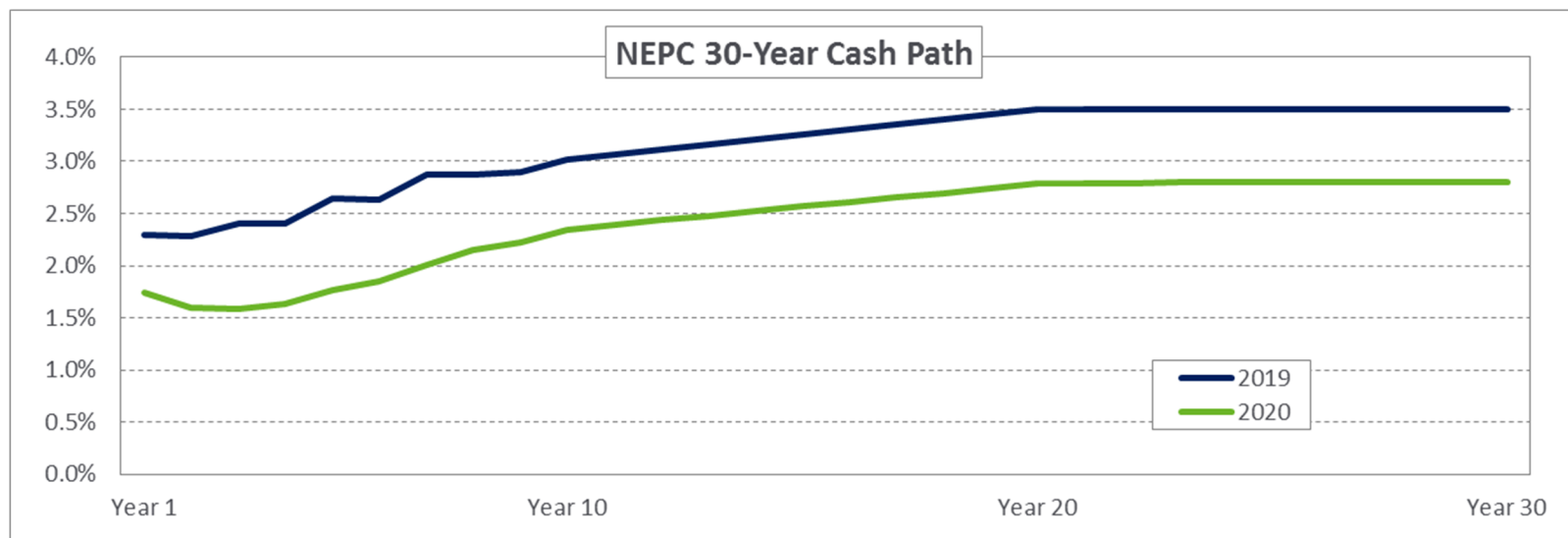
The assumption flows through as a direct building block component and as a relative value adjustment (cash + risk premia) in long-term return projections

Long-term cash assumption is a result of forecasted inflation plus a real interest rate path

## US nominal rates are at a historically low point for NEPC's forecasts

This level reflects recent rate cuts by the Federal Reserve and muted inflation pressures

Market expectations for a relatively flat curve and negligible inflation expectations create a low and flat expected path for cash

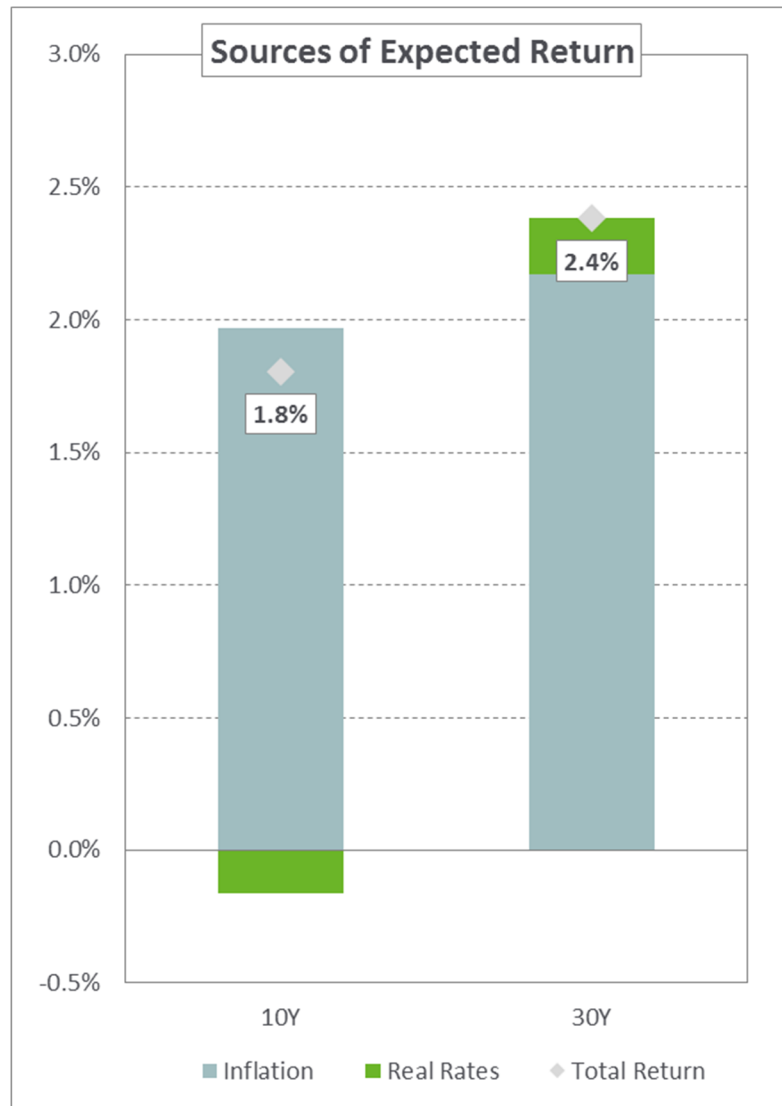


Source: Bloomberg, FactSet, NEPC





# MACRO FOCUS: CASH



Source: NEPC

**Rate cuts by the Fed and gravity of low global rates across developed world have depressed real yields across the curve**

**Rates outlook is lower for longer with little policy normalization priced into long-term yields**

**Market interest rate pricing in US (and across the world) reflects an expectation that key monetary authorities will keep rates low**

Reflects flexibility due to limited inflation pressure

Acknowledges policymaker caution of having enough available firepower to navigate a downturn

# US INTEREST RATE EXPECTATIONS

## Real yields moved materially lower relative to last year with Fed rate cuts

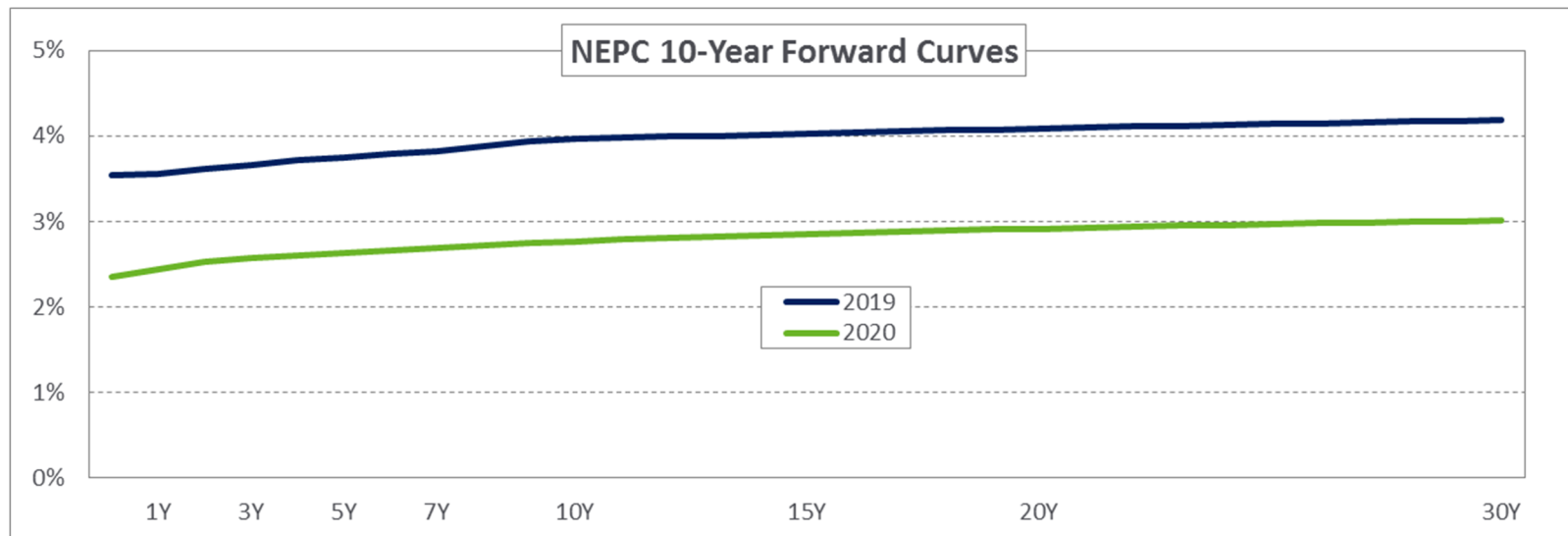
The real yield curve shifted down about 60 bps across the curve and continued to flatten over the past year

Slumping real yields reflect lower growth expectations

## Long-term yields have been revised down considerably from last year

Low real rates depress the return outlook for risk assets over the long-term

Fed's shift to a prolonged easing environment and lower inflation expectations have suppressed yield forecasts



Source: FactSet, NEPC



# GLOBAL INTEREST RATE EXPECTATIONS

## Government bond yields remain low across much of the world

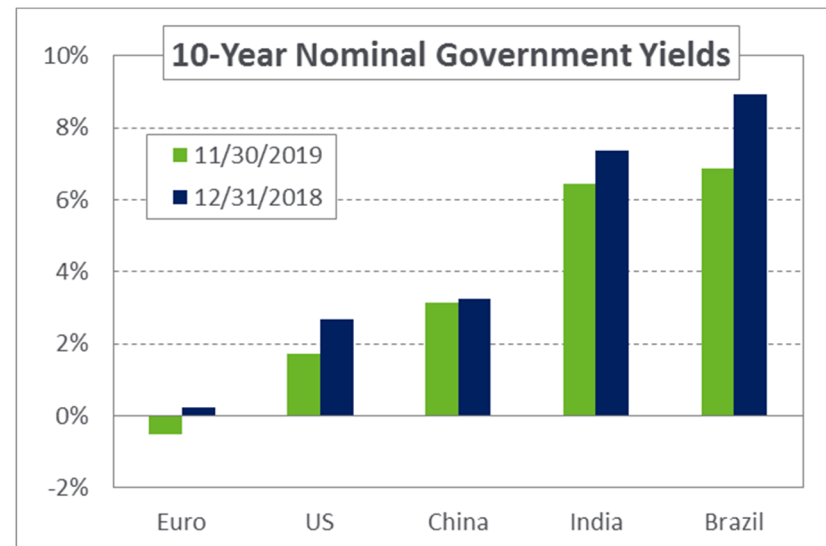
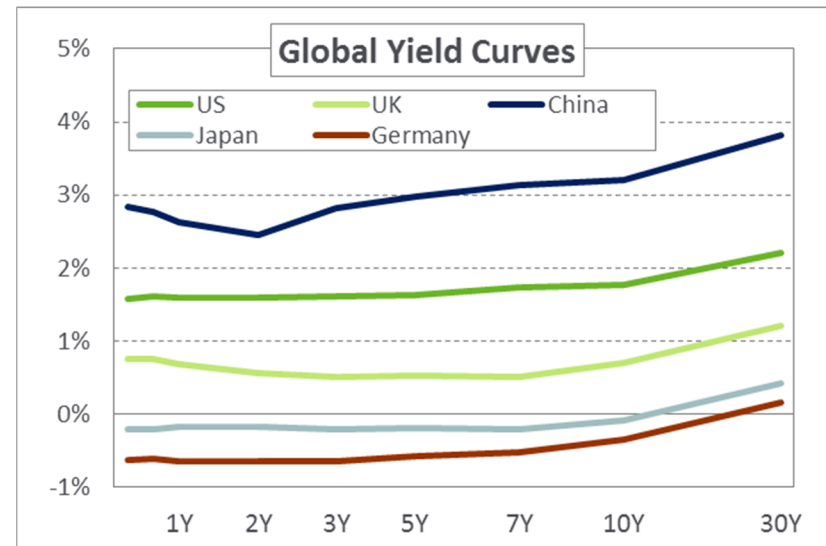
Several developed country yield curves outside the US are in negative territory with weak growth, continued monetary stimulus and muted inflation

The US curve remains low, but positive

## The outlook for non-US developed fixed income is poor given negative real and nominal yields

## Emerging market local interest rates are attractive relative to negative real yields in much of the developed world

While real rates have declined, positive real rates provide a cushion for EM central banks to cut interest rates and ease monetary conditions as needed



Source: (Top) FactSet, NEPC  
Source: (Bottom) FactSet, NEPC



# INFLATION OVERVIEW

## **Inflation is an integral component of our asset allocation assumptions**

Represents an essential building block for developing asset class returns

## **Inflation building blocks are model-driven and informed by multiple sources for both the US and global asset classes**

Includes forecasts from international organizations (e.g. IMF), local consumer and producer price indices, break-even inflation expectations, and global interest rate curves

## **NEPC's US inflation expectation has declined relative to last year**

This decline reflects market data including US CPI and IMF forecasts

## **Market-based inflation expectations reflect little to no inflation pressure**

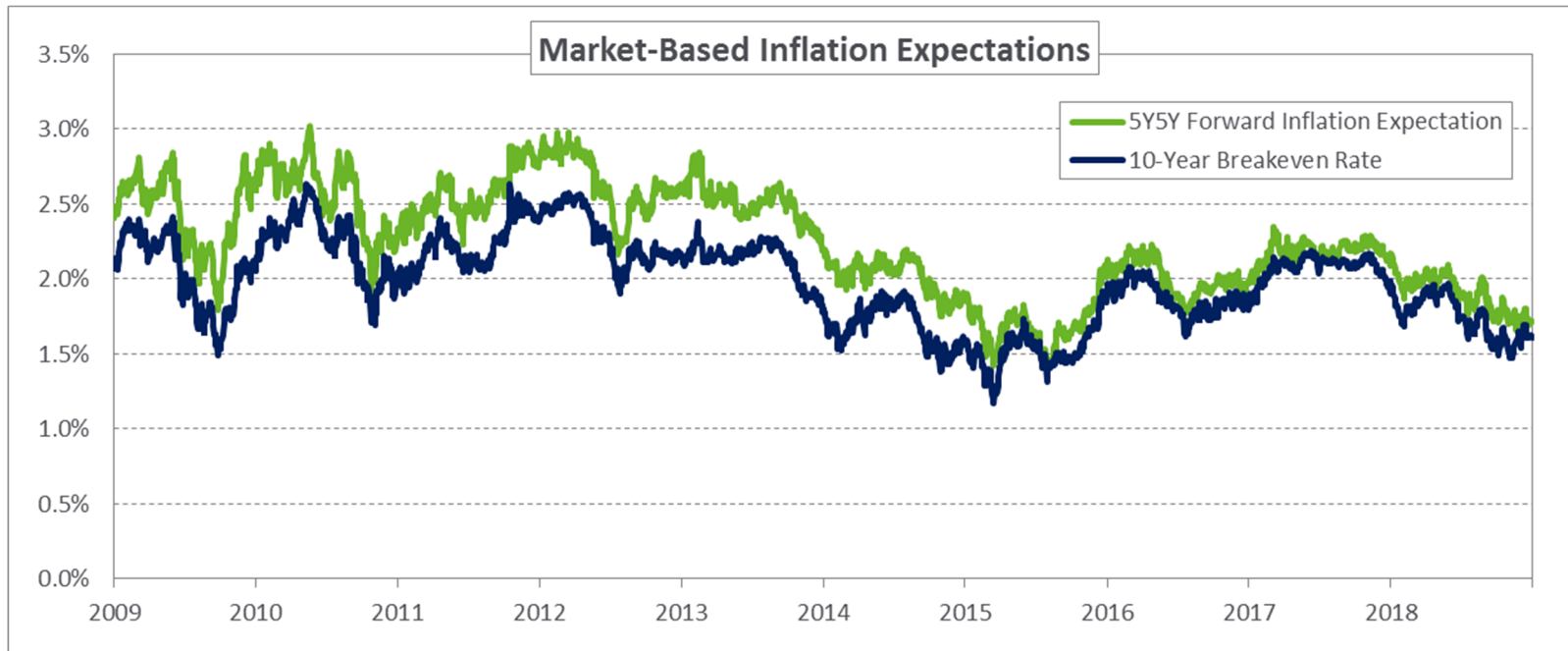
Inflation break-evens (difference between Treasury and TIPS yields) suggest inflation will be near current levels for the next twenty years

NEPC return assumptions incorporate higher inflation expectations than break-evens, but are in line with IMF forecasts and well below long-term averages

<b>Region</b>	<b>10-Year Inflation Assumption</b>	<b>30-Year Inflation Assumption</b>
United States	2.3%	2.5%



# US INFLATION



Source: FactSet, NEPC

## **US inflation has slowly trended higher, but has yet to accelerate despite resilient economic growth and a tight labor market**

Underlying inflation has risen with modest wage increases amidst strong employment

Market-based inflation expectations have declined considerably

## **Suppressed energy prices have minimized overall inflation price pressures**

Energy is historically the most volatile component of CPI and a sustained decline in prices can cause inflation to remain muted



# PRIVATE MARKETS METHODOLOGY

**Private market assumptions are constructed using betas to public market assumptions with an added illiquidity premia based on historical returns analysis relative to appropriate public market equivalents**

Private Equity – Buyout: 25% US Large Cap, 75% US Small/Mid Cap

Private Equity – Secondary: 25% US Large Cap, 75% US Small/Mid Cap

Private Equity – Growth: 50% US Small/Mid Cap, 50% US Microcap

Private Equity – Venture: 25% US Small/Mid Cap, 75% US Microcap

Private Equity – Non-US: 70% International Small Cap, 30% Emerging Small Cap

*PE Composite: 34% Buyout, 34% Growth, 15 % Non-US, 8.5% Secondary, 8.5% Venture*

Private Debt – Direct Lending: 100% Bank Loans

Private Debt – Distressed: 20% US Small/Mid Cap, 60% US High Yield, 20% Bank Loans

Private Debt – Credit Opportunities: 24% US SMID Cap, 33% US High Yield, 33% Bank Loans

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

Private Real Assets – Energy: 30% Comm., 35% Midstream, 35% Public Resource Equity

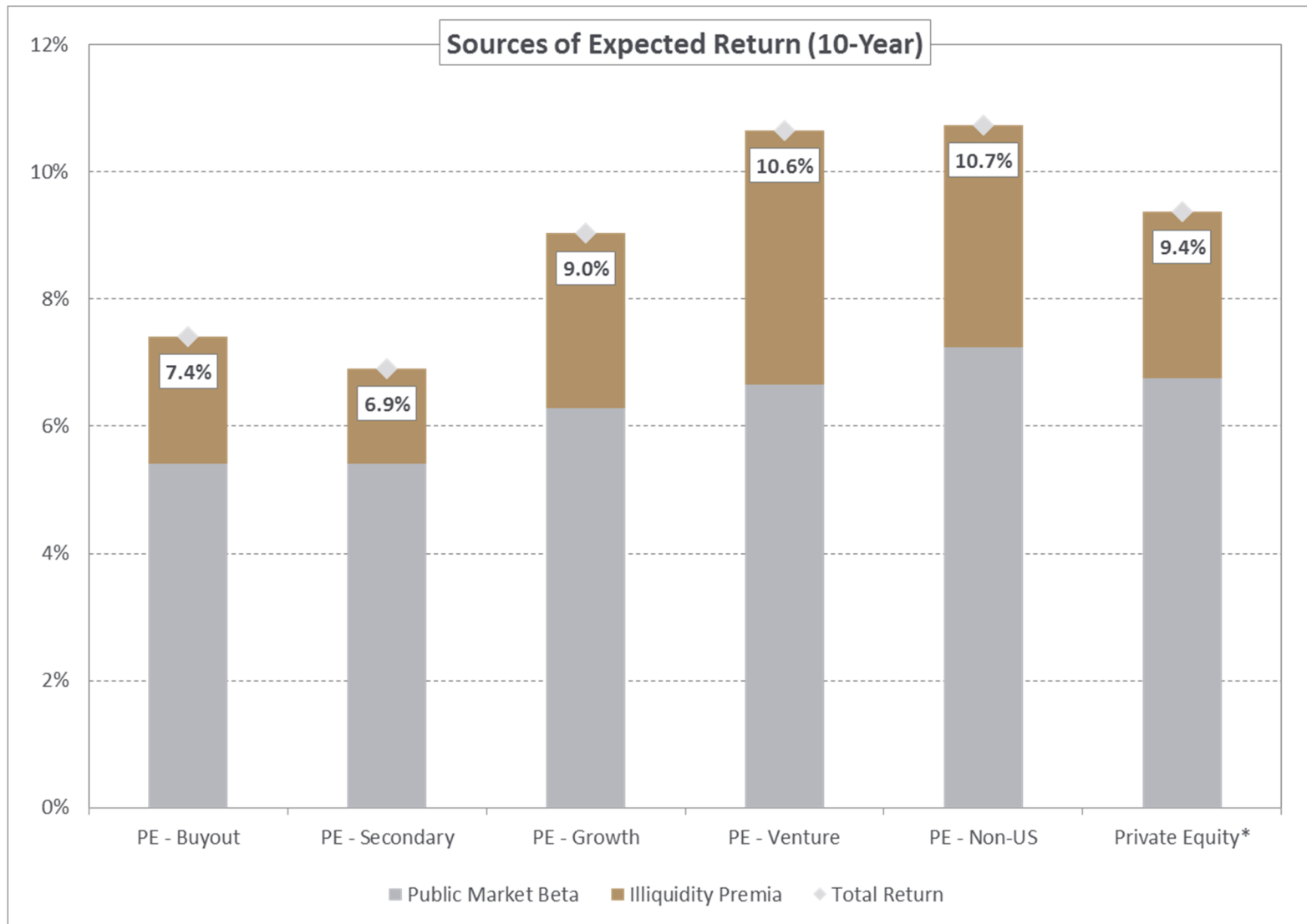
Private Real Assets - Infra/Land: 30% Commodities, 70% Public Infrastructure

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

**Changes to private market return assumptions will reflect changes to the underlying public market assumption and the illiquidity premia**



# PRIVATE EQUITY BUILDING BLOCKS

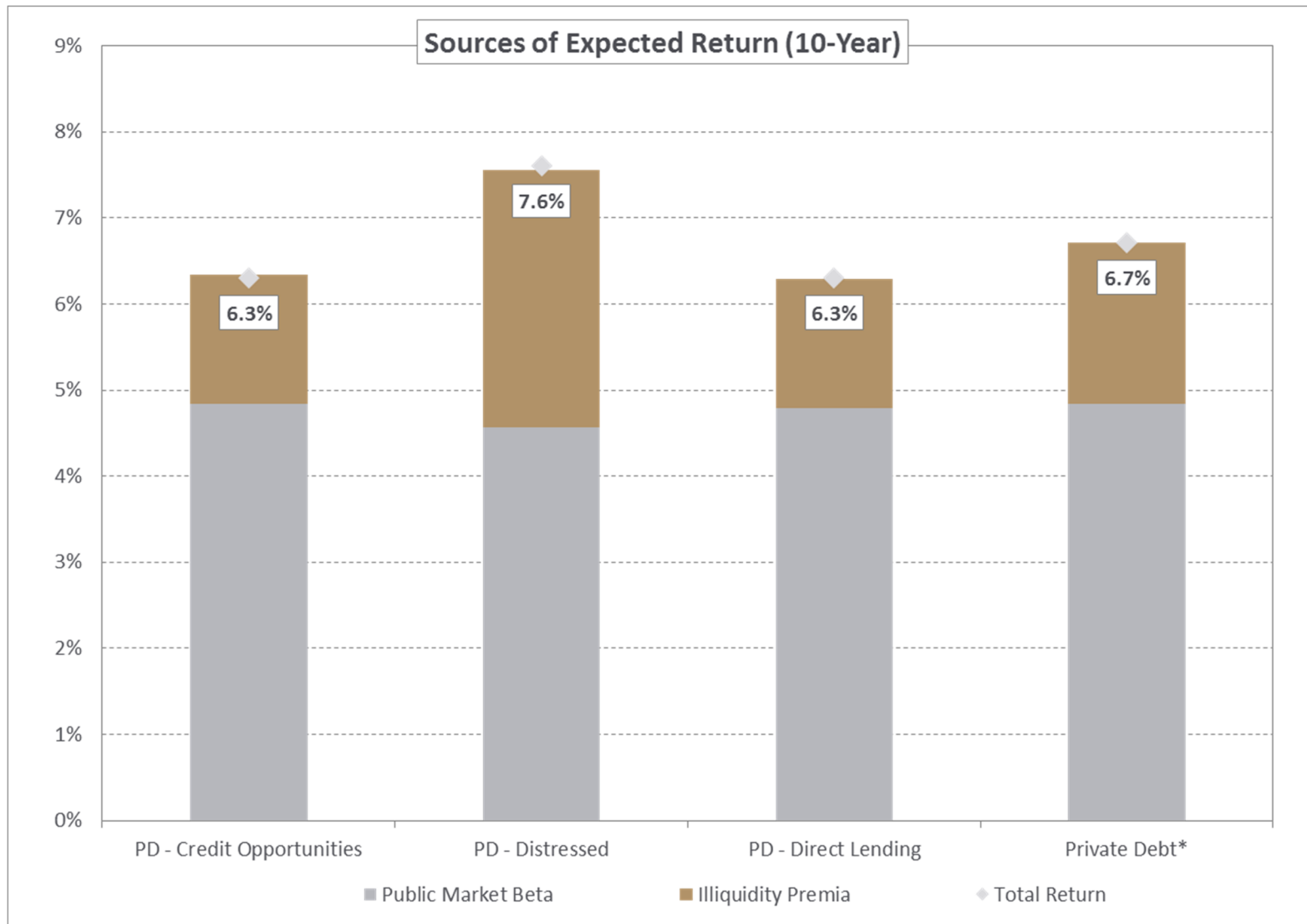


Source: NEPC

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



# PRIVATE DEBT BUILDING BLOCKS



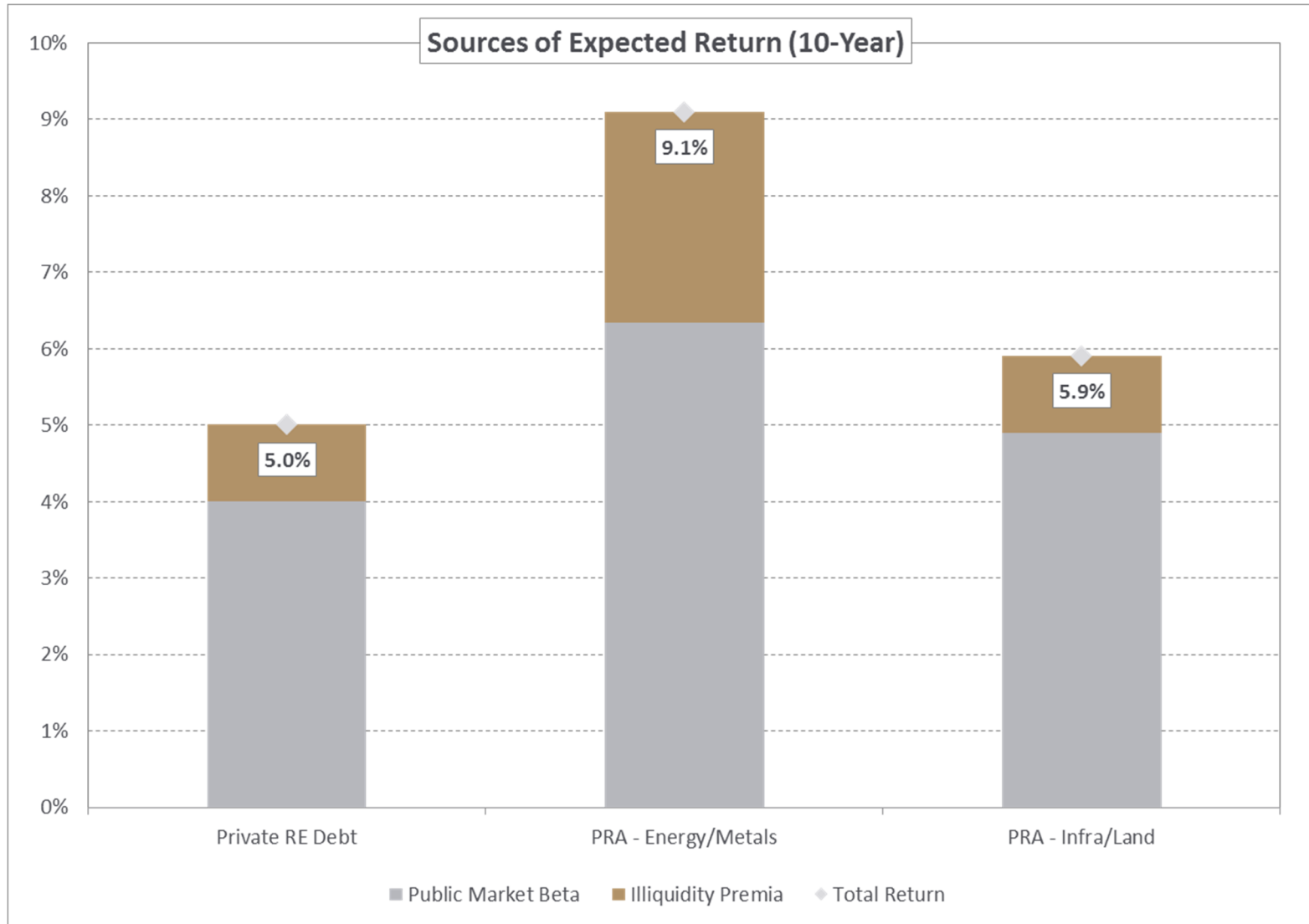
Source: NEPC

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





# PRIVATE REAL ASSETS BUILDING BLOCKS



Source: NEPC

