

# STATE INVESTMENT COUNCIL MEETING

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Asset Allocation Discussion

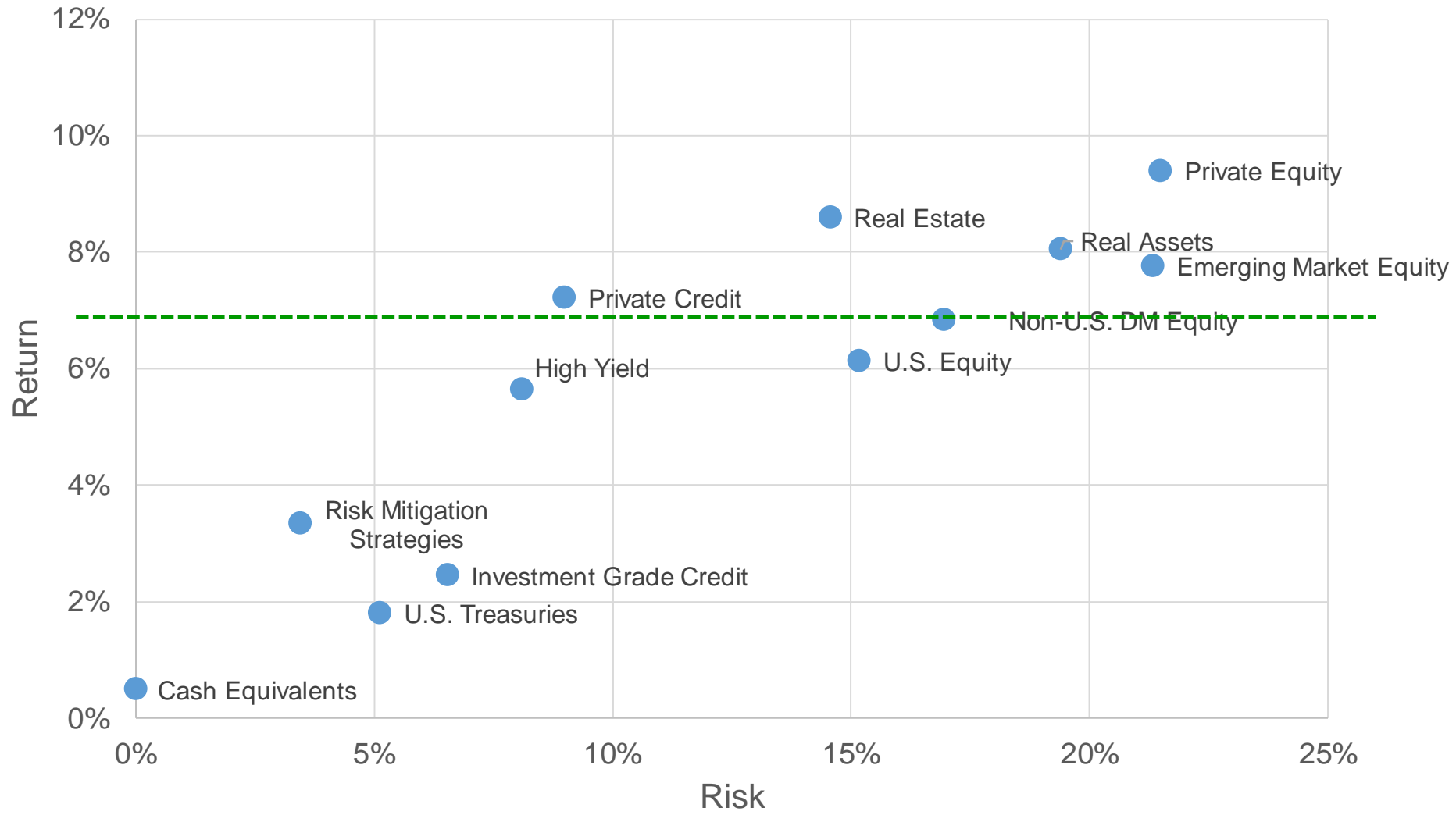
July 22, 2020

## Capital Market Assumptions

	FY21		FY20		Correlation Matrix Recommendation											
	Compound Return	Vol	Compound Return	Vol	1	2	3	4	5	6	7	8	9	10	11	12
1 U.S. Equity	6.14%	15.19%	6.12%	17.90%	1.00											
2 Non-U.S. Developed Market Equity	6.83%	16.95%	6.71%	20.00%	0.78	1.00										
3 Emerging Market Equity	7.77%	21.34%	7.64%	27.00%	0.72	0.75	1.00									
4 Private Equity	9.40%	21.50%	9.00%	20.50%	0.70	0.73	0.70	1.00								
5 Real Assets	8.05%	19.40%	7.90%	17.70%	0.55	0.63	0.58	0.50	1.00							
6 Real Estate	8.60%	14.57%	7.61%	12.54%	0.30	0.27	0.18	0.55	0.54	1.00						
7 High Yield	5.64%	8.11%	4.69%	12.00%	0.62	0.59	0.65	0.67	0.54	0.11	1.00					
8 Private Credit	7.22%	8.99%	7.60%	8.35%	0.74	0.65	0.66	0.83	0.42	0.68	0.89	1.00				
9 Investment Grade Credit	2.46%	6.54%	4.10%	5.60%	0.08	0.07	0.08	0.18	0.29	-0.07	0.37	0.49	1.00			
10 Cash Equivalents	0.50%	0.00%	2.80%	0.00%	0.09	0.05	0.07	0.04	0.02	0.25	0.14	-0.11	0.50	1.00		
11 U.S. Treasuries	1.81%	5.13%	2.61%	3.90%	-0.06	-0.05	-0.05	-0.51	-0.15	-0.13	0.05	-0.16	0.83	0.61	1.00	
12 Risk Mitigation Strategies	3.34%	3.46%	4.61%	3.68%	0.49	0.49	0.49	0.22	0.17	0.26	0.30	0.34	0.27	0.11	-0.15	1.00

Source: Aon, Aksia TorreyCove, Cliffwater, Division of Investment, Hamilton Lane, and Horizon

# Risk versus Return by Asset Class and Strategy



Source: Aon, Aksia TorreyCove, Cliffwater, Division of Investment, Hamilton Lane, and Horizon

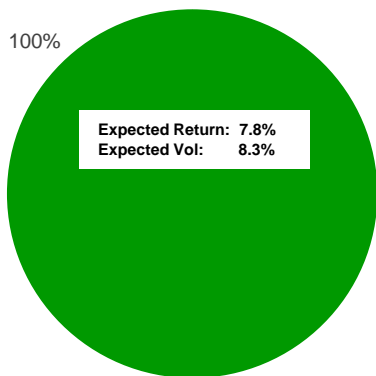
# Asset Allocation With Expectations for Lower Investment Returns

### Historical Yields for Bonds



## Expected Returns Are Lower and Investment Portfolios Are More Complex

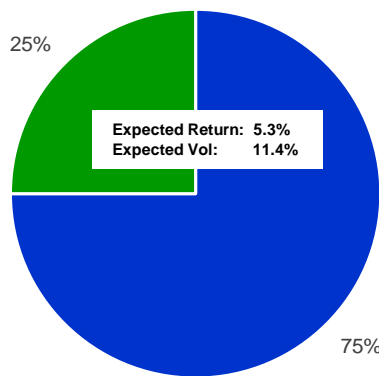
### 1995 – All Bond Portfolio



In 1995, an all-bond portfolio could have been structured to earn an attractive return for a pension plan.

Today, a portfolio comprised largely of stocks is expected to fall short of most plans' actuarial assumptions.

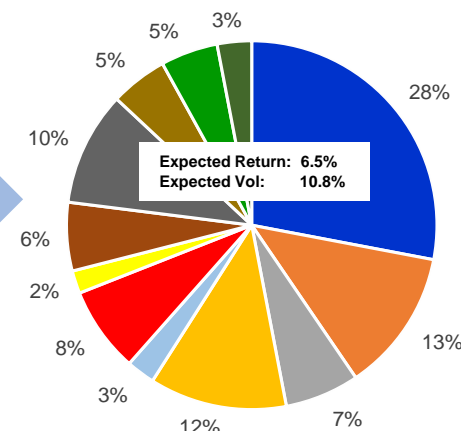
### 2020 – Stock and Bond Portfolio



A well diversified portfolio is better positioned for higher returns with less risk.

An important trade-off, however, is less liquidity for some of the highest yielding asset classes.

### 2020 – Well Diversified Portfolio



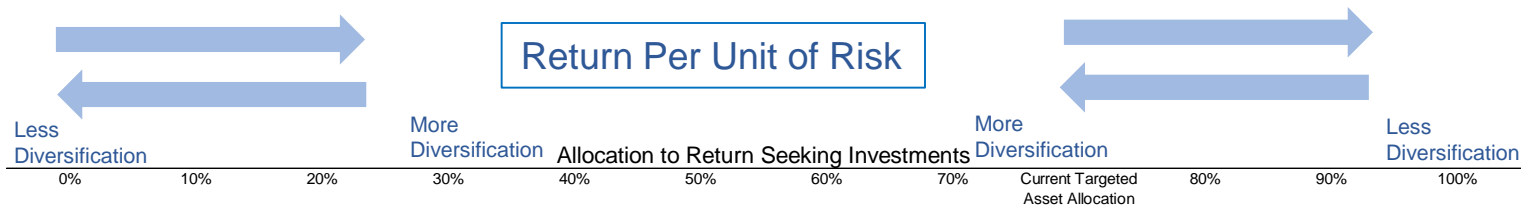
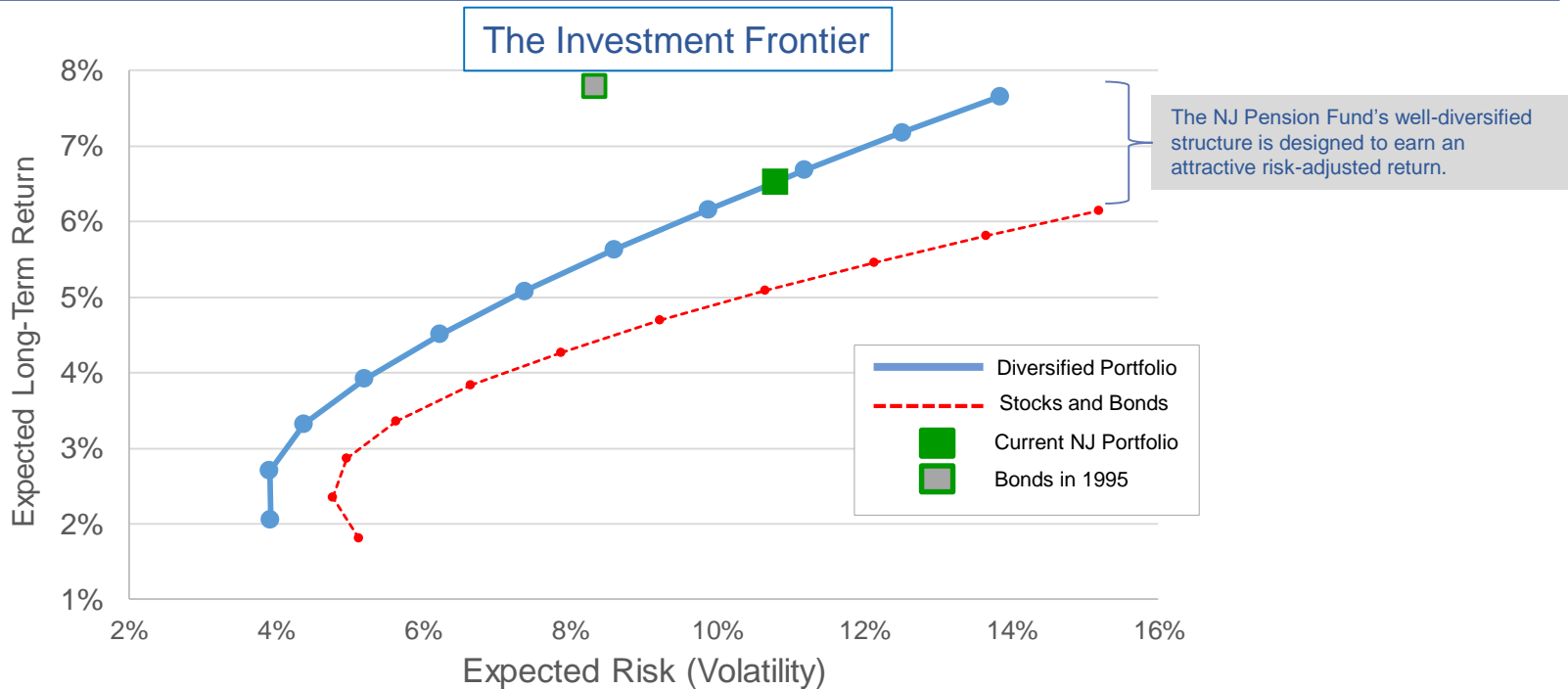
- U.S. Equity
- Real Assets
- IG Credit

- Non-U.S. DM Equity
- Real Estate
- Cash

- EM Equity
- High Yield
- U.S. Treasuries

- Private Equity
- Private Credit
- RMS

# The NJ Pension Fund Seeks To Earn the Highest Return Per Unit of Risk



Expected Long-Term Return	2.06%	2.70%	3.32%	3.92%	4.51%	5.08%	5.63%	6.16%	6.52%	6.68%	7.18%	7.66%
Well Diversified Portfolio Expected Risk	3.92%	3.26%	4.12%	5.28%	6.58%	7.96%	9.38%	10.83%	11.78%	12.29%	13.77%	15.25%
Return Per Unit of Risk	0.53	0.83	0.81	0.74	0.69	0.64	0.60	0.57	0.55	0.54	0.52	0.50

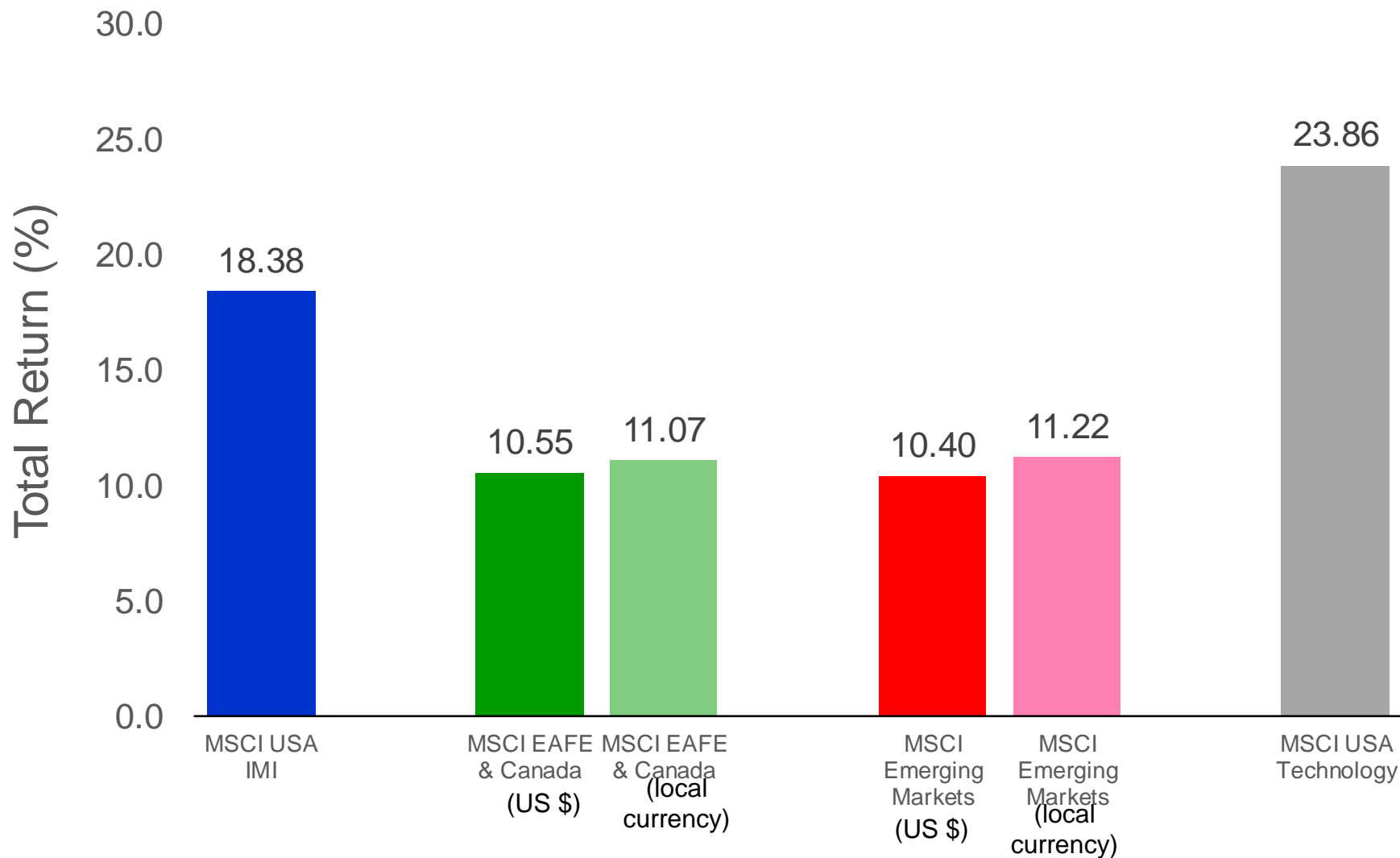
Expected Long-Term Return	1.81%	2.35%	2.87%	3.36%	3.83%	4.27%	4.69%	5.09%	5.35%	5.46%	5.81%	6.14%
Stocks and Bonds Expected Risk	5.13%	4.77%	4.96%	5.63%	6.64%	7.87%	9.22%	10.65%	11.69%	12.13%	13.65%	15.19%
Return Per Unit of Risk	0.35	0.49	0.58	0.60	0.58	0.54	0.51	0.48	0.46	0.45	0.43	0.40

## Lessons From the Asset-Liability Study Still Apply

	30 year Economic Cost (in \$ billions)		30 year Ending Funded Ratio (MVA / AL)	
	Base Case	Downside Risk	Base Case	Downside Risk
0% Return-Seeking	\$170.6	\$183.2	45%	28%
10% Return-Seeking	\$166.2	\$180.5	49%	30%
20% Return-Seeking	\$161.4	\$179.0	54%	31%
30% Return-Seeking	\$156.4	\$178.2	61%	32%
40% Return-Seeking	\$151.4	\$178.0	68%	32%
50% Return-Seeking	\$146.2	\$178.3	75%	32%
60% Return-Seeking	\$140.7	\$179.0	82%	32%
70% Return-Seeking	\$135.7	\$179.7	89%	31%
<b>Current Targeted Asset Allocation</b>	<b>\$132.9</b>	<b>\$180.2</b>	<b>93%</b>	<b>30%</b>
80% Return-Seeking	\$130.8	\$180.8	97%	29%
90% Return-Seeking	\$126.2	\$182.0	104%	28%
100% Return-Seeking	\$121.9	\$183.3	112%	27%

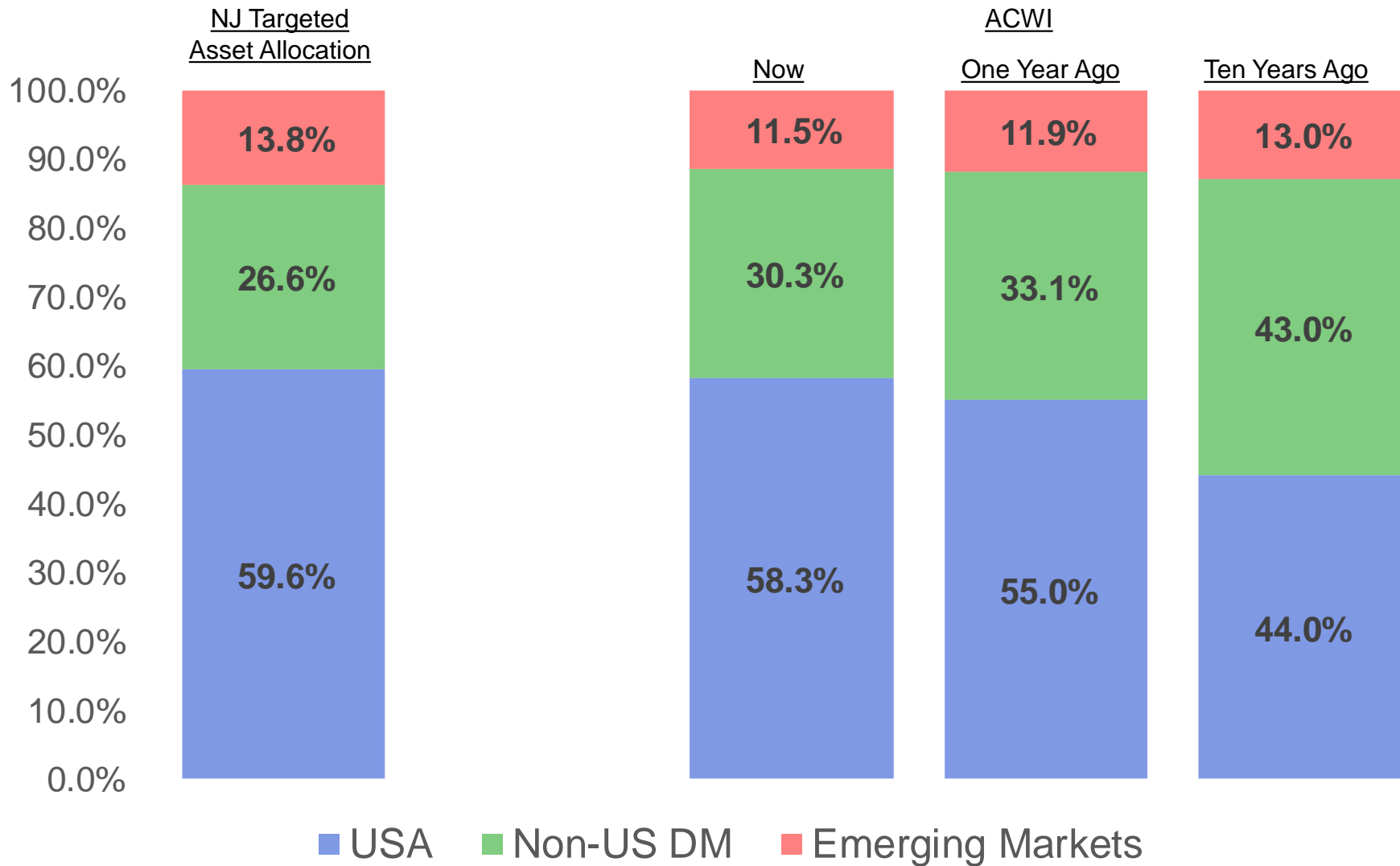
## Home Country Bias within the Global Equity Allocation Has Benefited the Pension Fund

Global Public Equity Returns  
March 9, 2009 – February 19, 2020



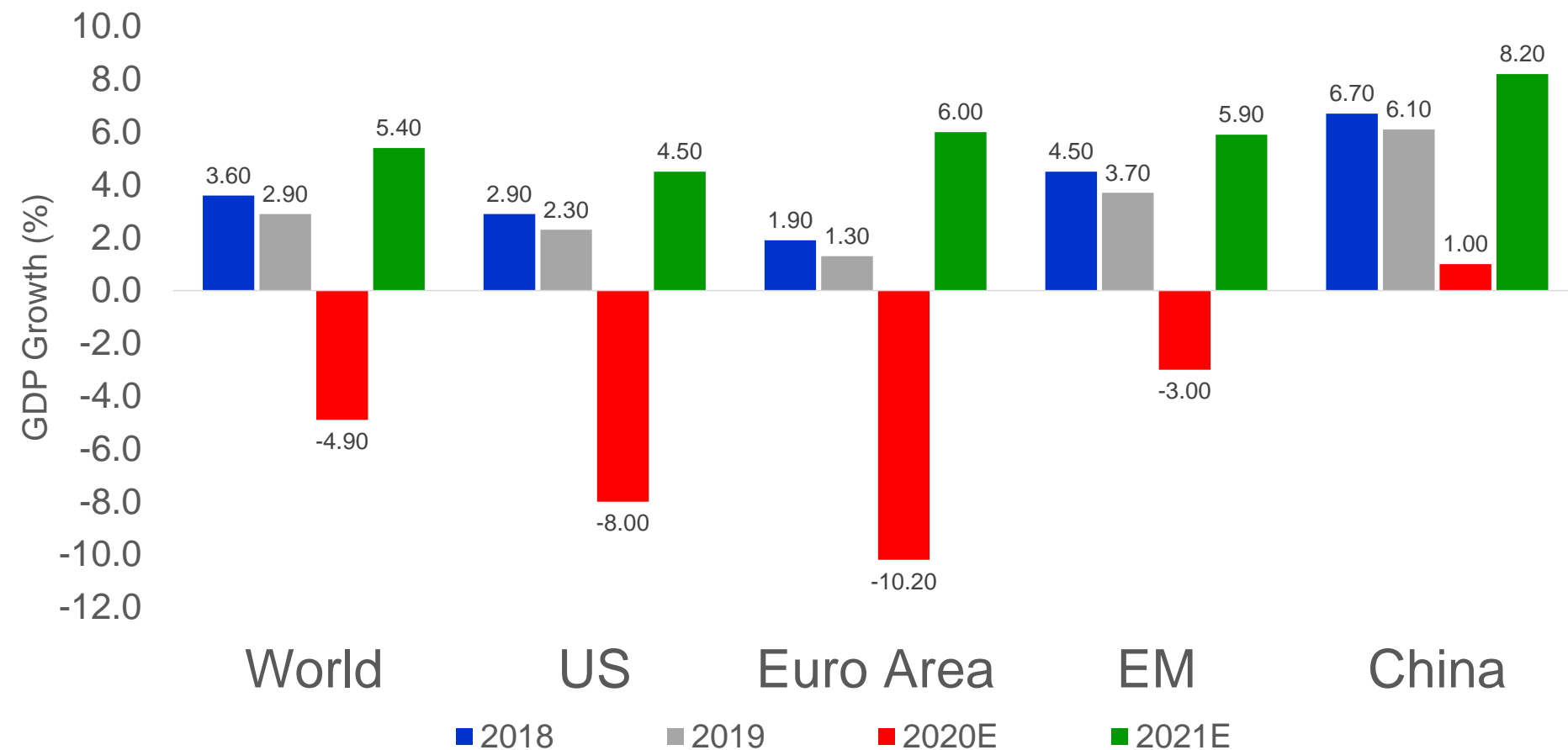
## Global Equity Allocation

### NJ Global Equity Allocation vs ACWI



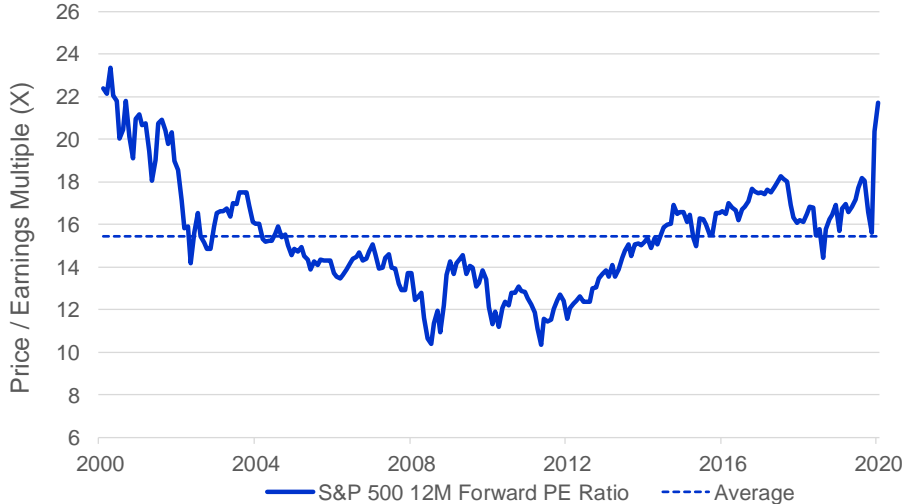


## The COVID Pandemic Has Halted the Global Economy



# Global Equity Market Valuations

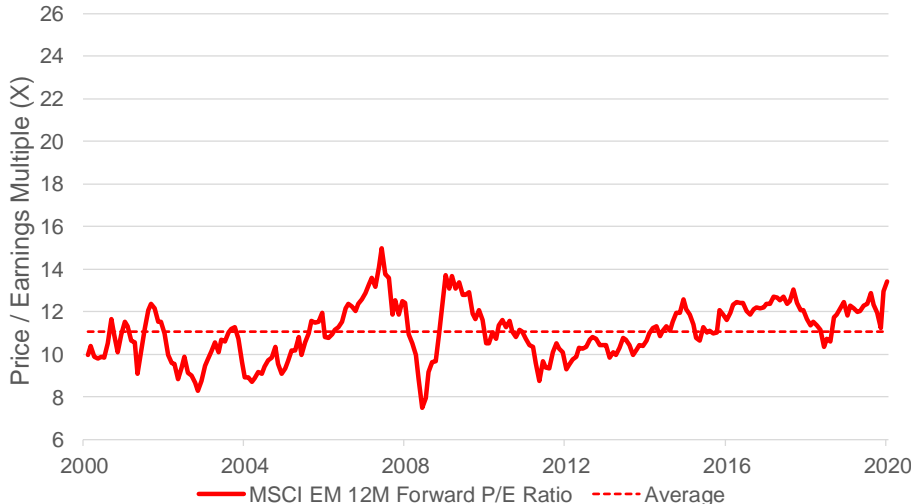
U.S. Equity Valuations



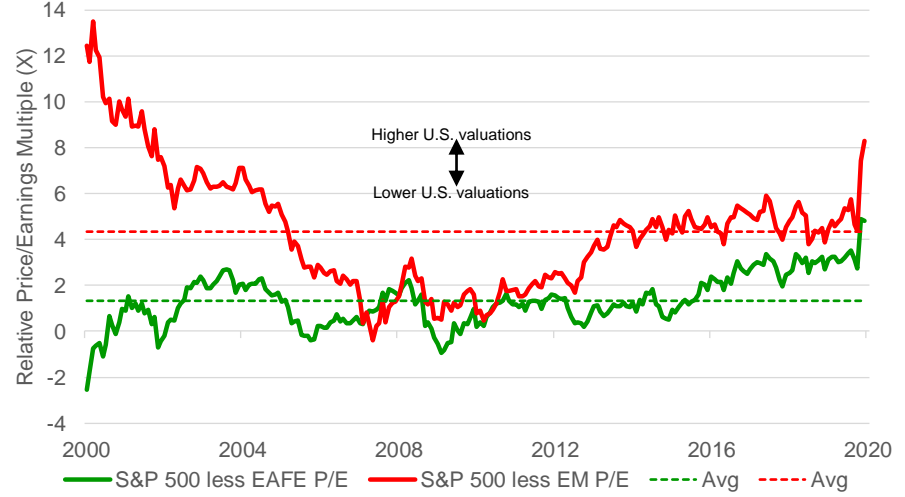
Non-U.S. DM Equity Valuations



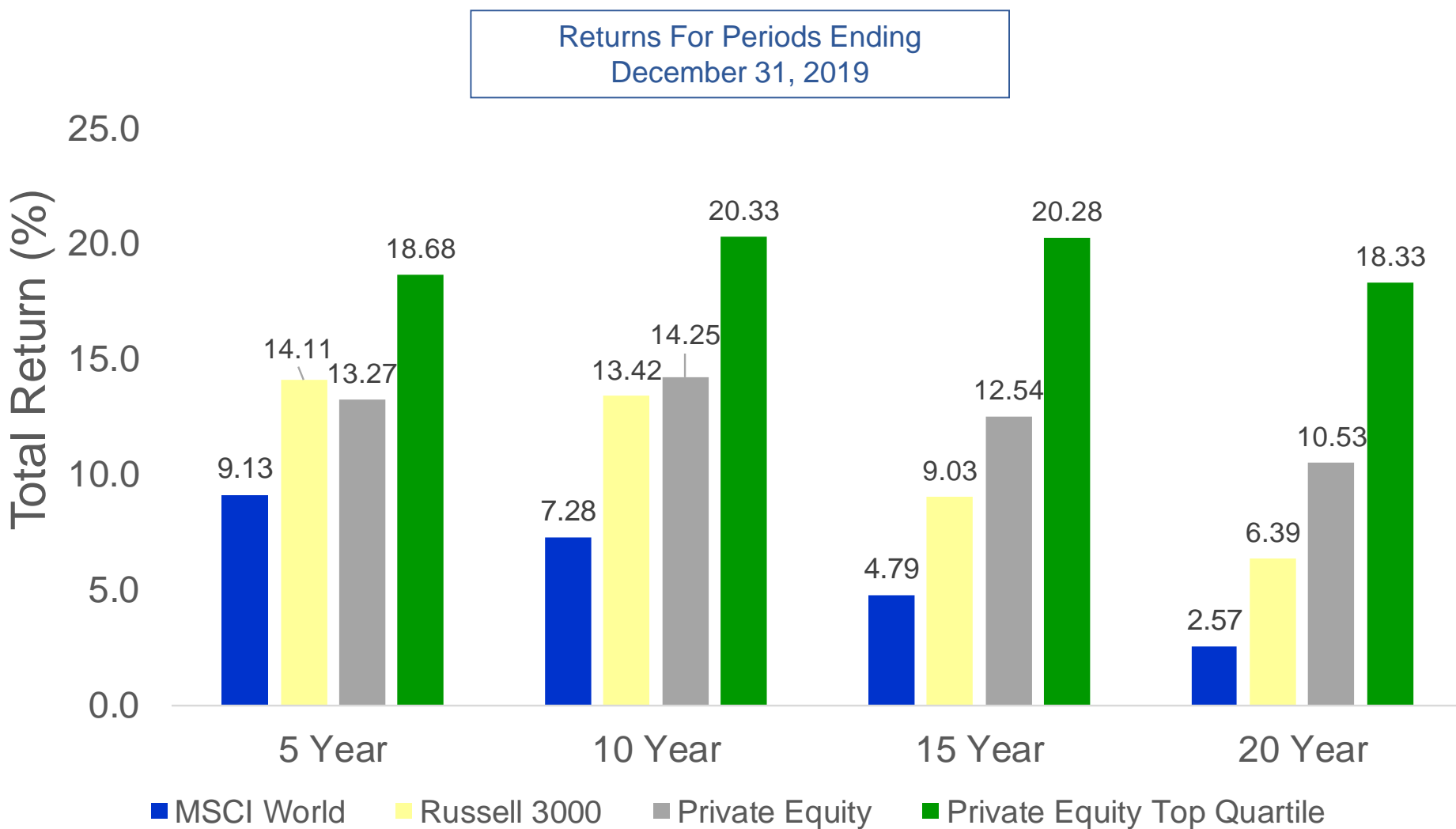
Emerging Market Equity Valuations



Global Equity Valuation Comparisons



## Private Equity versus Public Equity

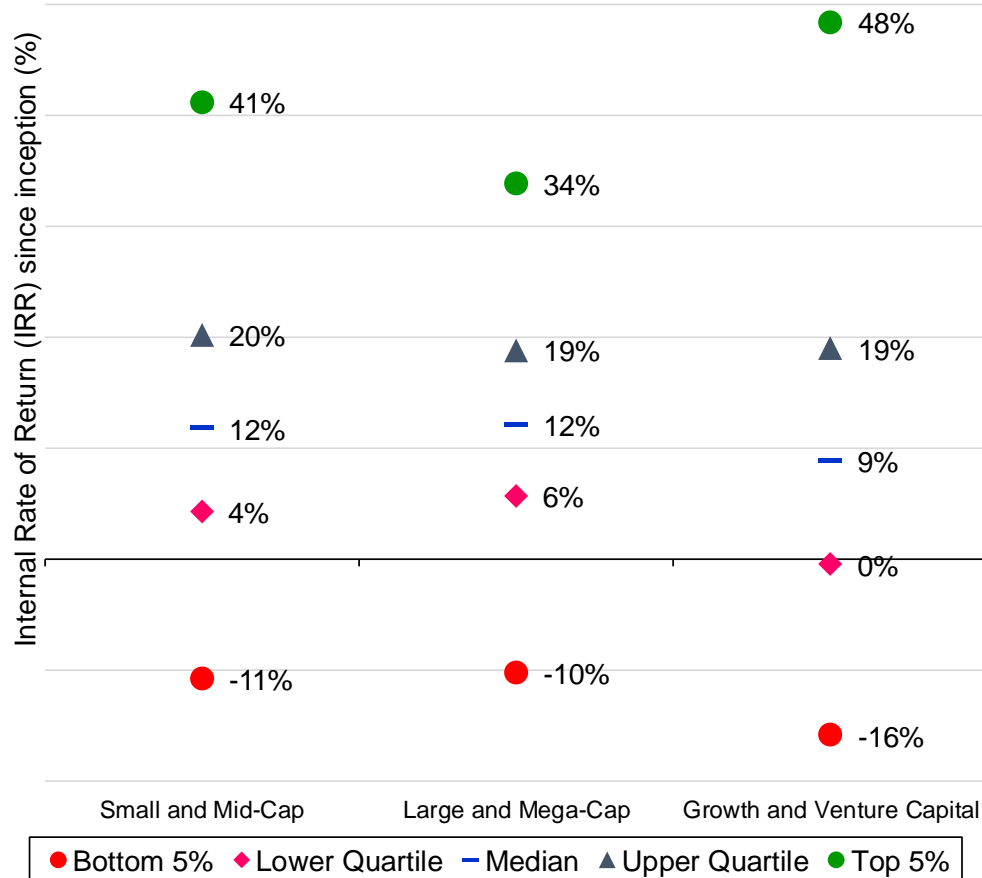


Note: Private Equity returns are global and include buyout, growth equity, and venture

Source: Cambridge and Aksia TorreyCove

## There Has Been A Wide Range of Returns in Private Equity

### Private Equity Quartile Returns Since Inception

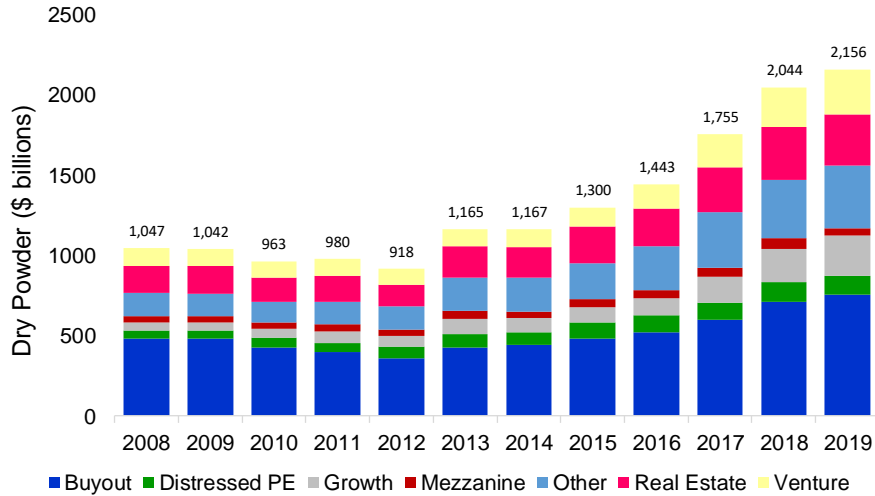


### Private Equity Quartile Returns By Vintage

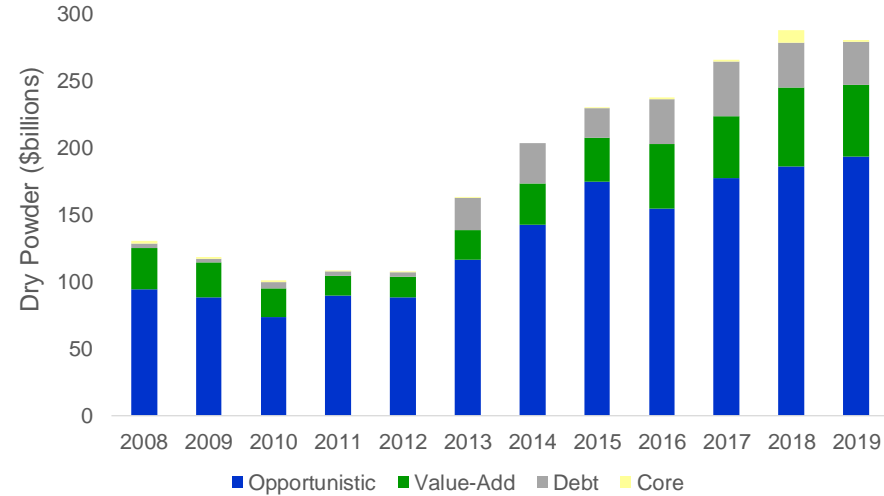
Vintage Year	Median-Lower Spread	Upper-Median Spread	Total Spread
2000	8.0%	8.9%	16.8%
2001	8.6%	11.3%	19.9%
2002	9.0%	12.0%	21.0%
2003	8.5%	8.5%	17.0%
2004	7.7%	6.7%	14.4%
2005	6.1%	5.1%	11.2%
2006	6.7%	5.8%	12.6%
2007	5.8%	5.6%	11.4%
2008	5.9%	7.7%	13.6%
2009	6.6%	7.4%	14.0%
2010	7.7%	8.8%	16.5%
2011	6.2%	6.2%	12.4%
2012	8.1%	6.2%	14.3%
2013	5.6%	6.5%	12.1%

# Private Market Dry Powder and Fundamentals

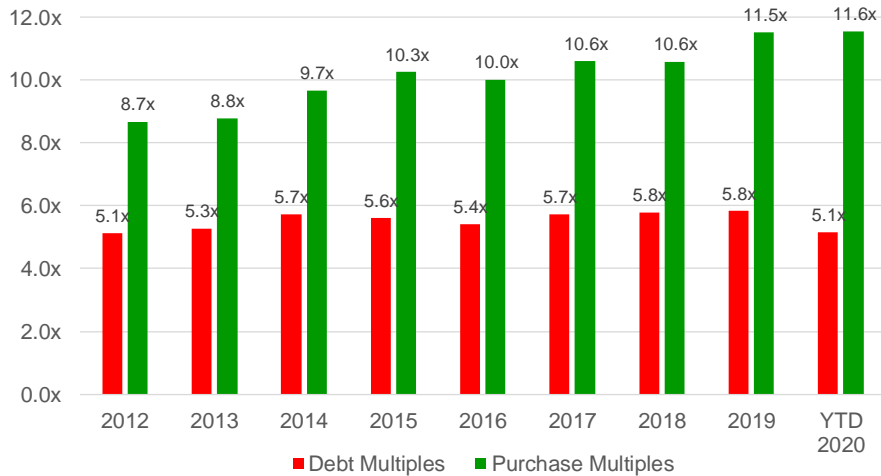
## Private Equity Dry Powder



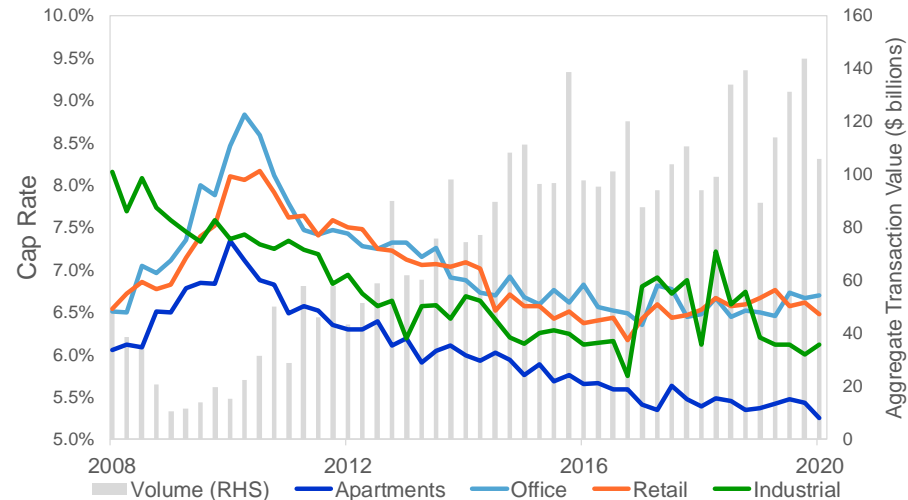
## Real Estate Dry Powder



## Private Equity Leverage and Purchase Multiples

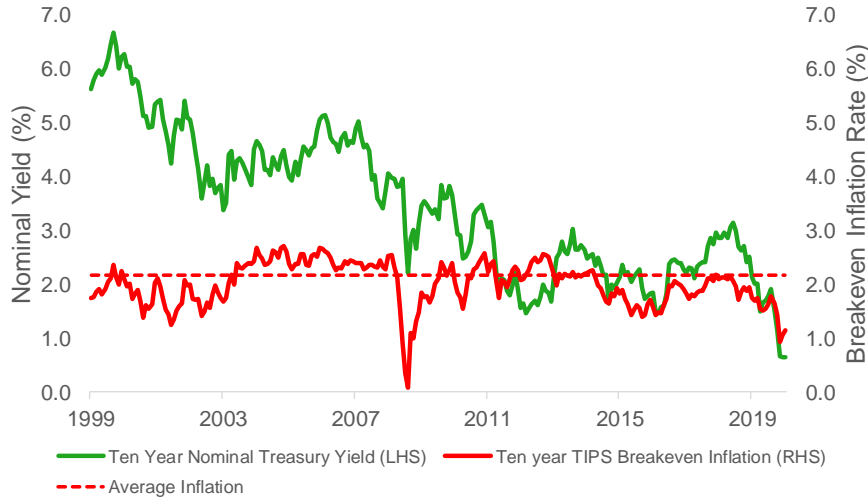


## Real Estate Cap Rates

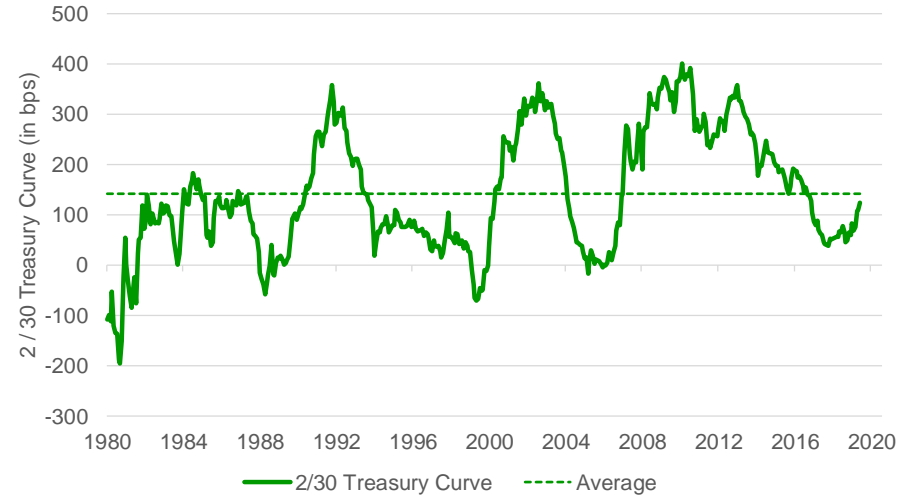


# U.S. Treasury and Credit Market Valuations

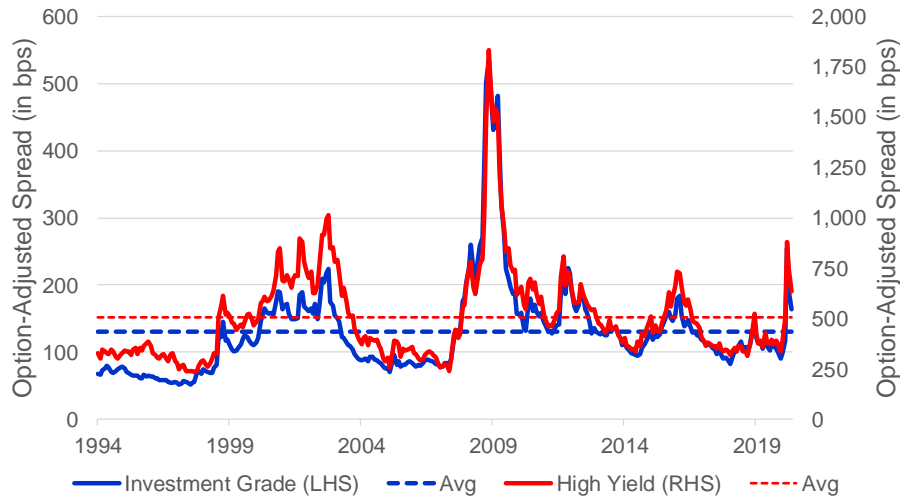
## Ten Year Nominal Yields and TIPS Breakeven Inflation



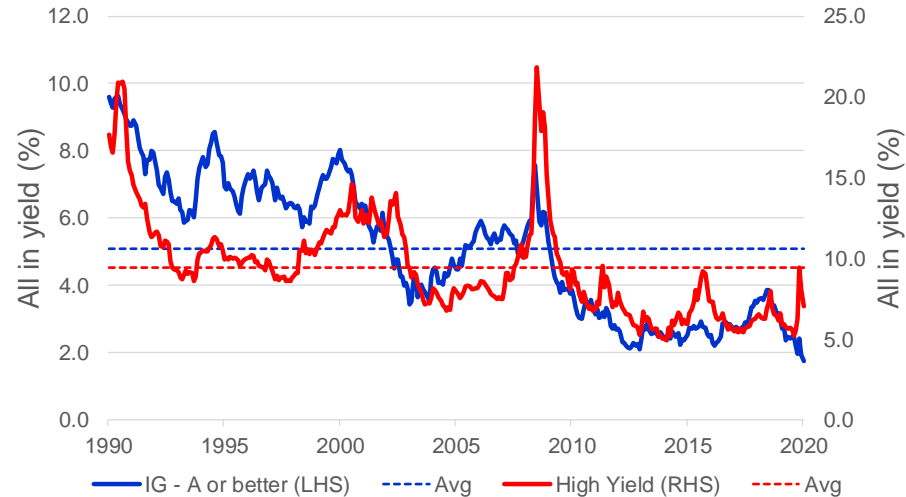
## Steepness of the U.S. Treasury Curve



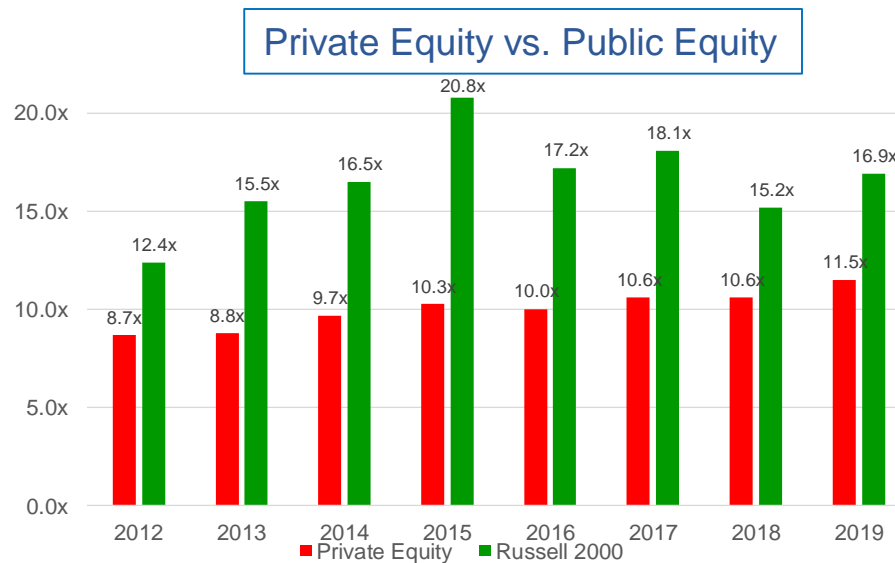
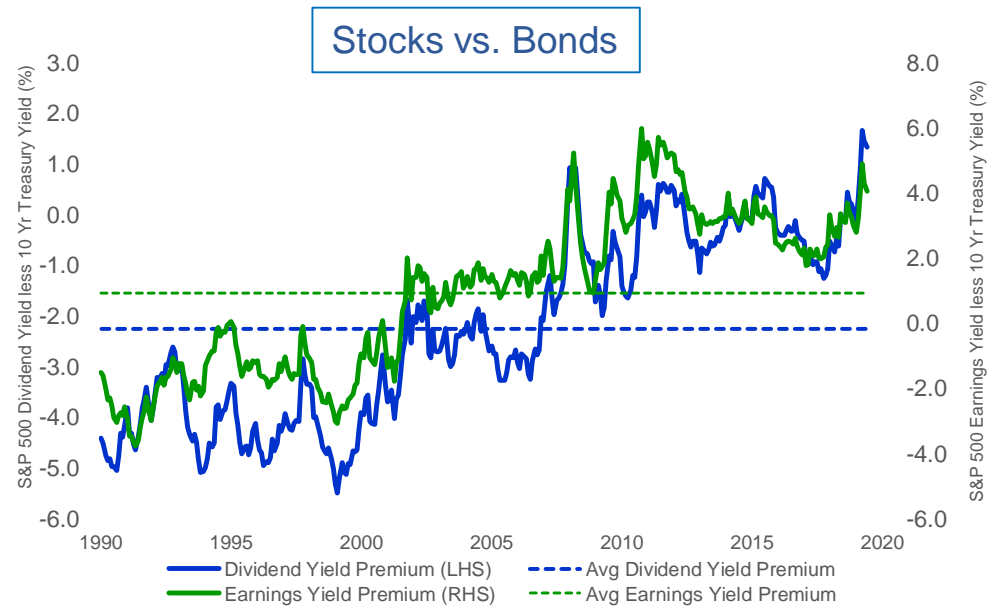
## Credit Spreads Are Above Historical Averages



## Credit Yields Are Below Historical Averages



# Cross Sector Valuation Analysis



# Asset Allocation Recommendation

	<b>Portfolio Expected Return</b>	<b>6.52%</b>	<b>6.72%</b>			
	<b>Portfolio Volatility</b>	<b>10.79%</b>	<b>11.05%</b>			
	<u>Return per unit of Risk</u>	0.605	0.608			
		<b>Current Target Asset Allocation</b>	<b>Recommended Target Asset Allocation</b>	<b>Proposed Ranges</b>	<b>Proposed Benchmarks</b>	<b>Proposed Benchmark Weights</b>
	<b>GLOBAL GROWTH</b>	<b>59.00%</b>	<b>59.00%</b>			
1	U.S. Equity	28.00%	27.00%	22-32%	MSCI USA IMI	28.00%
2	Non-U.S. Developed Market Equity	12.50%	13.50%	11-16%	MSCI EAFE + Canada (ex-prohibited)	13.50%
3	Emerging Market Equity	6.50%	5.50%	3-8%	MSCI Emerging Markets (ex-prohibited)	5.50%
4	Private Equity	12.00%	13.00%	10-16%	Cambridge Associates Buyouts, Growth, Distressed for Control, Subordinated Debt and Credit (one-quarter lag)	12.00%
	<b>REAL RETURN</b>	<b>10.00%</b>	<b>11.00%</b>			
5	Real Assets	2.50%	3.00%	1-5%	NCREIF ODCE (one-quarter lag)	3.00%
6	Real Estate	7.50%	8.00%	5-11%	Cambridge Private Equity Energy, Upstream Energy & Royalties & Infrastructure, Timber (one-quarter lag)	7.00%
	<b>INCOME</b>	<b>18.00%</b>	<b>18.00%</b>			
7	High Yield	2.00%	2.00%	1-5%	Bloomberg Barclays U.S. High Yield 2% Issuer Cap Index	2.00%
8	Private Credit	6.00%	8.00%	5-11%	Bloomberg Barclays U.S. Corp High Yield Index (one-month lag) + 100 bps	7.00%
9	Investment Grade Credit	10.00%	8.00%	5-11%	Bloomberg Barclays U.S. Credit Index, A or better	9.00%
	<b>DEFENSIVE</b>	<b>13.00%</b>	<b>12.00%</b>			
10	Cash Equivalents	5.00%	4.00%	3-7%	91-day T-Bills	5.00%
11	U.S. Treasuries	5.00%	5.00%	3-8%	Bloomberg Barclays U.S. Treasury Index	5.00%
12	Risk Mitigation Strategies	3.00%	3.00%	1-6%	91-day T-Bills +300 bps	3.00%
	Alternative Investment Program	31.00%	35.00%			
	Return Seeking	77.00%	80.00%			
	Defensive	23.00%	20.00%			
	<b>Total</b>	<b>100.00%</b>	<b>100.00%</b>			



## Asset Allocation – Proposed Changes

RVK 2022 Capital Market Assumptions Update & Asset Allocation Study  
 New Jersey Division of Investment  
 April 2022

	Current Target (%)	Proposed Target %	Changes (%)
U.S. Equity	27	27	-
Non-U.S. Developed Markets Equity	13.5	13.5	-
Emerging Markets Equity	5.5	5.5	-
Private Equity	13	13	-
Real Estate	8	8	-
Real Assets	3	3	-
<b>High Yield</b>	2	4	+2
Private Credit	8	8	-
<b>Investment Grade Credit</b>	8	7	-1
<b>U.S. Treasuries</b>	5	4	-1
Risk Mitigation Strategies	3	3	-
Cash Equivalents	4	4	-
	100	100	