



# Pension

June 30, 2020

UC INVESTMENTS

# UC Investments Way



# UC Pension

1. Asset Allocation
2. Performance
3. Asset Classes
4. Risk Allocation

## INVESTMENT OBJECTIVES

- Maximize real, long-term total returns (income plus capital appreciation adjusted for inflation), while assuming appropriate levels of risk.
- Maximize the probability of meeting the Plan's liabilities, subject to the Regents' funding policy.

# UC Investments

## INVESTMENT PRODUCTS

- Investing **Endowment** assets since 1933 (88 years)

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- Investing **Pension** assets since 1961 (60 years)

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- Investing **Retirement Savings** assets since 1967 (54 years)

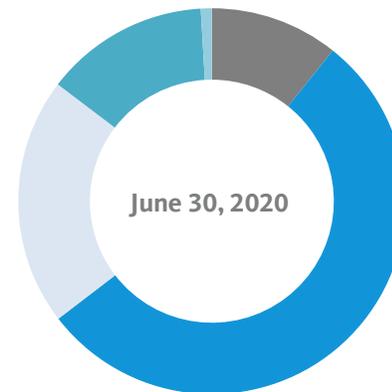
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- Investing **Working Capital** since 1976 (45 years)  
 Investing Total Return since 2008 (12 years)  
 Investing Short Term since 1976 (45 years)

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- Investing **Fiat Lux Insurance** assets since 2016 (4 years)

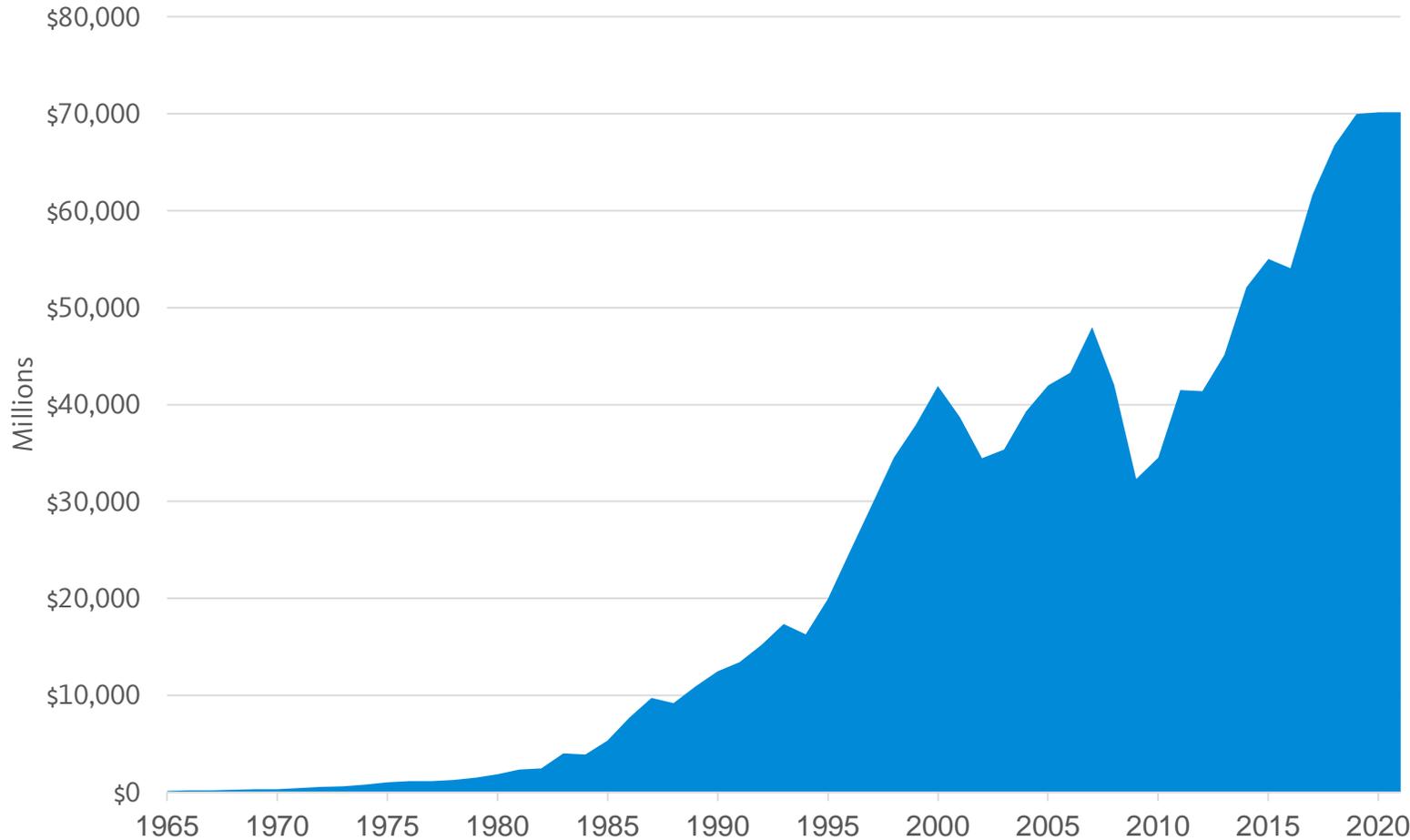
## \$130.4 BILLION ACROSS 6 PRODUCTS



	<u>\$ Billion</u>	<u>(%)</u>
● Endowment	14.0	11
● Pension	70.2	54
● Retirement Savings	27.1	21
● Working Capital	17.9	13
Total Return	7.4	6
Short Term	10.5	8
● Fiat Lux Insurance	1.2	1

# Pension Assets Growth

**PENSION ASSETS 1961 – 2020**



**ASSET GROWTH**

June 30, 2020

	Today	△ Change
<b>Today</b>	<b>\$70,181M</b>	
<b>1 Year Ago</b>	<b>\$69,981M</b>	<b>+\$200M</b>
<b>5 Years Ago</b>	<b>\$55,041M</b>	<b>+\$15,140M</b>

# Pension Assets Under Management

<b>1 Year</b>	<b>Market Value (\$M)</b>
June 30, 2019	69,981
Market Gains	23
Value Added	(232)
Net Cash Flow	409
<b>June 30, 2020</b>	<b>70,181</b>

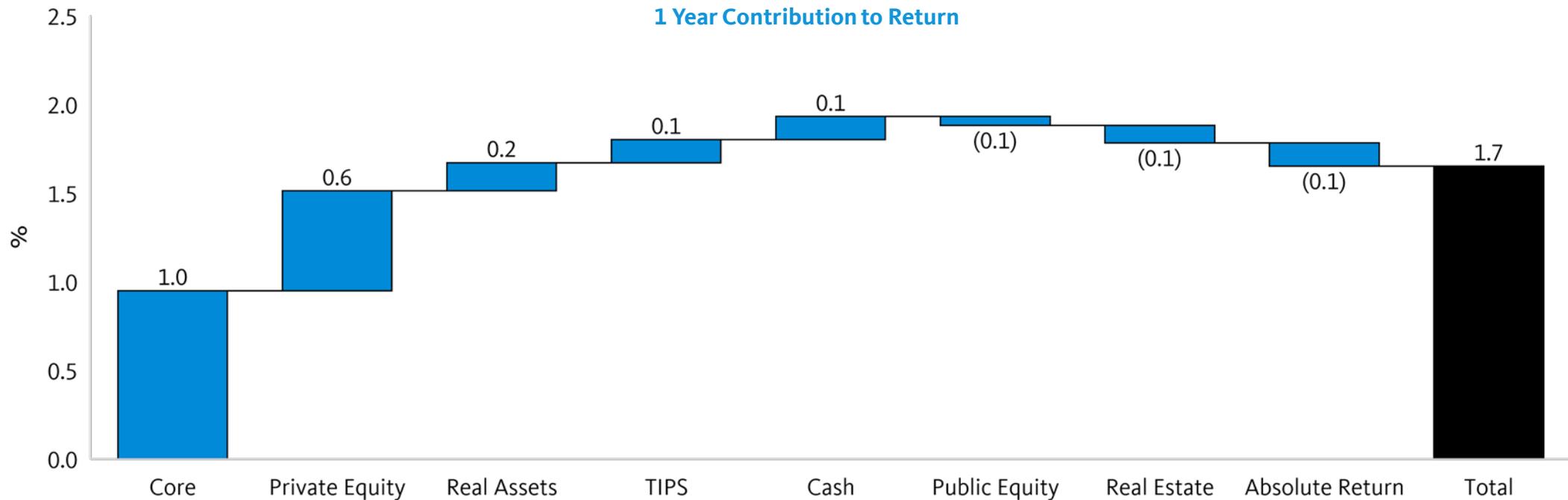
# Pension Asset Allocation

As of June 30, 2020	Market Value (\$M)	Weight (%)	Over/Underweight to Interim Policy (%)	Interim Policy (%)	Long-Term Target (%)
Public Equity	39,834	56.8	3.7	53.1	50
Fixed Income	14,347	20.4	(0.9)	21.3	20
Other Investments	15,409	22.0	1.4	20.6	30
Absolute Return	4,490	6.4	0.2	6.2	10
Private Equity	4,579	6.5	0.8	5.7	10
Real Estate	4,172	5.9	(0.1)	6.0	7
Real Assets	2,168	3.2	0.5	2.7	3
Cash	591	0.8	(4.2)	5.0	0
<b>Total</b>	<b>\$70,181M</b>	<b>100.0%</b>		<b>100.0%</b>	<b>100%</b>

# Pension Performance

As of June 30, 2020 Net Returns (%)	Market Value (\$M)	Weight (%)	Annualized Returns						
			1 Year	3 Year	5 Year	10 Year	15 Year	20 Year	25 Year
UC Pension	70,181	100	1.7	5.1	5.4	8.2	6.0	5.2	7.8
Policy Benchmark*			3.1	5.8	5.7	7.8	5.7	5.0	7.4
Value Added			(1.4)	(0.7)	(0.3)	0.4	0.3	0.2	0.4

\*The Policy Benchmark is a weighted average of investment policy targets.



# Pension Attribution – Fiscal Year to Date

As of June 30, 2020	Portfolio Return	Benchmark Return	Allocation Attribution	Selection Attribution	Total Attribution
<b>Public Equity</b>	3.3	1.2	(0.7)	1.1	0.4
<b>Fixed Income</b>	5.3	6.8	0.0	(0.2)	(0.2)
Core	6.9	8.7	0.0	(0.3)	(0.3)
High Yield	0.1	(1.1)	0.0	0.0	0.0
Emerging Market Debt	0.4	0.5	0.0	0.0	0.0
<b>Other Investments</b>	2.2	4.2	1.2	(1.7)	(0.6)
Absolute Return	(2.3)	(0.1)	0.0	(0.1)	(0.1)
Private Equity	9.4	8.5	1.2	(1.2)	(0.1)
Real Estate	(1.6)	3.9	(0.1)	(0.4)	(0.4)
Real Assets	5.5	5.5	0.1	0.0	0.1
<b>Cash</b>	2.0	2.1	(1.0)	0.0	(1.0)
<b>Total</b>	<b>1.7</b>	<b>3.1</b>	<b>(0.5)</b>	<b>(0.9)</b>	<b>(1.4)</b>

# Pension Policy Benchmark

Asset Class	Policy Benchmark Component	Interim Policy (%)	Allowable Ranges		Long-Term Target (%)	Allowable Ranges	
			Min (%)	Max (%)		Min (%)	(%)Max
<b>Total Public Equity</b>	MSCI All Country World Index Net IMI (Tobacco Free)	53.1	43.1	63.1	50.0	40.0	60.0
<b>Total Fixed Income</b>							
Core	Barclays U.S. Aggregate Bond Index	14.1	1.1	27.1	13.0	10.0	16.0
High Yield Debt	Merrill Lynch High Yield Cash Pay Index	2.9	0.4	5.4	2.5	0.0	5.0
Emerging Market Debt	JP Morgan Emerging Markets Bond - Global Diversified	2.7	0.2	5.2	2.5	0.0	5.0
TIPS	Barclays U.S. TIPS	1.6	0.0	3.6	2.0	0.0	4.0
<b>Total Other Investments</b>							
Private Equity	Russell 3000 + 2.0%	5.7	0.7	10.7	10.0	5.0	15.0
Absolute Return	HFRI Fund of Funds Composite	6.2	0.0	16.2	10.0	0.0	20.0
Real Estate	NCREIF ODCE Index (lagged 3 months)	6.0	1.0	11.0	7.0	2.0	12.0
Real Assets	Actual Real Asset Portfolio Returns	2.7	0.0	5.7	3.0	0.0	6.0
<b>Cash</b>		5.0	0.0	15.0	0.0	0.0	10.0

# Public Equity

As of June 30, 2020 Net Returns (%)	Market Value (\$M)	Weight (%)	Annualized Returns						
			1 Year	3 Year	5 Year	10 Year	15 Year	20 Year	25 Year
Public Equity	39,834	100	3.3	6.4	6.6	10.0	6.4	4.3	7.6
Policy Benchmark*			1.2	5.7	6.2	9.3	6.8	5.1	8.6
Value Added			2.1	0.7	0.4	0.7	(0.4)	(0.8)	(1.0)
Active	10,819	27	6.1	6.9	6.8	11.2			
Passive	29,015	73	1.9	5.6	6.8	10.0			

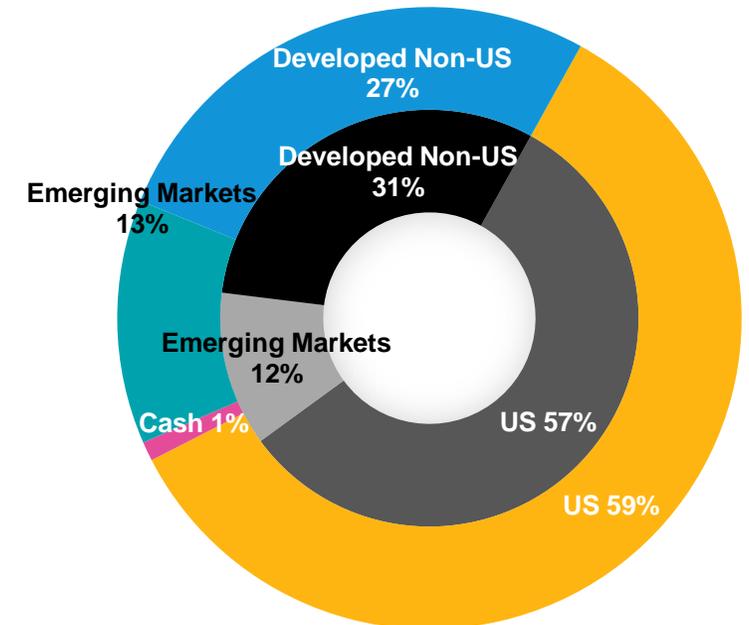
\* Prior to July 1, 2016, the total public equity benchmark was an aggregate of benchmarks for underlying equity portfolios.

Active Managers	# of funds	Weight
Global Generalist	4	13.2%
USA	3	5.2%
Developed Non-USA	3	2.9%
Global Sector Specialist	2	2.7%
Emerging Markets	4	2.8%

Passive Index Exposure	Strategy	Weight
MSCI ACWI IMI Tobacco Free	Global Passive	65.4%
S&P 500 ex-Tobacco	US Passive	7.4%

## Regional Look through Exposure

Endowment ■ ■ ■ ■  
 Benchmark ■ ■ ■



# Public Equity

## Attribution:

UCRP outperformance FYTD 2019/20 driven by positive value added from manager stock selection, as well as over weights to healthcare and China.

Top 3 Absolute Performers FYTD	FYTD return	Weight
1. Global Sector Specialist	43.6%	1.8%
2. Global Generalist Manager	24.1%	3.2%
3. Global Sector Specialist	21.2%	0.9%

Bottom 3 Absolute Performers FYTD	FYTD return	Weight
1. Emerging Markets Manager	-15.3%	0.3%
2. US Manager	-15.1%	0.4%
3. Emerging Markets Manager	-4.8%	1.6%
UCRP Benchmark (MSCI ACWI IMI TF)	1.2%	

Geographic Exposures	Portfolio	Benchmark
US Equity	59.4%	56.9%
Developed Non-US Equity	26.9%	31.1%
Emerging Market Equity	12.7%	12.0%
Cash	1.0%	0.0%

# Fixed Income

As of June 30, 2020 Net Returns (%)	Market Value (\$M)	Weight (%)	Annualized Returns						
			1 Year	3 Year	5 Year	10 Year	15 Year	20 Year	25 Year
Fixed Income	14,347	100	5.2	4.4	4.2	4.5	4.9	6.0	6.8
Policy Benchmark*			7.0	5.0	4.5	4.5	4.9	6.0	6.1
Value Added			(1.8)	(0.6)	(0.3)	-	-	-	0.7
Core	10,347	71	6.8	4.7	4.2	4.1	4.4	5.6	6.5
Barclays U.S. Aggregate Bond Index			8.7	5.3	4.3	3.8	4.4	5.6	5.8
Value Added			(1.9)	(0.6)	(0.1)	0.3	0.0	0.0	0.7
Active	8,031	79	7.7	5.1	4.4	4.2	-	-	-
Passive	2,106	21	6.2	4.6	3.6	-	-	-	-
High Yield	2,023	1.6	(0.3)	3.1	4.5	6.7	-	-	-
Merrill Lynch High Yield Cash Pay Index			(1.1)	2.9	4.6	6.4	-	-	-
Value Added			0.8	0.2	(0.1)	0.3	-	-	-
External High Yield	1,665	99	(0.8)	2.9	4.4	6.8	-	-	-
Internal High Yield	14	1	3.3	4.4	5.1	6.7	-	-	-
Emerging Market Debt**	1,978	14	0.5	3.6	4.7	4.8	-	-	-
JPM EM Bond Index Global Diversified			0.5	3.6	5.4	5.7	-	-	-
Value Added			-	-	(0.7)	(0.9)	-	-	-

\* Total fixed income policy benchmark is an aggregate of underlying portfolio benchmarks.

\*\* Emerging Market Debt: Passive Since May 2017.

# Cash

As of June 30, 2020 Net Returns (%)	Market Value (\$M)	Weight (%)	Annualized Returns						
			1 Year	3 Year	5 Year	10 Year	15 Year	20 Year	25 Year
Cash	591	100	1.9	2.0	1.7	1.8	2.6	3.0	3.7

# Absolute Return

As of June 30, 2020 Net Returns (%)	Market Value (\$M)	Weight (%)	Annualized Returns						
			1 Year	3 Year	5 Year	10 Year	15 Year	20 Year	25 Year
Absolute Return	4,490	100	(2.4)	3.6	2.0	5.0	-	-	-
Policy Benchmark*			(0.1)	2.1	0.5	1.0	-	-	-
Value Added			(2.3)	1.5	1.5	4.0	-	-	-
Credit – Direct Lending	1,179	26	2.7	7.3	-	-			
Credit – Multi-Strategy	708	16	(22.4)	(3.6)	(0.6)	-			
Relative Value	840	19	4.8	7.8	7.2	6.5			
Event Driven	947	21	13.2	9.4	6.4	7.6			
Global Macro	501	11	(6.1)	(0.1)	-	1.4			
Opportunistic	298	7	(4.6)	2.7	-	-			

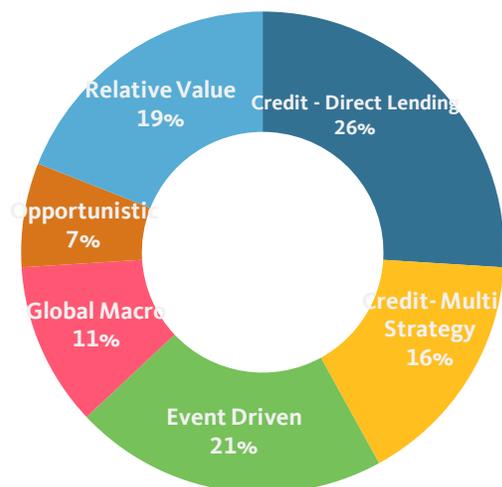
\* As of July 2016, the benchmark is HFRI Fund of Funds Composite.

From February 2016 to June 2016, the benchmark was the HFRX Absolute Return.

From March 2009 to January 2016, the benchmark was 50% HFRX Absolute Return/50% HFRX Market Directional.

From July 2007 to February 2009, the benchmark was 1 Month T-Bill +4.5%.

Prior to that, the benchmark was the HFRX Absolute Return.



External Manager	Credit Strategies	Investment Strategy	NAV (\$M)
Manager 1	Direct Lending	European corporate lending.	\$197
Manager 2	Direct Lending	Consumer and small business specialty finance lending.	\$305
Manager 3	Direct Lending	U.S. residential real estate credit lending.	\$155
Manager 4	Direct Lending	U.S. upper middle market corporate direct lending. Vehicle is publicly traded.	\$522
Manager 5	Multi-Strategy	Structured credit, asset backed and mortgage securities.	\$433
Manager 6	Multi-Strategy	Structured credit, asset backed and mortgage securities.	\$275
<b>Total</b>			<b>\$1,887</b>

# Private Equity

As of June 30, 2020 Net Returns (%)	Market Value (\$M)	Weight (%)	Annualized Returns						
			1 Year	3 Year	5 Year	10 Year	15 Year	20 Year	25 Year
Private Equity	4,579	100	9.4	14.0	12.4	13.4	11.3	7.3	17.8
Policy Benchmark*			8.5	11.7	11.0	12.8	10.9	7.7	11.8
Value Added			0.9	2.3	1.4	0.6	0.4	(0.4)	6.0
Buyout	1,425	31	3.0	7.7	10.2	11.6	9.7	31.3	-
Opportunistic	922	20	14.8	12.2	6.3	15.2	13.7	10.8	8.3
Venture Capital	871	19	16.2	17.9	12.8	14.7	11.2	-	-
Co-Invest	810	17	23.5	32.3	26.6	27.7	-	-	-
Growth	648	13	(4.9)	7.5	7.3	10.7	(3.3)	(5.8)	(4.7)

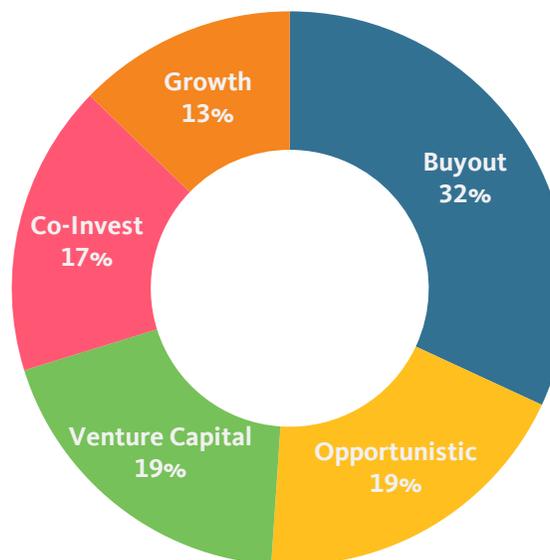
\* As of July 1, 2019, the Private Equity policy benchmark is the Russell 3000 +2.0%.

From July 1, 2017 to June 30, 2019, the Private Equity policy benchmark is the Russell 3000 +1.5%.

From March 2005 to June 2017, the Private Equity benchmark was the actual private equity return.

From January 2001 to February 2005, the Private Equity benchmark was Russell 3000 + 3% lagged one quarter.

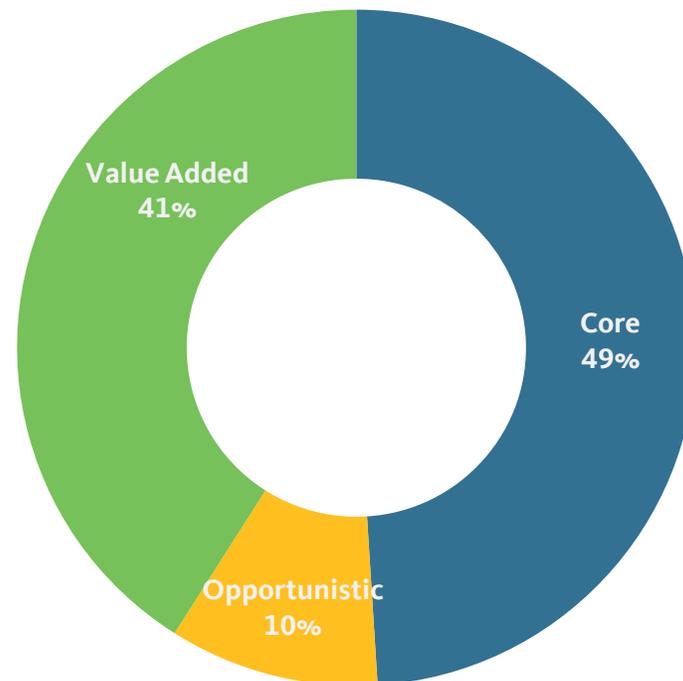
Prior to that, it was the S&P 500 + 5% lagged by a quarter.



# Real Estate

As of June 30, 2020 Net Returns (%)	Market Value (\$M)	Weight (%)	Annualized Returns						
			1 Year	3 Year	5 Year	10 Year	15 Year	20 Year	25 Year
Real Estate	4,172	100	(1.6)	4.5	6.5	10.9	4.0	-	-
Policy Benchmark*			3.9	5.9	7.5	10.6	4.1	-	-
Value Added			(5.5)	(1.4)	(1.0)	0.3	(0.1)	-	-
Core	2,090	49	3.5	6.7	8.1	10.7			
Value Added	1,757	41	(5.7)	2.6	6.3	8.4			
Opportunistic	430	10	(7.1)	2.2	1.9	9.7			

\* As of April 1, 2011, the Real Estate policy benchmark is the NCREIF ODCE Index (lagged 3 months).

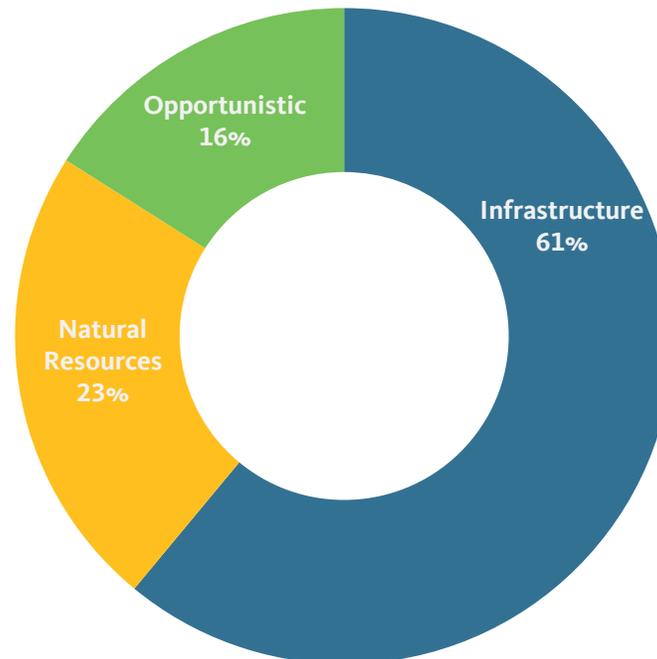


# Real Assets

As of June 30, 2020 Net Returns (%)	Market Value (\$M)	Weight (%)	Annualized Returns						
			1 Year	3 Year	5 Year	10 Year	15 Year	20 Year	25 Year
Real Assets	2,167	100	5.5	6.2	2.1	2.9	-	-	-
Infrastructure	1,315	61	11.1	14.0	10.8				
Natural Resources	497	23	(2.1)	(1.4)	(4.8)				
Opportunistic	354	16	1.6	6.2	3.0				

\* Inception date for Real Assets is April 1, 2010.

The Real Assets policy benchmark is itself, the Real Assets portfolio.



# Risk 1.0 : Risk Measurement

Very large product volatility/risk, and quarter on quarter changes.

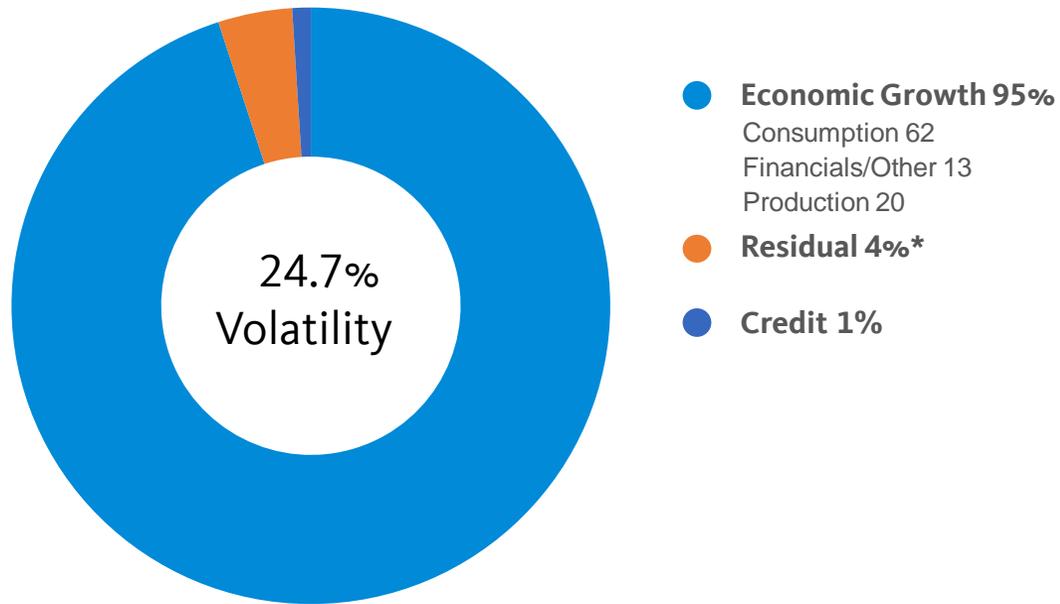
Portfolio	Benchmark	Weight (%)	Portfolio Risk (%)		Benchmark Risk (%)		Active Risk (%)	
			Standalone Volatility	QoQ Change	Standalone Volatility	QoQ Change	Tracking Error	QoQ Change
<b>Pension</b>	Policy (Blend)	100	24.7	16.7	22.1	14.2	2.5	1.7
<b>Public Equity</b>	MSCI ACWI ex Tobacco	57	28.7	16.5	29.9	17.7	1.9	1.2
<b>Fixed Income</b>	Policy (Blend)	20	6.7	4.3	8.2	5.4	1.7	1.2
<b>Absolute Return</b>	HFRI FOF	6	10.9	5.8	7.7	5.5	5.8	1.7
<b>Private Equity</b>	Russell 3000	7	52.6	35.3	32.0	18.4	21.4	14.4
<b>Real Estate</b>	NFI-ODCE	6	40.1	29.9	29.3	19.7	11.4	3.1
<b>Real Assets</b>	Real Assets	3	41.4	23.2	41.4	23.2	0.0	0.0
<b>Cash</b>	Merrill Lynch 3M	1	0.2	0.0	0.2	0.2	0.2	0.1

# Macroeconomic Risk Factors

Portfolio systematic risk generally dominated by “Economic Growth” risk. Within Economic Growth, “Consumption” dominates.

## Retirement Plan

Portfolio Standalone Risk Factor Decomposition



Factor Name	Factor Description
<b>Economic Growth</b>	Proxied by broad, developed market equity index returns
<b>Real Rates</b>	Inflation-linked bond returns
<b>Inflation</b>	Return of long nominal bonds, short inflation-linked bonds portfolio
<b>Credit</b>	Return of long corporate bonds, short nominal bonds portfolio
<b>Commodity</b>	Weighted GSCI Commodity index returns
<b>Emerging Markets (EM)</b>	Equally weighted basket of EM Assets

\* Residual Risk is any risk which is not one of the six macro economic factors or FX risk

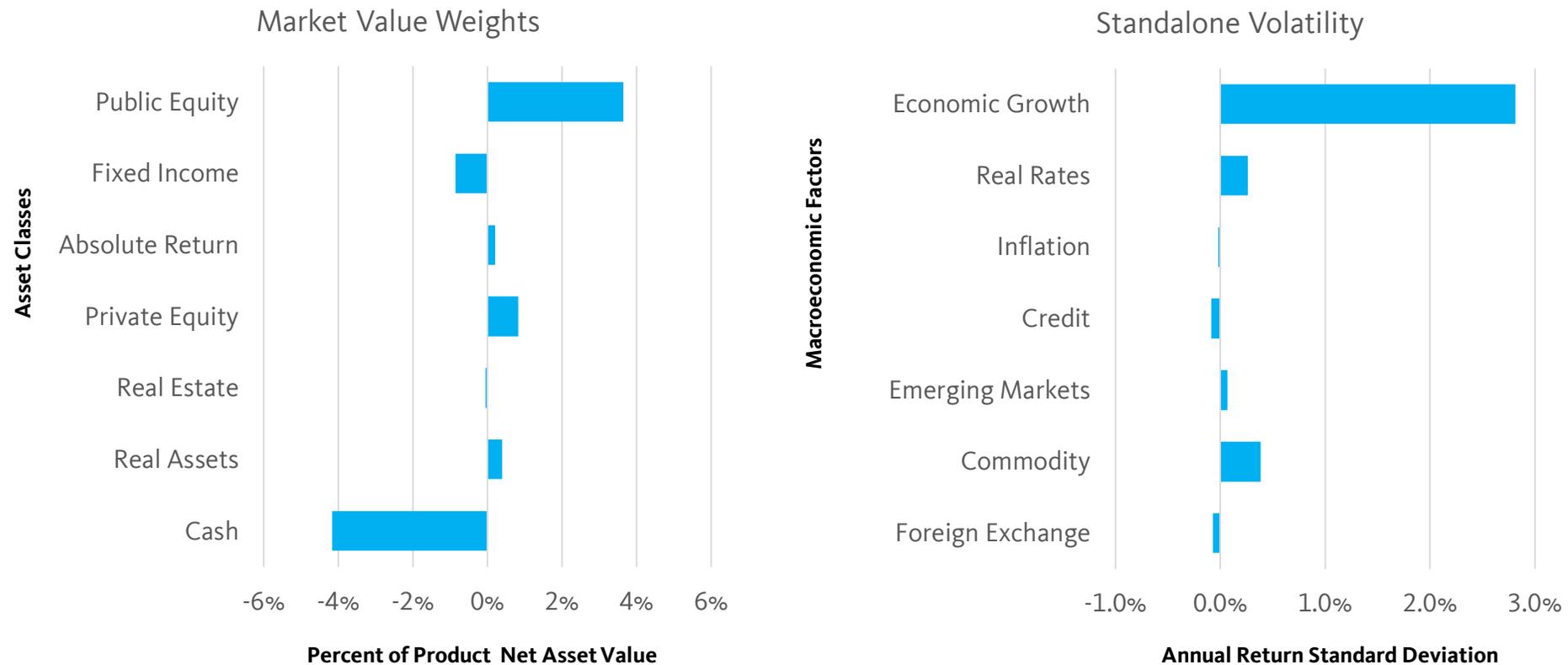
# Risk 1.0: Two Views of Risk

## Asset Classes versus Macroeconomic Factors

Asset allocation overweight Public Equities versus Cash (interim target 5%). From a factor perspective, portfolio is actively overweight Economic Growth.

### Retirement Plan Active Exposures

Reference scale: active risk (tracking error) : 2.5%



# Risk 2.0: Scenario Analysis

## US Scenarios

- Federal Reserve Rate Regimes
- Fiscal Policy Stance
- Tax Reform

## European Scenarios

- Brexit Negotiations
- Europe Fragmentation/Breakup
- Eurozone Populist Elections

## Emerging Markets /Asia Scenarios

- US-China Trade Relations
- Abenomics- Helicopter Money
- North Korea Tensions

## Global Scenarios

- Pandemic Recession
- Peak Oil
- Gulf Tensions

## Interest Rate Scenarios

- US Rates Paradigm Shift
- Reflation – Deflation
- Rising Inflation – Global Rate Hikes

## Market Technical Scenarios

- Tech Calamity
- Volatility Regime Change
- Value Reversal

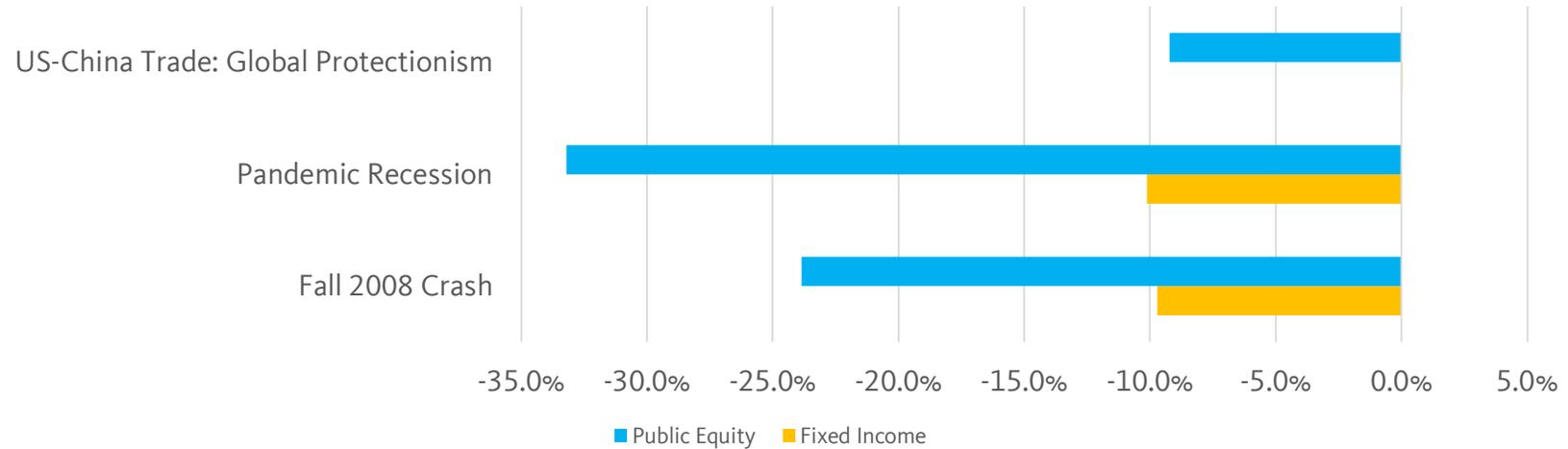
Source: BlackRock

# Risk 3.0: Scenario Analysis

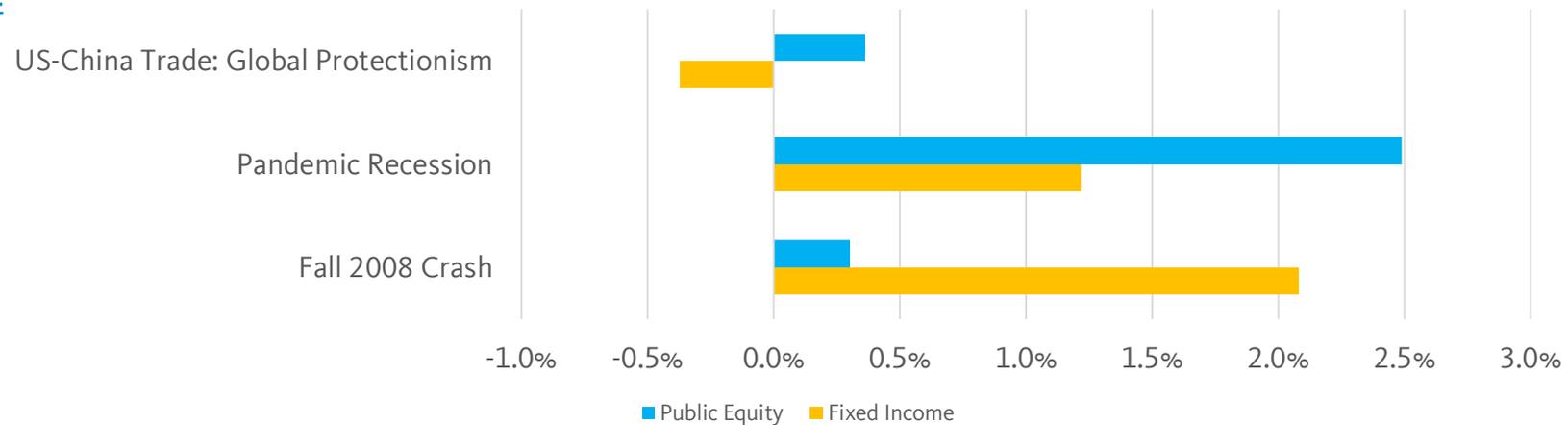
Indicative stressed P&L for public markets investments

## PORTFOLIO

- Public Equity
- Fixed Income



## ACTIVE



As of June, 2020 Reference scale: volatility = 24.7%, tracking error 2.5%