

Joint Meeting of the Board of Trustees  
and  
Investment Advisory Committee

March 9, 2022



## Public Agenda #7

*Call Meeting of the Board of Trustees to Order*

March 9, 2022

## Public Agenda #8

### *Call Meeting of the Investment Advisory Committee to Order*

March 9, 2022

## Public Agenda #9

*Consideration of the Minutes to the December 8, 2021  
Joint Meeting of the Board of Trustees and Investment  
Advisory Committee – (**Action**)*

March 9, 2022



Questions?  
**Action Item**

# Public Agenda Item #10

*Consideration of New Appointments to the Investment Advisory  
Committee – (Action – BOARD ONLY)*

March 9, 2022

David T. Veal, Chief Investment Officer

# Investment Advisory Committee

## *Operating Framework*



- IAC established at the discretion of the Board in Texas Administrative Code § 63.17(b).
- Consists of at least five members and not more than nine, and currently has seven.
- Members are selected based on experience:
  - in managing a business in which investment decisions are made or
  - as a prominent educator in the fields of economics or finance.
- IAC members serve at the pleasure of the Board for staggered three-year terms.
- Members are subject to compliance with ERS Investment Policy and Texas law.

# Ryan Bailey

## *Professional Credentials*



### **Managing Partner and Chief Investment Officer** Carbonado Partners

- BA in Economics, Yale University
- Former Head of Investments, Children's Health System of Texas
- Investment Officer and Interim CIO, Meadows Foundation
- CFA, CAIA, FRM, and CMT designations
- Member of Investment Committees for Parkland Hospital, American Heart Association, and Dallas Police & Fire.



# Ruby Muñoz Dang

## *Professional Credentials*



### **Partner, Director of Marketing and Client Services** Garcia Hamilton & Associates LP

- BA in Finance, University of Houston Downtown
- GH&A for 20+ years
  - Portfolio Administrator, Equity Trader, Equity Research Analyst, Assistant Equity Portfolio Manager
- Former Trustee for the MTA of Harris County Non Union Pension Plan Trust
- Mentors high school and college students
- Active volunteer in education



# IAC Skills Assessment

	Term Ends	Investment Experience	Global Equity	Fixed Income	Private Equity	Real Estate	Hedge Funds	Infrastructure	Derivatives
<b>IAC Chair, Gene L. Needles, Jr.</b> Chairman, President and CEO – Resolute Investment Managers	May 2023	41 years	X	X	X	X	X		X
<b>IAC Vice-Chair, Laurie Dotter</b> Retired from Transwestern Corporate Properties – President	May 2022	37 years				X		X	
<b>Bob Alley, CFA</b> Retired from AIM Advisors Inc. – Chief Fixed Income Officer	Aug 2024	45 years	X	X	X				
<b>Ryan Bailey, CFA, FRM, CAIA, CMT</b> Managing Partner & CIO – Carbonado Partners	Mar 2026	22 years	X	X	X	X	X		
<b>Caroline Cooley</b> Managing Partner – Crestline Investors	Dec 2022	36 years		X			X		X
<b>James Hille, CFA, CAIA</b> Retired from TCU Endowment – CIO	Aug 2023	29 years	X	X	X	X	X		
<b>Milton Hixson, CPA, CFP</b> CEO – FMP Wealth Advisors	Mar 2023	48 years	X	X	X	X	X	X	
<b>Ken Mindell</b> Retired from Rosewood Management Corp – Sr. VP, Treasurer & Director of Investments	May 2022	40 years	X	X	X	X	X		X
<b>Ruby Muñoz Dang</b> Partner & Director – Garcia Hamilton	Mar 2026	25 years	X	X					

Questions?  
**Action Item -BOT**

## Public Agenda Item #11

### *Consideration of Texa\$aver Investment Performance Review for Calendar Year 2021*

March 9, 2022

Diana Kongevick, Director of Group Benefits

Georgina Bouton, CTCM, Assistant Director of Group Benefits

Thomas Nun, CFA<sup>®</sup> Portfolio Strategist, Great-West Investments



# Texa\$aver Program

## Overview



- Texa\$aver<sup>SM</sup> 401(k)/457 program (Texa\$aver) is a voluntary tax-deferred supplemental retirement program
  - Designed to help state and eligible higher education employees with personal retirement savings
- Texa\$aver is a defined contribution program
  - 401(k) plan - available to state agency employees
  - 457 plan - available to state agency and eligible higher education employees

### Retirement Preparation: A Shared Responsibility

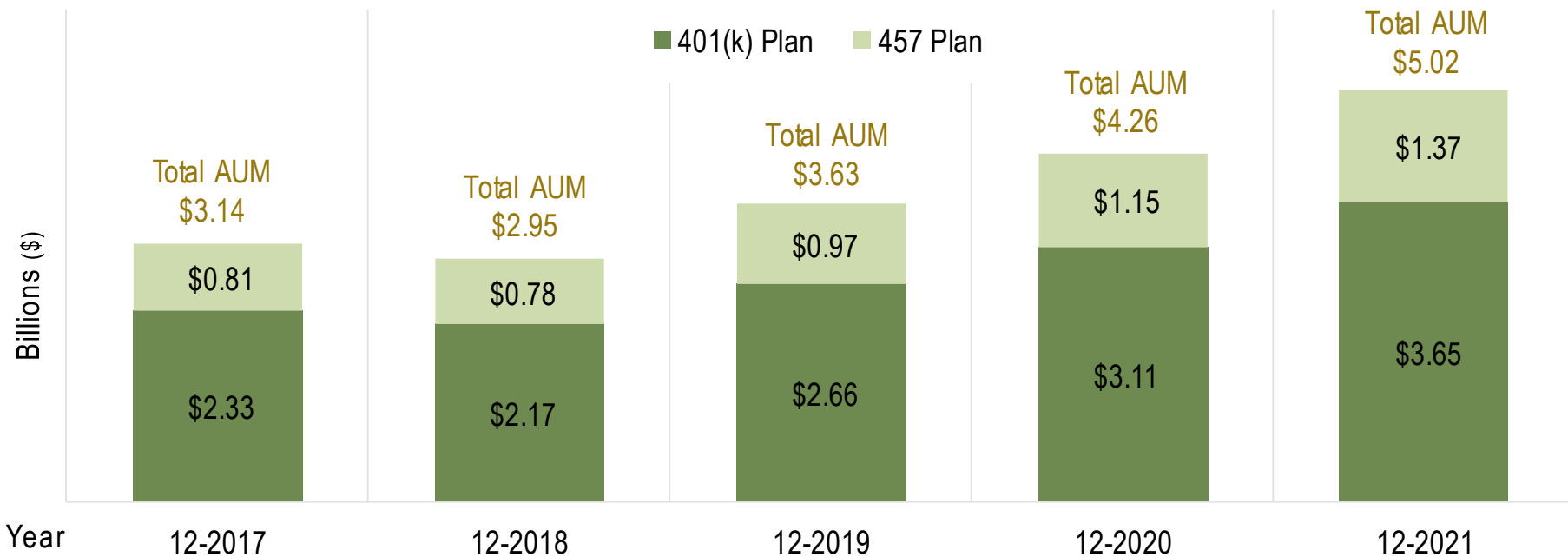


# TexaSaver Program

## 5 Year Plan Growth



**TexaSaver Program**  
Assets under Management (AUM)  
December 2017 – December 2021



# Texa\$aver Program

## Investment offerings



A range of investment products are offered to help participants reach their individual retirement savings goals.

### Target Date Funds

- Reduces investment risk and equity exposure over time
- Requires the lowest level of participant engagement
- Represents 24% of program assets

### Core Funds

- Allows participants to create their own investment portfolios based on defined asset classes
- Requires a higher level of participant engagement to maintain desired diversification and risk levels
- Represents 71% of program assets

### Self Directed Brokerage Account

- Provides additional investment options
- Requires the highest level of participant engagement for diversification and investment selection
- Represents 5% of program assets

# Texa\$aver Investment Offerings, 12/2021

Highest Risk of Principal

Asset Class	Investment Offerings
International Equity	Fidelity Diversified International (FDIVX) Fidelity International Index Fund
Small Cap Value	Lord Abbett Small Cap Value I (LRSYX)*
Mid Cap Growth	Wellington CIF II MidCap Opportunities S1
Mid Cap Blend	BlackRock Mid Cap Equity Index
Large Cap Growth	Vanguard Growth Index Institutional (VIGIX)
Large Cap Blend	Vanguard Institutional Index (VIGIX)
Balanced (Stocks and Bonds)	Vanguard Wellington Admiral (VWENX)
Specialty / Real Assets	AB All Mkt Real Return (AMTIX)
Intermediate Term Bond	BlackRock Bond Index Fund
Short Term Bond	BlackRock 1-3 Year Government Bond Index Fund
US Money Market	BlackRock Short Term Investment Fund

Target Date Funds  
BlackRock LifePath® Index

Lowest Risk of Principal

\*Board approved changes to the small cap fund offering.

- Vanguard S&P Small-Cap 600 Index Institutional (VSMSX) added on 1/10/2022.
- Assets transferred from Lord Abbett Small Cap Value to Vanguard S&P Small-Cap 600 fund on 2/18/2022.

# Texa\$aver Program

## *Asset Class Diversification*



- The fund lineup provides the core asset class exposure for investment allocation services.
- Asset class diversification provides access to different levels of risk-based portfolios for participants using asset allocation services.
  - Very Conservative
  - Conservative
  - Moderately Conservative
  - Moderate
  - Moderately Aggressive
  - Aggressive
  - Very Aggressive

# TexaSaver Program

## Investment Allocation Services



- Retirement planning services and products are available to participants to help with investment allocation.

### Managed Account Service

Do it for me

- Builds a portfolio based on specific goals for an additional fee
- Performs automatic rebalancing to equity targets
- Provides access to investment adviser representatives

### Online Advice Service

Help me do it

Internet based service

- Offers recommendations at no additional cost
- Allows participants to easily apply recommendations
- Provides access to investment adviser representatives

### Asset Allocation Product

Target date funds

- Changes asset allocation from equity exposure to fixed income over time (glide path)

# TexaSaver Program



## Participant Profile – 401(k) Plan

- 64% of plan participants are on track for Retirement Readiness based on savings rate and income replacement goal

TexaSaver 401(k) plan	Average Savings Rate	Average Age	Average Account Balance	Average Annual Salary	5 Yr. Avg. Annual Rate of Return
Managed Account Service	5.4%	48	\$44,267	\$65,040	9.78%
Online Investment Advice	11.5%	51	\$205,314	\$78,881	11.49%
Target Date Funds	1.9%	41	\$6,188	\$49,013	10.71%
No Investment Allocation Assistance	5.8%	54	\$76,966	\$66,137	11.92%

# TexaSaver Program

## Participant Profile – 457 Plan



- 62% of plan participants are on track for Retirement Readiness based on savings rate and income replacement goal

TexaSaver 457 plan	Average Savings Rate	Average Age	Average Account Balance	Average Annual Salary	5 Yr. Avg. Annual Rate of Return
Managed Account Service	4.9%	47	\$33,687	\$64,983	9.43%
Online Investment Advice	11.4%	50	\$182,931	\$87,519	11.60%
Target Date Funds	5.4%	45	\$28,550	\$64,239	10.24%
No Investment Allocation Assistance	2.7%	44	\$21,803	\$53,869	11.14%



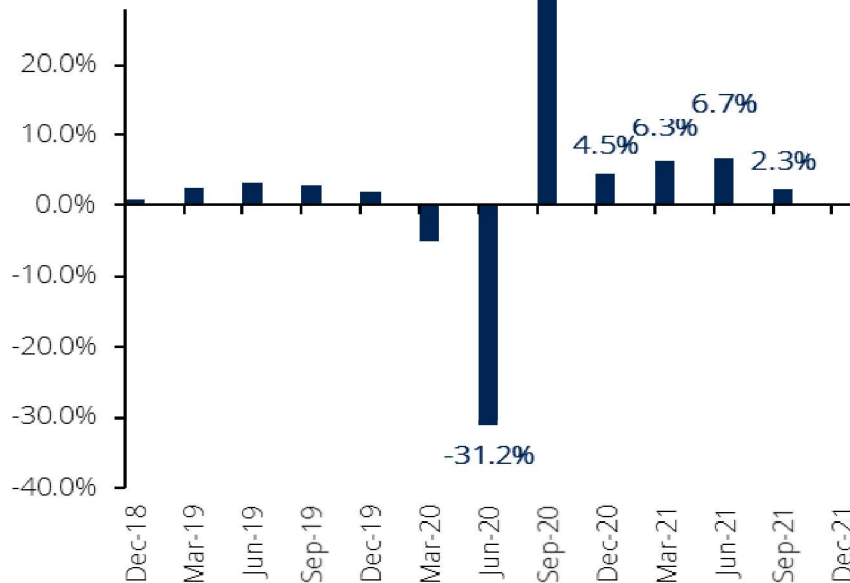
# Capital Markets Update

# US Economy

The core measure of inflation excludes food and energy prices while the headline measure of inflation does not. GDP estimates presented reflect the median estimate provided by Bloomberg.

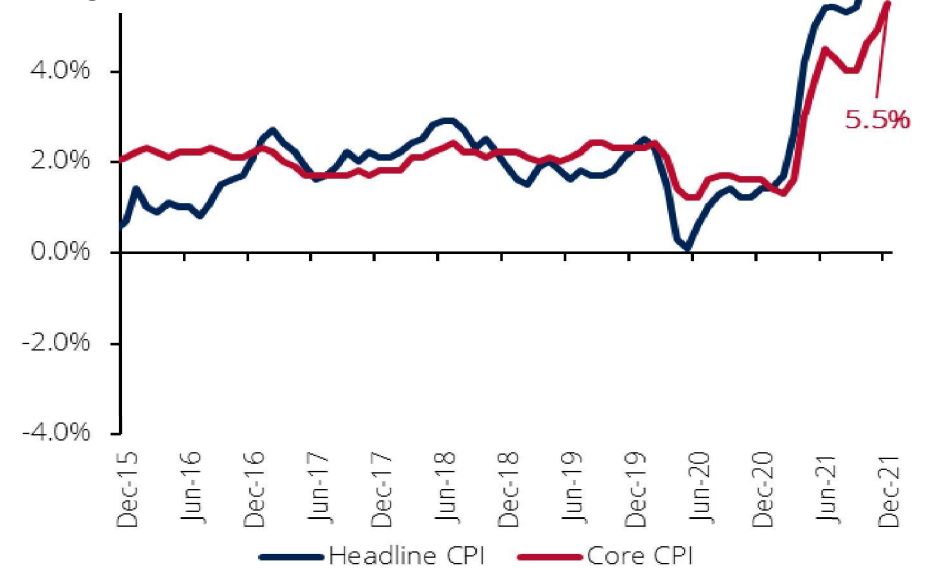
## Real GDP Growth

Quarter over quarter annualized, through 09/2021



## US Consumer Price Index

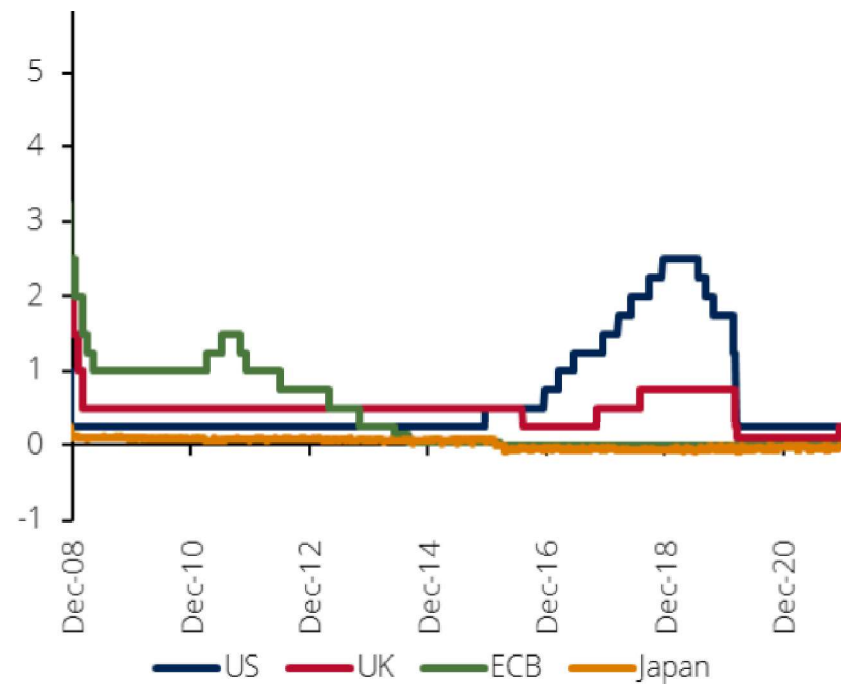
Annual percent change, through 12/2021



# Global Monetary Policies, Interest Rates

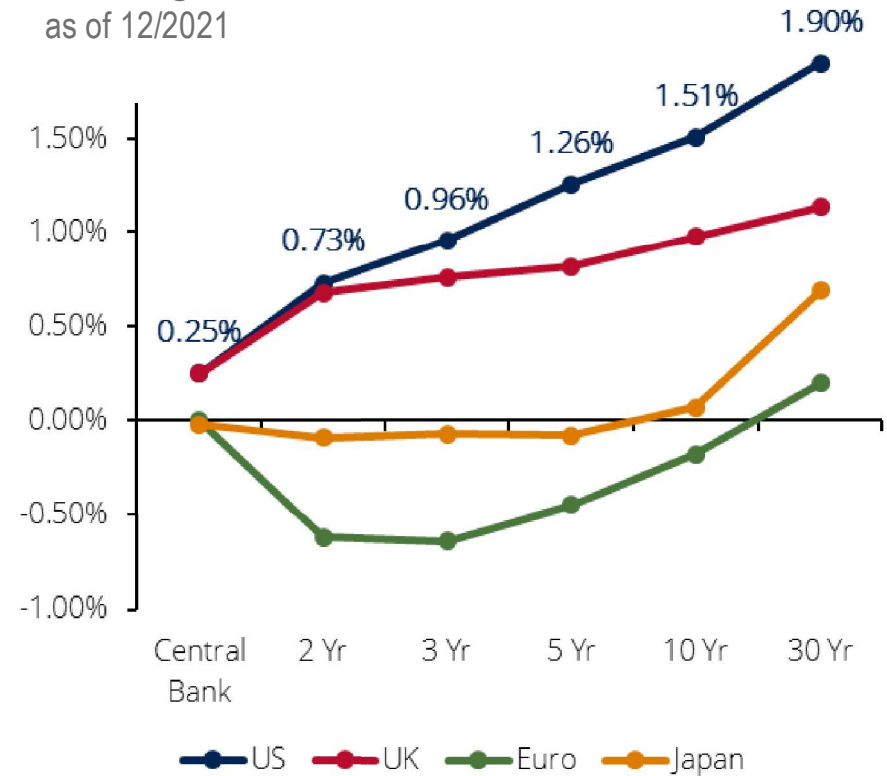
## Global Central Bank Rates

through 12/2021



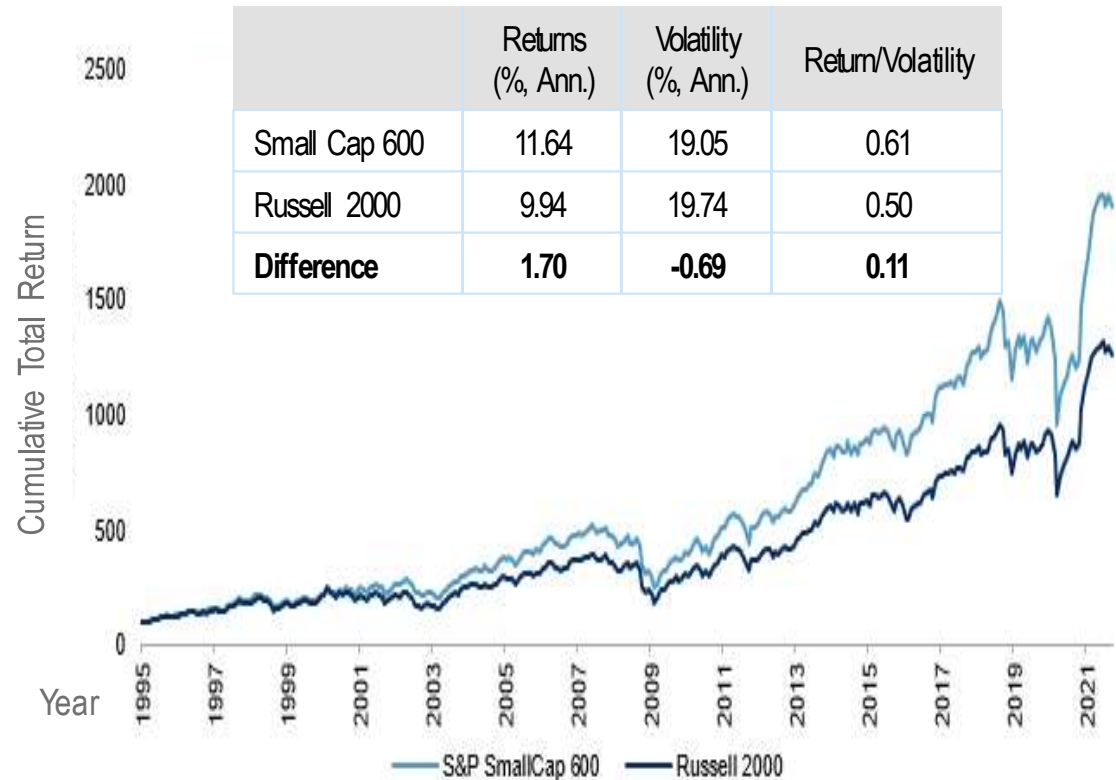
## Sovereign Yield Curve

as of 12/2021



# Small Cap Indices Comparative

- The S&P 600's historical outperformance has been consistent over various rolling time periods, especially over longer horizons.
- The S&P 600 has also experienced slightly lower volatility.
- S&P 600 has outperformed the Russell 2000 by 1.70% on an annualized basis from Dec. 31, 1994, to Sept. 30, 2021.



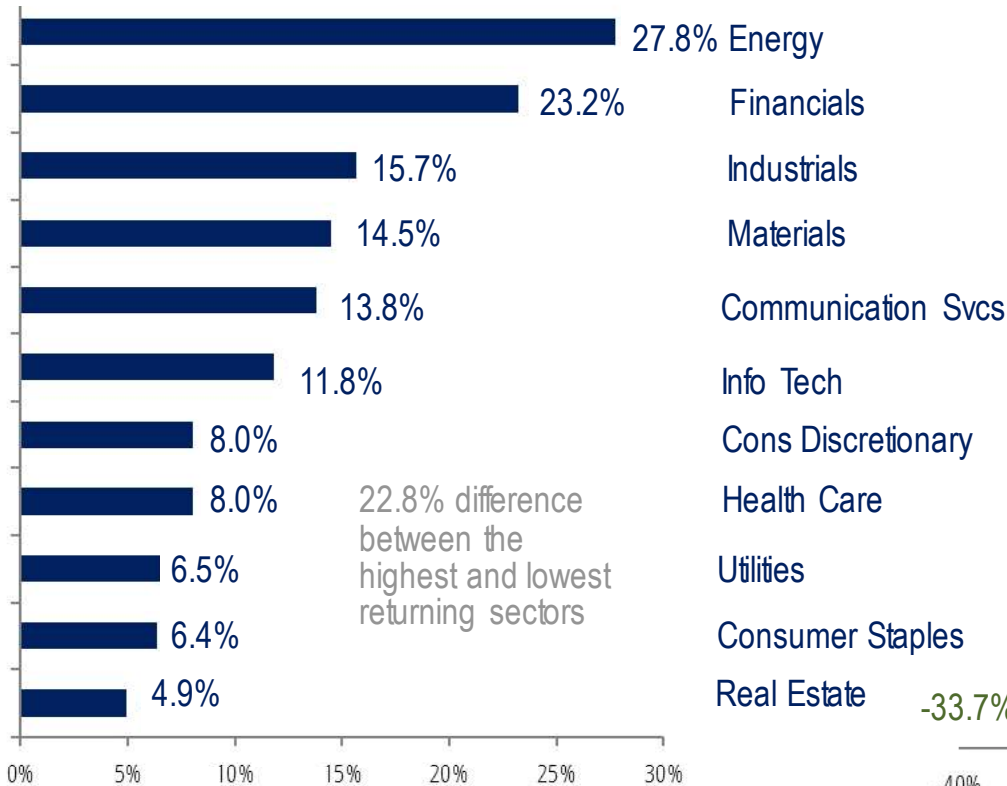
# S&P 500

The S&P 500 ended CY21 strong despite inflation and Omicron dominating the investment conversation.

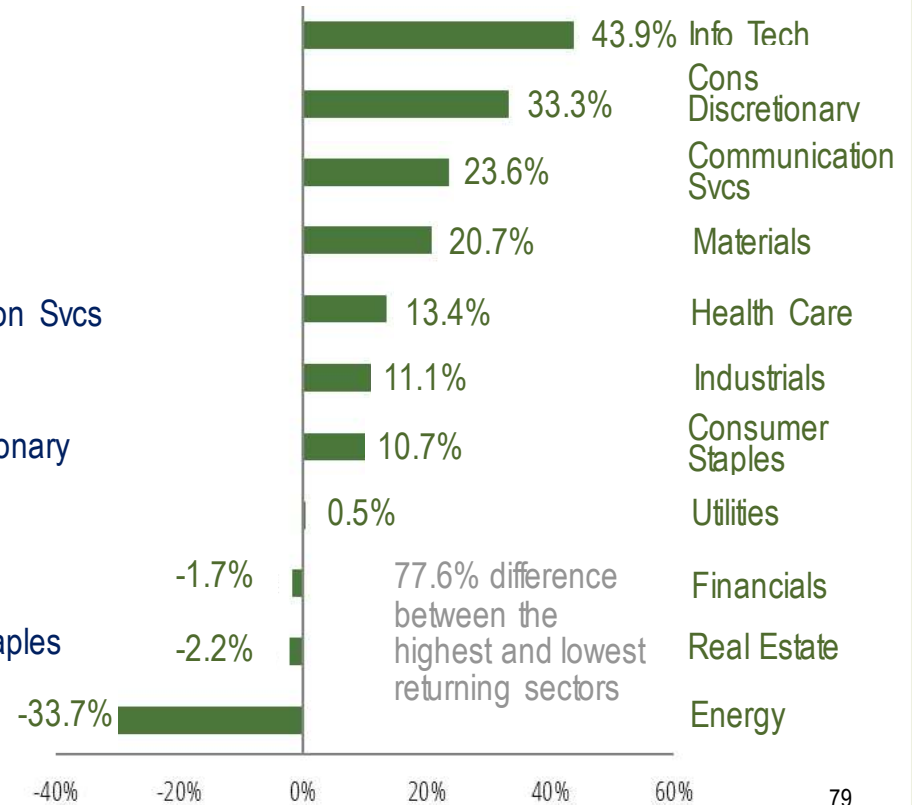


# S&P 500 Sector Returns

QTD Returns, 12/31/2020



1 Yr. Trailing Returns, 12/31/2020



# Domestic Market Returns

as of December 31, 2021

Domestic Equity		QTD	YTD	1 Year Trailing	3 Year Trailing	5 Year Trailing	10 Year Trailing
Large Cap	S&P 500	11.0%	28.7%	28.7%	26.1%	18.5%	16.6%
	Russell 1000 Value	7.8%	25.2%	25.2%	17.6%	11.2%	13.0%
	Russell 1000 Growth	11.6%	27.6%	27.6%	34.1%	25.3%	19.8%
Mid Cap	Russell Mid Cap	6.4%	22.6%	22.6%	23.3%	15.1%	14.9%
	Russell Mid Cap Value	8.5%	28.3%	28.3%	19.6%	11.2%	13.4%
	Russell Mid Cap Growth	2.8%	12.7%	12.7%	27.5%	19.8%	16.6%
Small Cap	Russell 2000	2.1%	14.8%	14.8%	20.0%	12.0%	13.2%
	Russell 2000 Value	4.4%	28.3%	28.3%	18.0%	9.1%	12.0%
	Russell 2000 Growth	0.0%	2.8%	2.8%	21.2%	14.5%	14.1%

Source: Morningstar Direct; GWCM Analysis

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# International Market Returns

as of December 31, 2021

International Equity		QTD	YTD	1 Year Trailing	3 Year Trailing	5 Year Trailing	10 Year Trailing
Developed Markets	MSCI EAFE	2.7%	11.3%	11.3%	13.5%	9.5%	8.0%
	Australia	2.1%	9.4%	9.4%	13.5%	9.1%	6.6%
	Canada	7.2%	26.0%	26.0%	19.2%	10.2%	6.0%
	France	7.1%	19.5%	19.5%	16.1%	11.9%	9.8%
	Germany	0.8%	5.3%	5.3%	12.4%	7.1%	8.2%
	Japan	-4.0%	1.7%	1.7%	11.7%	8.5%	8.3%
	Switzerland	12.8%	19.3%	19.3%	20.8%	14.4%	11.1%
	UK	5.6%	18.5%	18.5%	8.7%	6.2%	5.1%
Emerging Markets	MSCI Emerging Markets	-1.3%	-2.5%	-2.5%	10.9%	9.9%	5.5%
	Brazil	-6.5%	-17.4%	-17.4%	-5.5%	0.9%	-3.0%
	China	-6.1%	-21.7%	-21.7%	7.8%	9.4%	7.2%
	India	-0.2%	26.2%	26.2%	16.2%	15.1%	10.9%
	Indonesia	6.4%	2.1%	2.1%	0.8%	2.9%	1.0%
	Korea	-0.9%	-8.4%	-8.4%	14.2%	11.7%	7.0%
	Mexico	6.2%	22.5%	22.5%	10.2%	5.6%	1.8%
Russia	-9.2%	19.0%	19.0%	16.3%	10.5%	5.0%	



# Returns by Style

as of December 31, 2021

		3 Months		
		Value	Blend	Growth
Size	Large	7.8%	11.0%	11.6%
	Mid	8.5%	6.4%	2.8%
	Small	4.4%	2.1%	0.0%

		3 Years		
		Value	Blend	Growth
Size	Large	17.6%	26.1%	34.1%
	Mid	19.6%	23.3%	27.5%
	Small	18.0%	20.0%	21.2%

		1 Year		
		Value	Blend	Growth
Size	Large	25.2%	28.7%	27.6%
	Mid	28.3%	22.6%	12.7%
	Small	28.3%	14.8%	2.8%

		5 Years		
		Value	Blend	Growth
Size	Large	11.2%	18.5%	25.3%
	Mid	11.2%	15.1%	19.8%
	Small	9.1%	12.0%	14.5%

## Since Market Peak (February, 2020)

		Value	Blend	Growth
Size	Large	27.5%	45.7%	62.8%
	Mid	32.5%	38.7%	43.8%
	Small	37.6%	36.3%	32.6%

## Since Market Low (March, 2020)

		Value	Blend	Growth
Size	Large	97.0%	112.6%	131.6%
	Mid	124.4%	124.1%	117.9%
	Small	134.8%	126.0%	114.3%

Source: Morningstar Direct; GWCM Analysis; Large Blend – S&P 500 Index, Large Value – Russell 1000 Value Index, Large Growth – Russell 1000 Growth Index, Mid Blend – Russell Mid Cap Index, Mid Value – Russell Mid Cap Value Index, Mid Growth – Russell Mid Cap Growth Index, Small Blend – Russell 2000 Index, Small Value – Russell 2000 Value Index, Small Growth – Russell 2000 Growth Index

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# Fixed Income and Specialty Returns

as of December 31, 2021

	QTD	YTD	1 Year Trailing	3 Year Trailing	5 Year Trailing	10 Year Trailing
<b>Fixed Income</b>						
Bloomberg Barclays US Aggregate	0.0%	-1.5%	-1.5%	4.8%	3.6%	2.9%
Bloomberg Barclays US Treasury	0.2%	-2.3%	-2.3%	4.1%	3.1%	2.1%
Bloomberg Barclays US Govt/Credit Intermediate	-0.6%	-1.4%	-1.4%	3.9%	2.9%	2.4%
Bloomberg Barclays US Govt/Credit Long	2.2%	-2.5%	-2.5%	10.6%	7.4%	5.7%
Bloomberg Barclays US TIPS	2.4%	6.0%	6.0%	8.4%	5.3%	3.1%
Bloomberg Barclays US Corporate High Yield	0.7%	5.3%	5.3%	8.8%	6.3%	6.8%
FTSE WGBI	-1.1%	-7.0%	-7.0%	2.7%	2.9%	1.0%
JPM EMBI Global Diversified	-0.4%	-1.8%	-1.8%	5.9%	4.7%	5.3%
FTSE Treasury Bill 3 Month	0.0%	0.0%	0.0%	1.0%	1.1%	0.6%
<b>Specialty</b>						
Bloomberg Commodity	-1.6%	27.1%	27.1%	9.9%	3.7%	-2.9%
DJ US Select REIT	17.2%	45.9%	45.9%	16.8%	9.7%	10.7%
FTSE EPRA/NAREIT Developed Ex US	2.1%	8.8%	8.8%	7.4%	7.1%	7.8%

Source: Morningstar Direct, GWCM Analysis

Past performance is not a guarantee or prediction of future results.

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# TexaSaver Fund Performance Analysis

# US Money Market

## BlackRock Short Term Investment



as of December 31, 2021

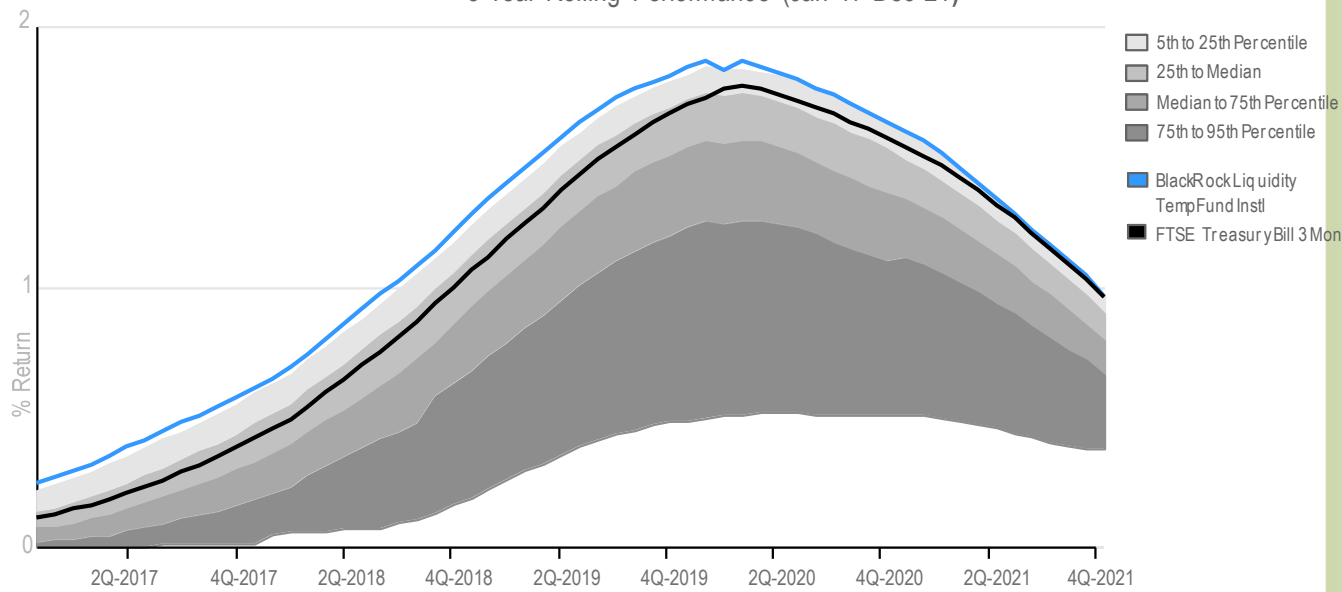
Program Assets	\$162.6 million
# of Texa\$aver accounts	20,169

Fund Overview	
Investment type	Collective Trust
Investment strategy	Active
Net Texa\$aver expense	0.08%

Fund Composition	
Cash	91.1%
US Bonds	8.9%

Reference: Exhibit A Fund Analysis, pg. 1  
BlackRock Liquidity TempFund Instl TMPXX

3 Year Rolling Performance (Jan 17-Dec 21)



	1Y	3Y	5Y	10Y
Fund / Peer Rank	0.01 / 47	0.96 / 7	1.19 / 6	0.68 / 4
Benchmark / Peer Rank	0.05 / 10	0.96 / 8	1.11 / 23	0.60 / 24
Excess to Benchmark	- 0.04	0.00	0.08	0.08

# Short Term Bond

## BlackRock 1-3 Yr. Govt. Bond Index F



as of December 31, 2021

Program Assets	\$61.8 million
# of Texa\$aver accounts	20,321

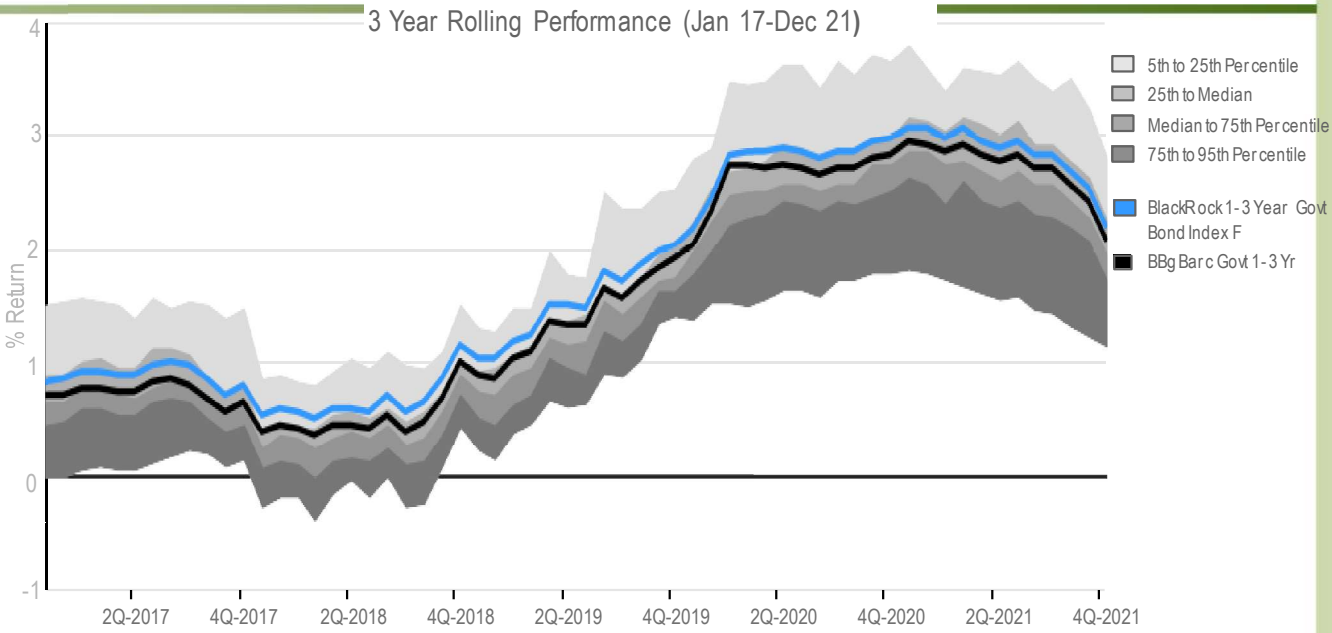
### Fund Overview

Investment type	Collective Trust
Investment strategy	Passive
Net Texa\$aver expense	0.06%

### Fund Composition

Cash	0.7%
US Bonds	99.3%

Reference: Exhibit A Fund Analysis, pg. 2  
BlackRock 1-3 Year Govt Bond Index F



	1Y	3Y	5Y	10Y
Fund / Peer Rank	-0.52 / 11	2.15 / 26	1.76 / 21	1.23 / 19
Benchmark / Peer Rank	-0.60 / 12	2.03 / 36	1.62 / 35	1.10 / 44
Excess to Benchmark	0.08	0.12	0.14	0.13

# Intermediate Bond

## BlackRock Bond Index



as of December 31, 2021

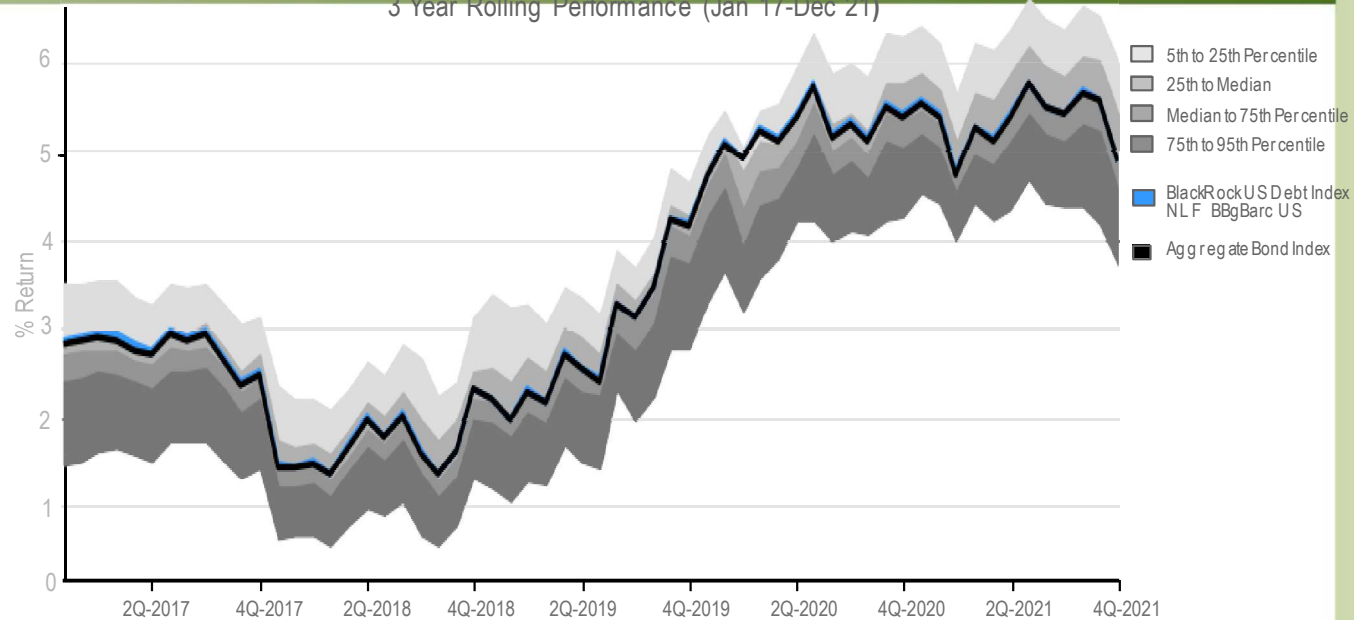
<b>Program Assets</b>	\$314.5 million
<b># of TexaSaver accounts</b>	33,242

Fund Overview	
<b>Investment type</b>	Collective Trust
<b>Investment strategy</b>	Passive
<b>Net TexaSaver expense</b>	0.11%

Fund Composition	
Cash	11.4%
US Bonds	87.9%
Other	0.7%

Reference: Exhibit A Fund Analysis, pg. 3  
BlackRock US Debt Index NL F

3 Year Rolling Performance (Jan 17-Dec 21)



	1Y	3Y	5Y	10Y
Fund / Peer Rank	- 1.60 / 51	4.80 / 52	3.59 / 46	2.93 / 60
Benchmark / Peer Rank	- 1.54 / 48	4.79 / 52	3.57 / 50	2.90 / 61
Excess to Benchmark	- 0.06	0.01	0.02	0.03

# Balanced Fund

## Vanguard Wellington Admiral (VWENX)



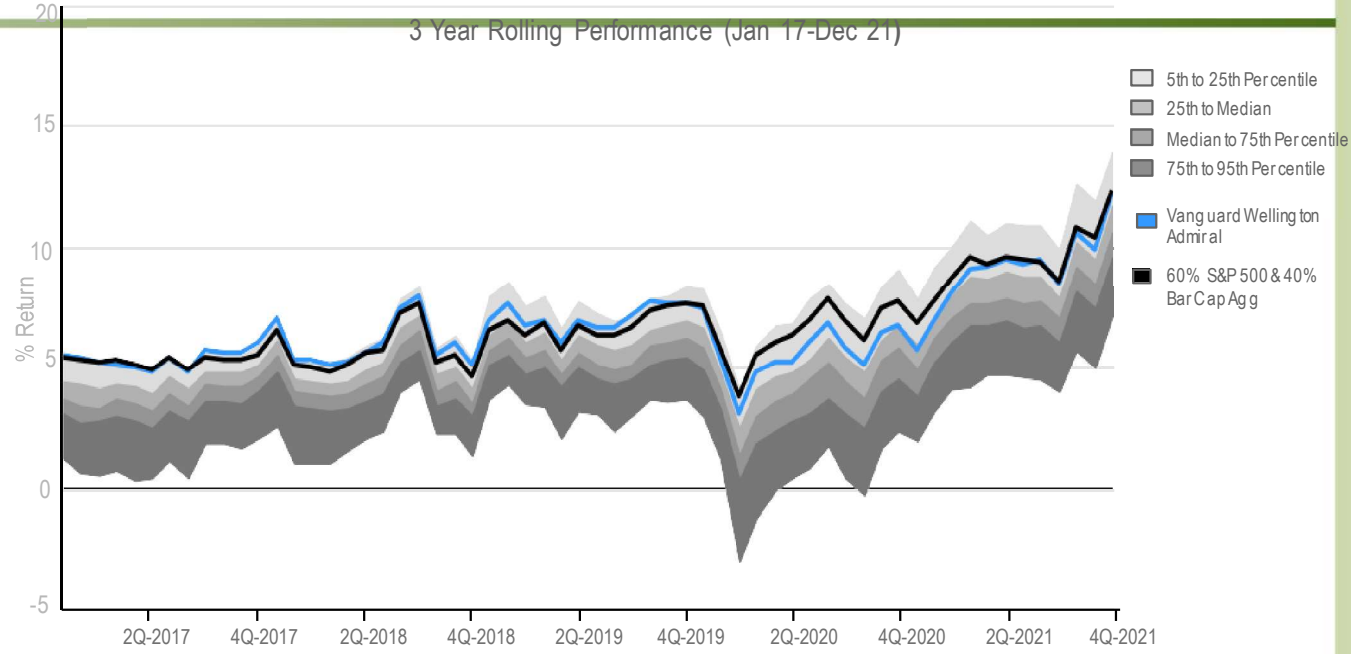
as of December 31, 2021

Program Assets	\$504.5 million
# of Texa\$aver accounts	37,134

Fund Overview	
Investment type	Mutual Fund
Investment strategy	Active
Net Texa\$aver expense	0.17%

Fund Composition	
Cash	2.2%
US Stocks	57.5%
US Bonds	27.2%
Non-US Stocks	7.3%
Convertible Bonds	1.1%
Non-US Bonds	4.8%

Reference: Exhibit A Fund Analysis, pg. 4  
Vanguard Wellington Admiral VWENX



	1Y	3Y	5Y	10Y
Fund / Peer Rank	19.12 / 6	17.36 / 19	12.40 / 15	11.46 / 12
Benchmark / Peer Rank	15.86 / 32	17.54 / 16	12.62 / 12	11.14 / 13
Excess to Benchmark	3.26	- 0.18	- 0.22	0.36

# Large Cap Blend

## Vanguard Institutional Index (VIIIX)

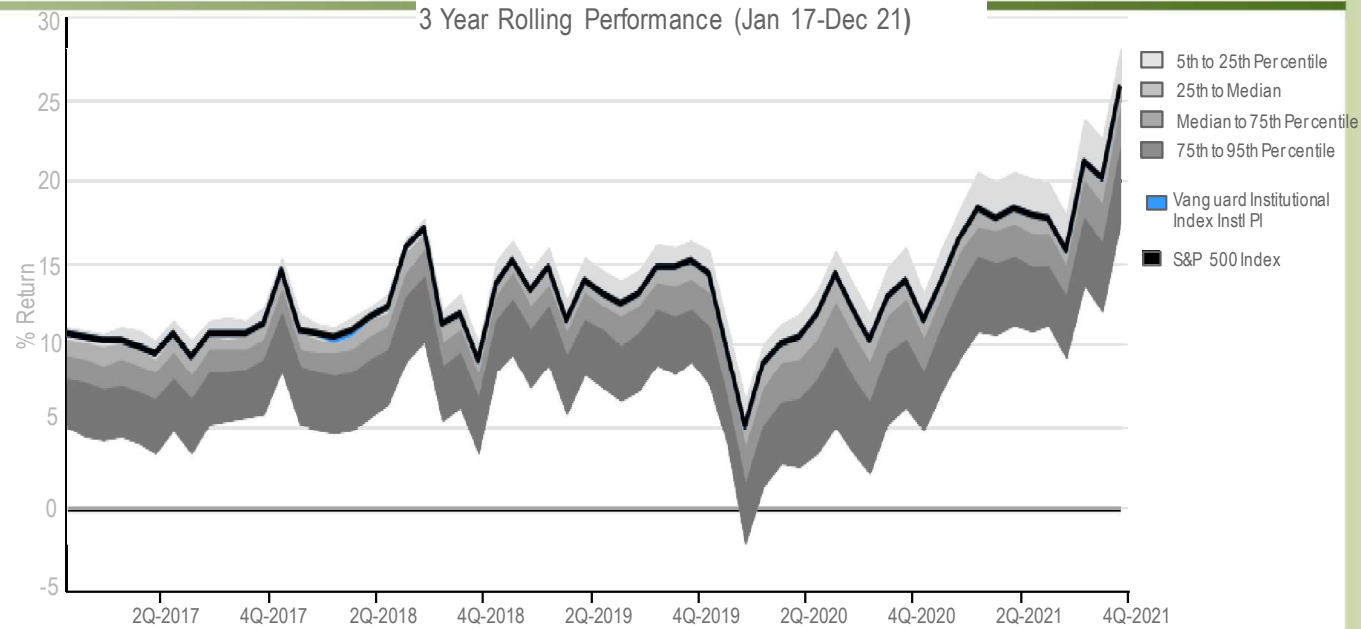


as of December 31, 2021

Program Assets	\$959.1 million
# of Texa\$aver accounts	44,034
<b>Fund Overview</b>	
Investment type	Mutual Fund
Investment strategy	Passive
Net Texa\$aver expense	0.02%

<b>Fund Composition</b>	
Cash	0.4%
US Stocks	98.6%
Non-US Stocks	1.0%

Reference: Exhibit A Fund Analysis, pg. 14  
Vanguard Institutional Index Instl PI VIIIX



	1Y	3Y	5Y	10Y
Fund / Peer Rank	28.69 / 23	26.06 / 23	18.46 / 17	16.54 / 11
Benchmark / Peer Rank	28.71 / 22	26.07 / 23	18.47 / 17	16.55 / 11
Excess to Benchmark	- 0.02	0.01	- 0.01	0.01

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# Large Cap Growth

## Vanguard Growth Index Institutional (VIGIX)



as of December 31, 2021

Program Assets \$694.6 million

# of Texa\$aver accounts 17,355

### Fund Overview

Investment type Mutual Fund

Investment strategy Passive

Net Texa\$aver expense 0.04%

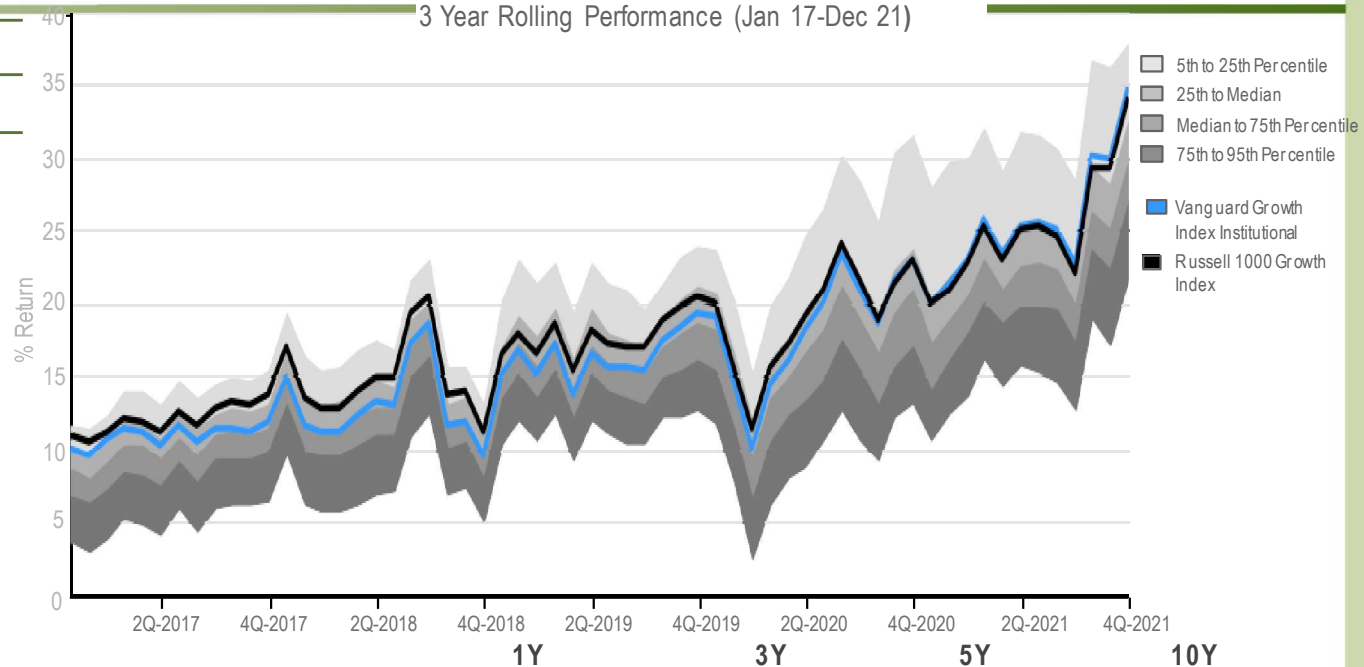
### Fund Composition

Cash 0.3%

US Stocks 98.8%

Non-US Stocks 0.9%

Reference: Exhibit A Fund Analysis, pg. 15  
Vanguard Growth Index Institutional VIGIX



	1Y	3Y	5Y	10Y
Fund / Peer Rank	27.27 / 20	34.79 / 11	24.79 / 28	19.31 / 20
Benchmark / Peer Rank	27.60 / 17	34.08 / 23	25.32 / 20	19.79 / 15
Excess to Benchmark	- 0.33	0.71	- 0.53	- 0.39

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# Mid Cap Blend

## BlackRock Mid-Cap Equity Index Fund F



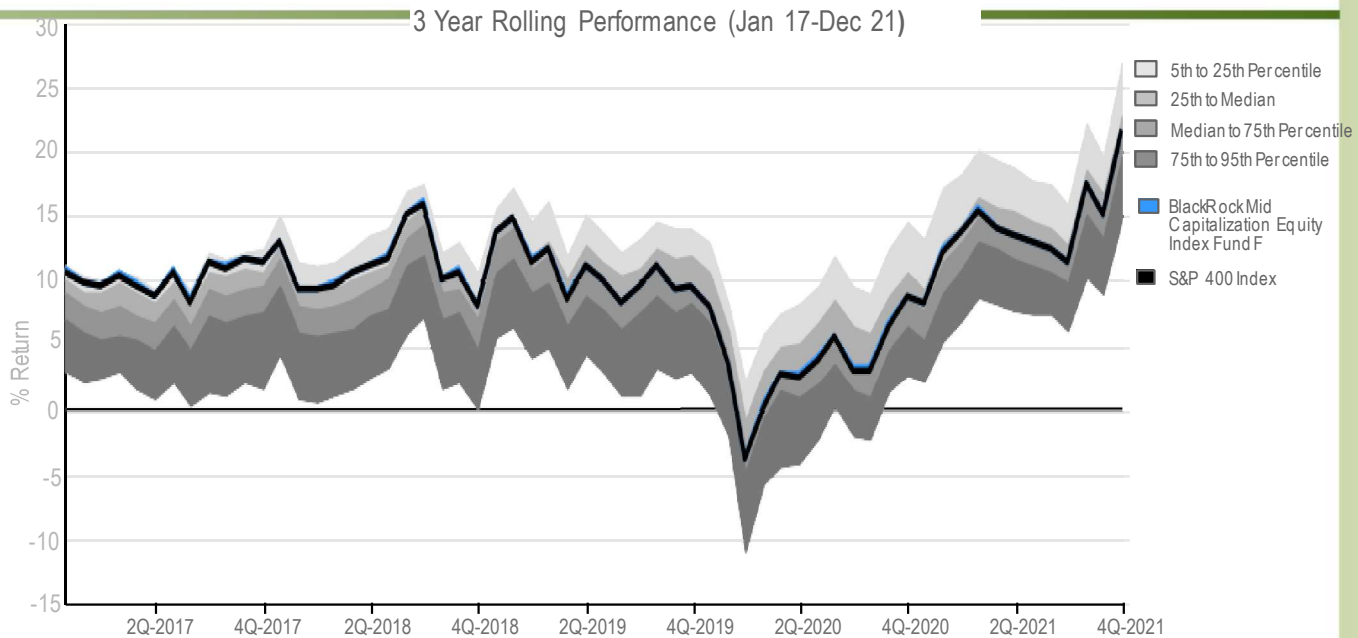
as of December 31, 2021

Program Assets	\$267.4 million
# of Texa\$aver accounts	33,598

Fund Overview	
Investment type	Collective Trust
Investment strategy	Passive
Net Texa\$aver expense	0.02%

Fund Composition	
Cash	3.1%
US Stocks	96.6%
Non-US Stocks	0.3%

Reference: Exhibit A Fund Analysis, pg. 16  
BR Mid Capitalization Equity Index Fund F



	1Y	3Y	5Y	10Y
Fund / Peer Rank	24.70 / 43	21.46 / 37	11.88 / 20	14.27 / 25
Benchmark / Peer Rank	24.76 / 42	21.41 / 40	11.81 / 21	14.20 / 26
Excess to Benchmark	- 0.06	0.05	0.07	0.07

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# Mid Cap Growth

## Wellington MidCap Opportunities - II



as of December 31, 2021

Program Assets	\$34.7 million
# of TexaSaver accounts	33,598

### Fund Overview

Investment type	Collective Trust
Investment strategy	Active
Net TexaSaver expense	0.66%

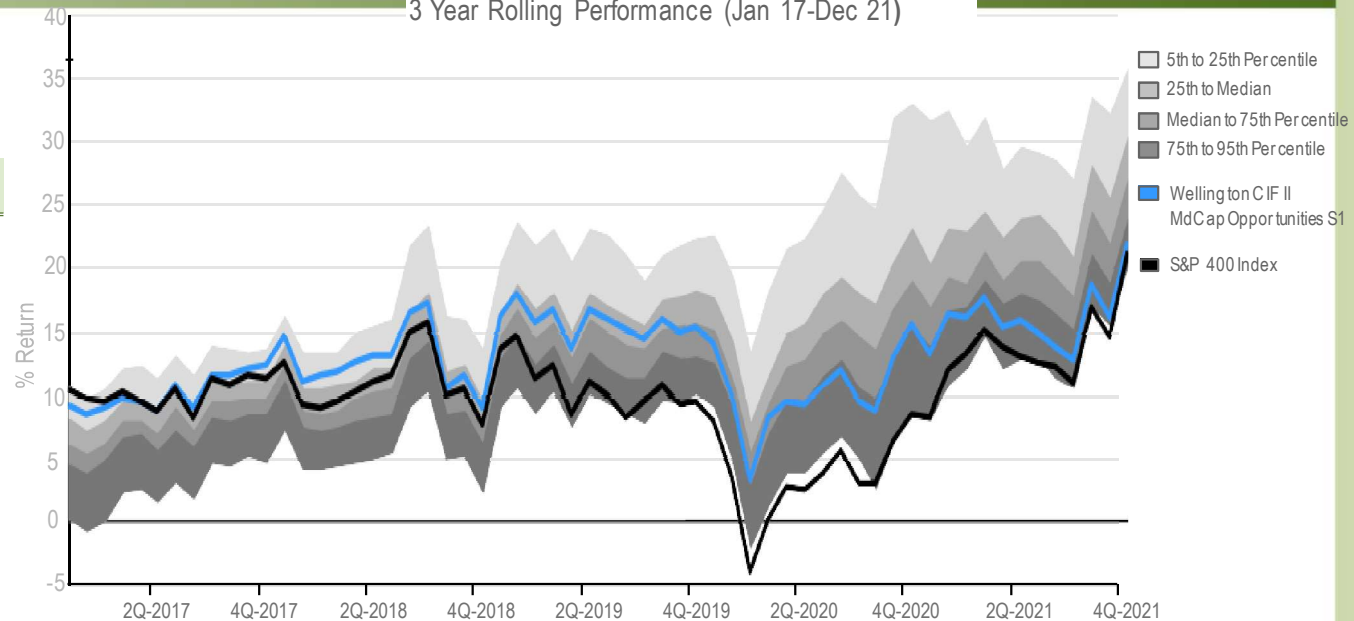
### Fund Composition

Cash	0.7%
US Stocks	94.5%
Non-US Stocks	4.8%

Reference: Exhibit A Fund Analysis, pg. 17  
Wellington CIF II MdCap Opportunities S1

Agenda item 11 – Joint Meeting March 9, 2022

3 Year Rolling Performance (Jan 17-Dec 21)



	1Y	3Y	5Y	10Y
Fund / Peer Rank	9.92 / 71	22.26 / 91	16.15 / 78	16.05 / 49
Benchmark / Peer Rank	24.76 / 9	21.41 / 94	13.09 / 98	14.20 / 83
Excess to Benchmark	- 14.84	0.84	3.06	1.85

# Small Cap Value

## Lord Abbett Small Cap Value I (LRSYX)

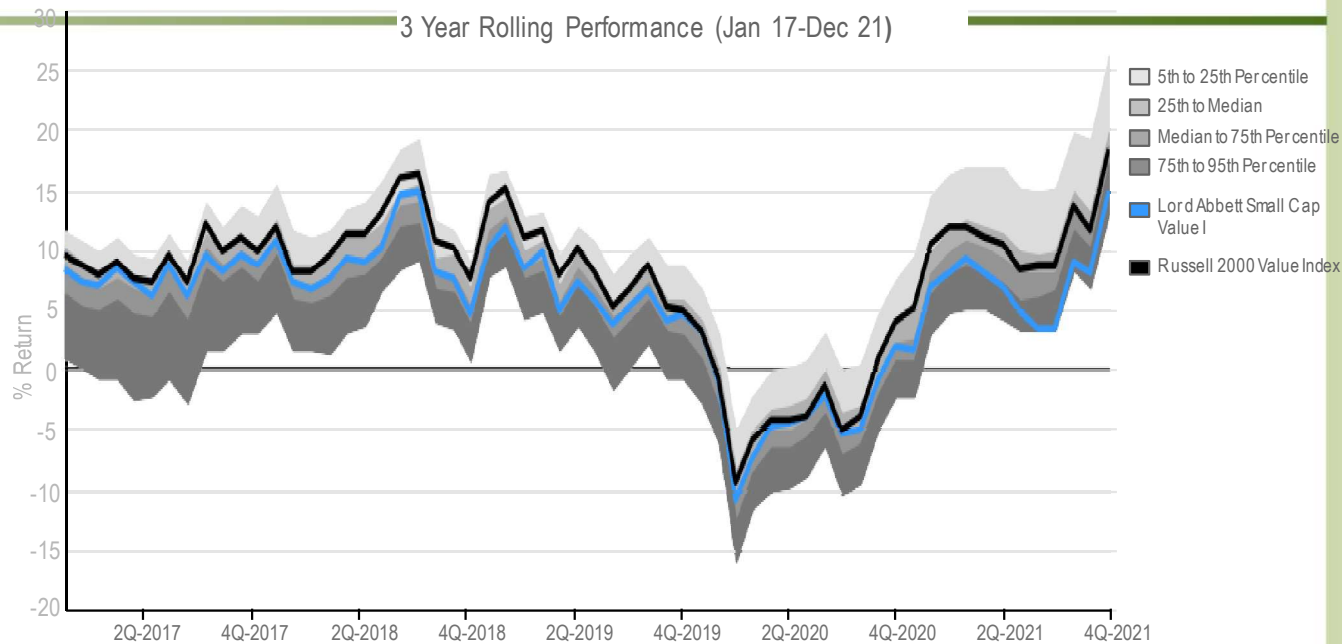
as of December 31, 2021

Program Assets	\$180.3 million
# of TexaSaver accounts	33,361

Fund Overview	
Investment type	Mutual Fund
Investment strategy	Active
Net TexaSaver expense	0.85%

Fund Composition	
US Stocks	91.6%
Non-US Stocks	8.4%

Reference: Exhibit A Fund Analysis, pg. 18  
Lord Abbett Small Cap Value I LRSYX



	1Y	3Y	5Y	10Y
Fund / Peer Rank	26.75 / 76	14.71 / 87	7.29 / 75	9.96 / 82
Benchmark / Peer Rank	28.27 / 68	17.99 / 59	9.07 / 51	12.03 / 41
Excess to Benchmark	- 1.52	- 3.28	- 1.78	- 2.07

# International Large Blend

## Fidelity International Index (FSPSX)



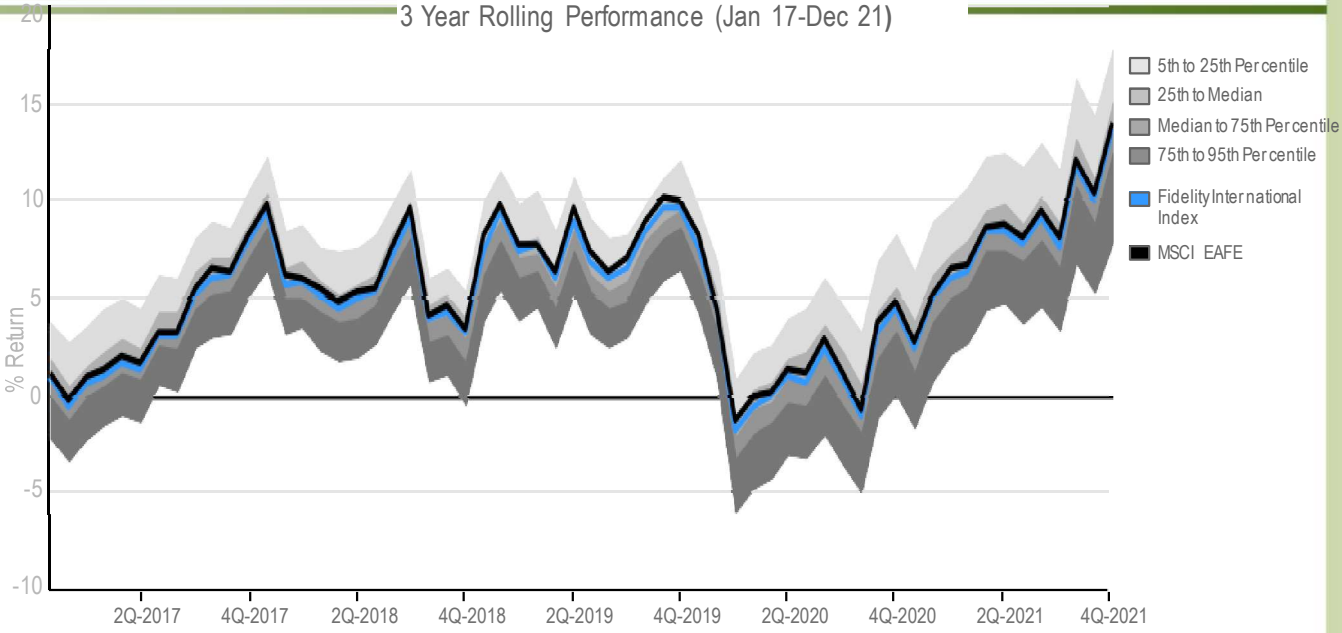
as of December 31, 2021

Program Assets	\$38.7 million
# of Texa\$aver accounts	23,429

Fund Overview	
Investment type	Mutual Fund
Investment strategy	Passive
Net Texa\$aver expense	0.035%

Fund Composition	
Cash	2.8%
US Stocks	8.5%
Non-US Stocks	88.3%
Other	0.4%

Reference: Exhibit A Fund Analysis, pg. 19  
Fidelity International Index FSPSX



	1Y	3Y	5Y	10Y
Fund / Peer Rank	11.45 / 34	13.72 / 47	9.78 / 44	8.21 / 40
Benchmark / Peer Rank	11.78 / 30	14.08 / 42	10.07 / 32	8.53 / 27
Excess to Benchmark	- 0.33	- 0.36	- 0.29	- 0.32

# International Large Growth

## Fidelity Diversified International (FDIVX)



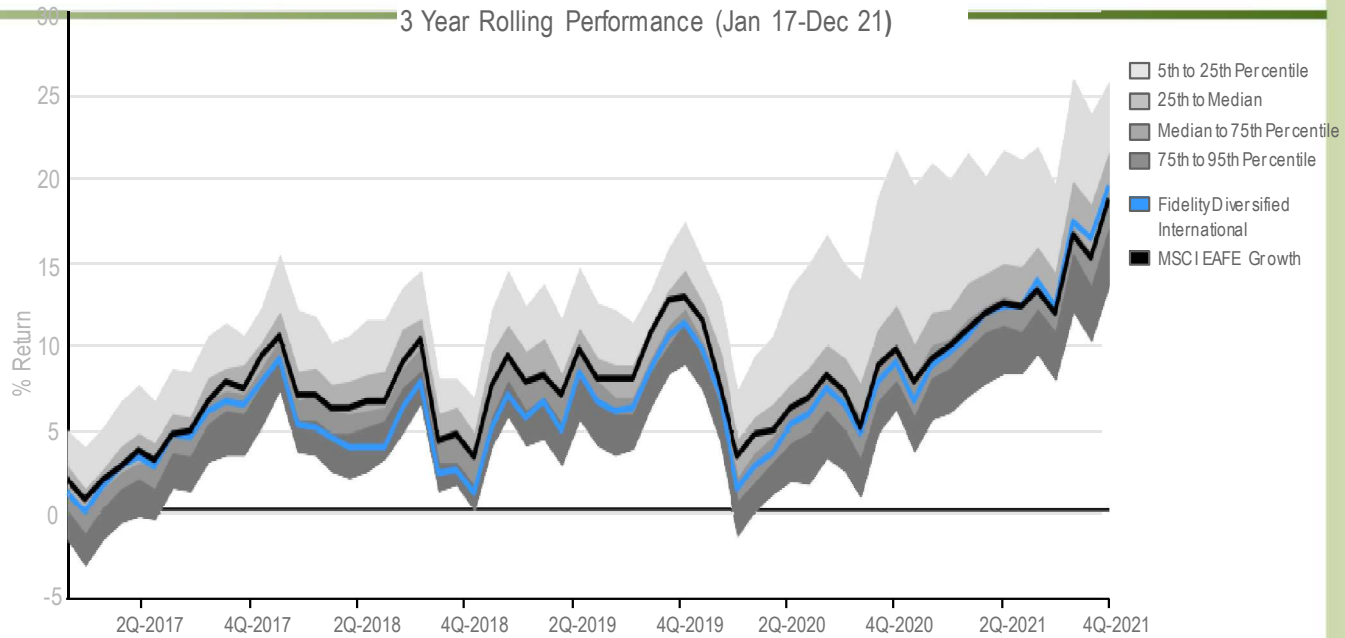
as of December 31, 2021

Program Assets	\$313.9 million
# of TexaSaver accounts	36,219

Fund Overview	
Investment type	Mutual Fund
Investment strategy	Active
Net TexaSaver expense	0.80%

Fund Composition	
Cash	1.5%
US Stocks	9.6%
Non-US Stocks	88.5%
Other	0.4%

Reference: Exhibit A Fund Analysis, pg. 20  
Fidelity International Index FDIVX



	1Y	3Y	5Y	10Y
Fund / Peer Rank	12.84 / 22	20.28 / 44	13.31 / 58	10.38 / 36
Benchmark / Peer Rank	11.59 / 33	19.37 / 53	14.00 / 44	10.48 / 34
Excess to Benchmark	1.25	0.91	-0.69	-0.10

Agenda item 11 – Joint Meeting March 9, 2022

# International Specialty

## AB All Market Real Return Portfolio Fund (AMTIX)

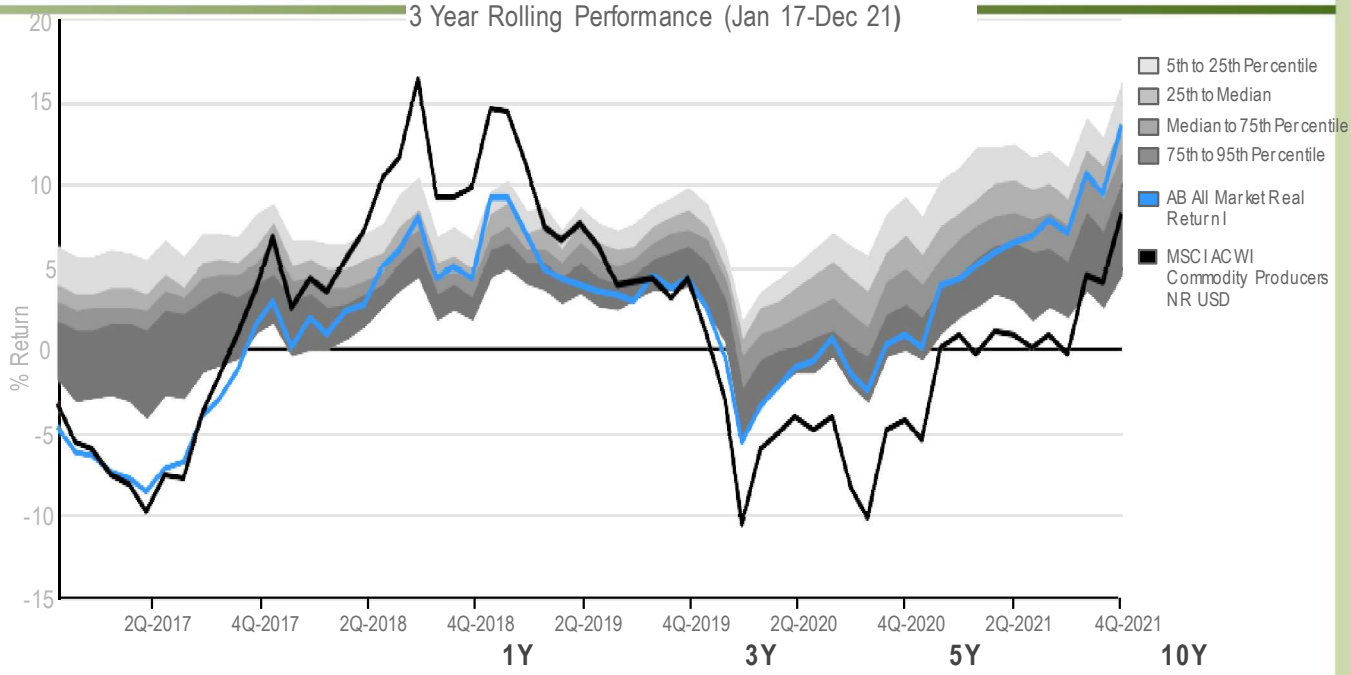


as of December 31, 2021

Program Assets	\$3.8 million
# of Texa\$aver accounts	725
<b>Fund Overview</b>	
Investment type	Mutual Fund
Investment strategy	Active
Net Texa\$aver expense	0.32%

<b>Fund Composition</b>	
Cash	18.5%
US Stocks	40.8%
Non-US Stocks	40.4%
Other	0.3%

Reference: Exhibit A Fund Analysis, pg. 21  
AB All Market Real Return | AMTIX



	1Y	3Y	5Y	10Y
Fund / Peer Rank	26.56 / 1	13.87 / 25	7.64 / 64	2.56 / 99
Benchmark / Peer Rank	28.14 / 1	8.30 / 85	4.97 / 90	1.18 / 100
Excess to Benchmark	- 1.58	5.57	2.67	1.38

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# Target Date Retirement Fund

## BlackRock LifePath Index Retire F Fund

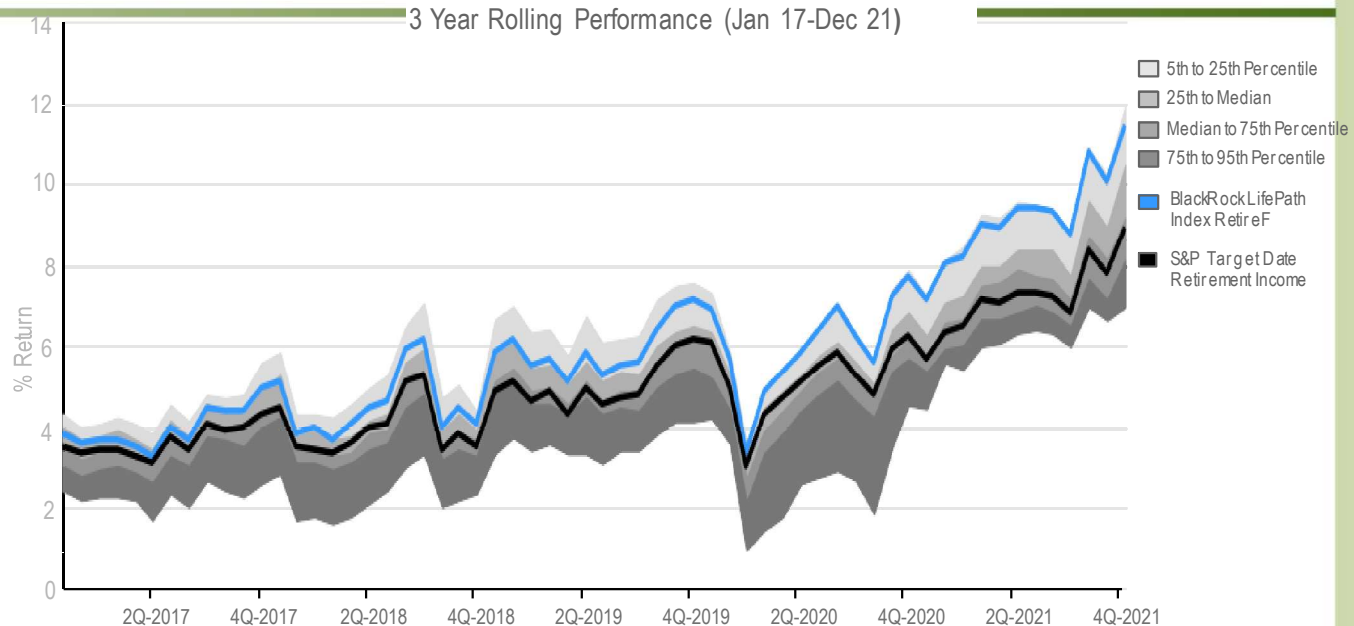


as of December 31, 2021

Program Assets	\$359.6 million
# of Texa\$aver accounts	20,441
<b>Fund Overview</b>	
Investment type	Collective Trust
Investment strategy	Passive
Net Texa\$aver expense	0.08%

<b>Fund Composition</b>	
US Stocks	24.3%
Bonds	54.2%
TIPS	5.8%
Non-US Stocks	12.6%
Other	3.1%

Reference: Exhibit A Fund Analysis, pg. 5  
BR LifePath Index Retire F



	1Y	3Y	5Y	10Y
Fund / Peer Rank	7.03 / 21	11.54 / 9	8.12 / 11	6.63 / 19
Benchmark / Peer Rank	5.11 / 71	9.03 / 56	6.52 / 56	5.59 / 63
Excess to Benchmark	1.92	2.51	1.60	1.04

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# Target Date 2025 Fund

## BlackRock LifePath Index 2025 F Fund

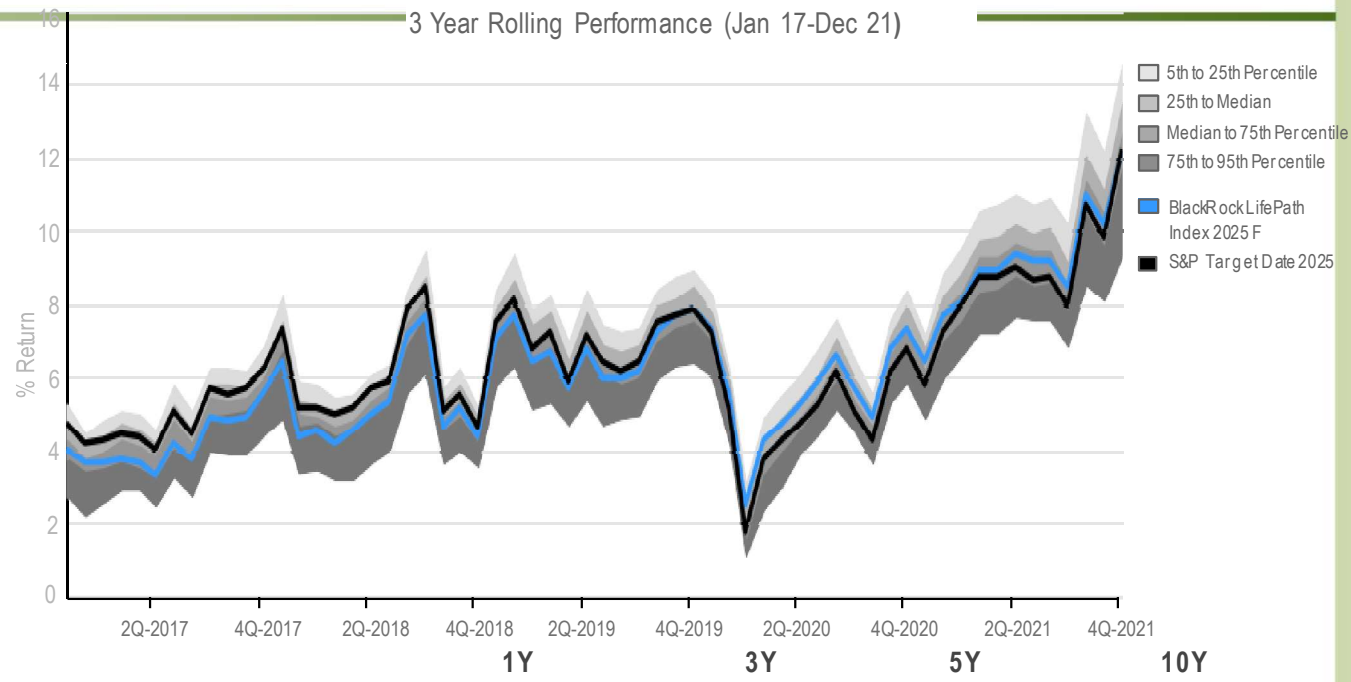


as of December 31, 2021

Program Assets	\$137.8 million
# of Texa\$aver accounts	12,273
<b>Fund Overview</b>	
Investment type	Collective Trust
Investment strategy	Passive
Net Texa\$aver expense	0.08%

<b>Fund Composition</b>	
US Stocks	24.3%
Bonds	54.2%
TIPS	5.8%
Non-US Stocks	12.6%
Other	3.1%

Reference: Exhibit A Fund Analysis, pg. 6  
BR LifePath Index 2025 F



	1Y	3Y	5Y	10Y
Fund / Peer Rank	9.06 / 79	13.26 / 65	9.54 / 66	8.36 / 78
Benchmark / Peer Rank	10.67 / 36	13.37 / 56	9.65 / 64	9.01 / 62
Excess to Benchmark	- 1.61	- 0.11	- 0.11	- 0.65

# Target Date 2030 Fund

## BlackRock LifePath Index 2030 F Fund

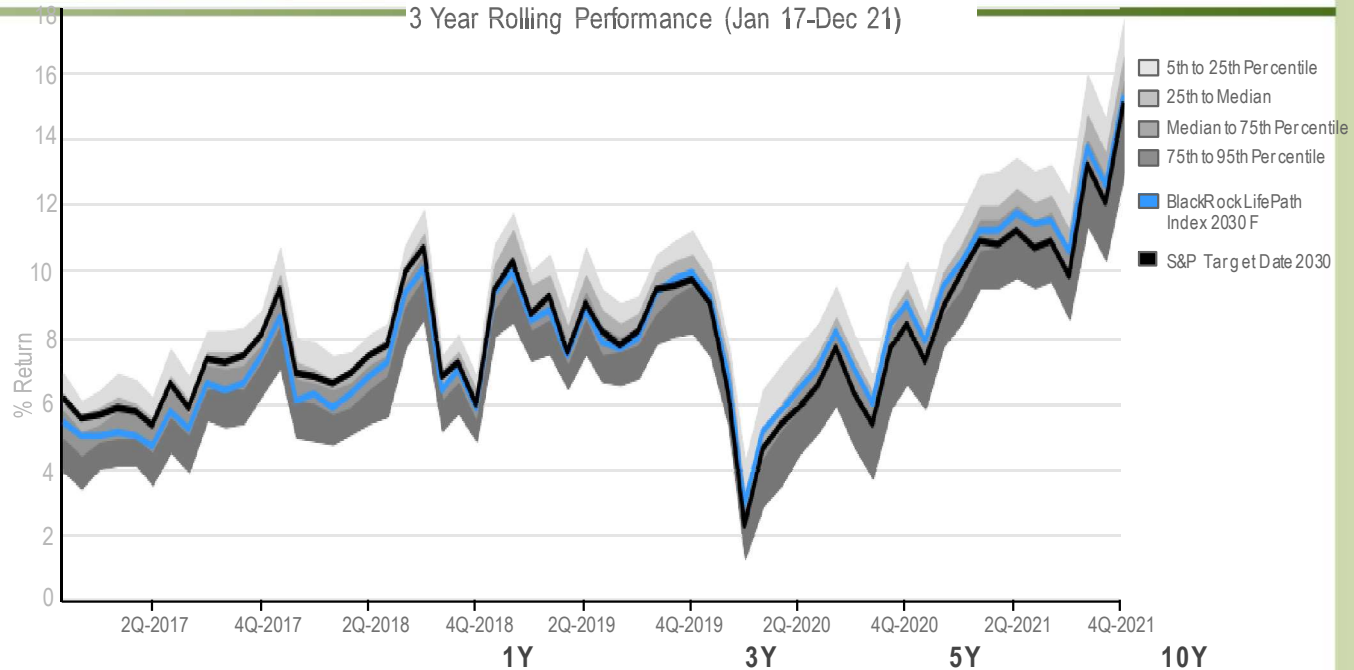


as of December 31, 2021

Program Assets	\$147.2 million
# of TexaSaver accounts	15,973
<b>Fund Overview</b>	
Investment type	Collective Trust
Investment strategy	Passive
Net TexaSaver expense	0.08%

<b>Fund Composition</b>	
US Stocks	24.3%
Bonds	54.2%
TIPS	5.8%
Non-US Stocks	12.6%
Other	3.1%

Reference: Exhibit A Fund Analysis, pg. 7  
BR LifePath Index 2030 F



	1Y	3Y	5Y	10Y
Fund / Peer Rank	11.50 / 59	15.04 / 67	10.74 / 70	9.28 / 74
Benchmark / Peer Rank	12.61 / 35	14.90 / 72	10.63 / 74	9.83 / 64
Excess to Benchmark	- 1.11	0.14	0.11	- 0.55

Agenda item 11 – Joint Meeting March 9, 2022

# Target Date 2035 Fund

## BlackRock LifePath Index 2035 F Fund

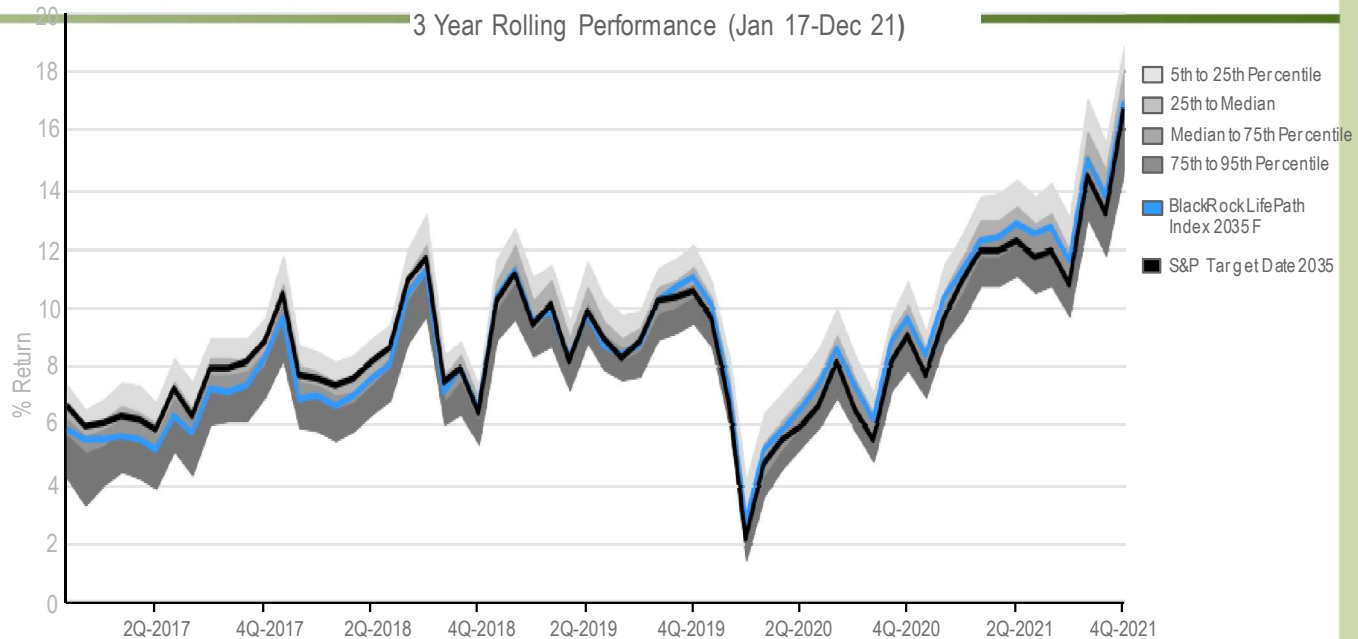


as of December 31, 2021

Program Assets	\$126.3 million
# of Texa\$aver accounts	19,201
<b>Fund Overview</b>	
Investment type	Collective Trust
Investment strategy	Passive
Net Texa\$aver expense	0.08%

<b>Fund Composition</b>	
US Stocks	24.3%
Bonds	54.2%
TIPS	5.8%
Non-US Stocks	12.6%
Other	3.1%

Reference: Exhibit A Fund Analysis, pg. 8  
BR LifePath Index 2035 F



	1Y	3Y	5Y	10Y
Fund / Peer Rank	13.88 / 60	16.74 / 58	11.88 / 62	10.15 / 75
Benchmark / Peer Rank	14.93 / 26	16.56 / 66	11.67 / 68	10.63 / 62
Excess to Benchmark	- 1.05	0.18	0.21	- 0.48

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# Target Date 2040 Fund

## BlackRock LifePath Index 2040 F Fund

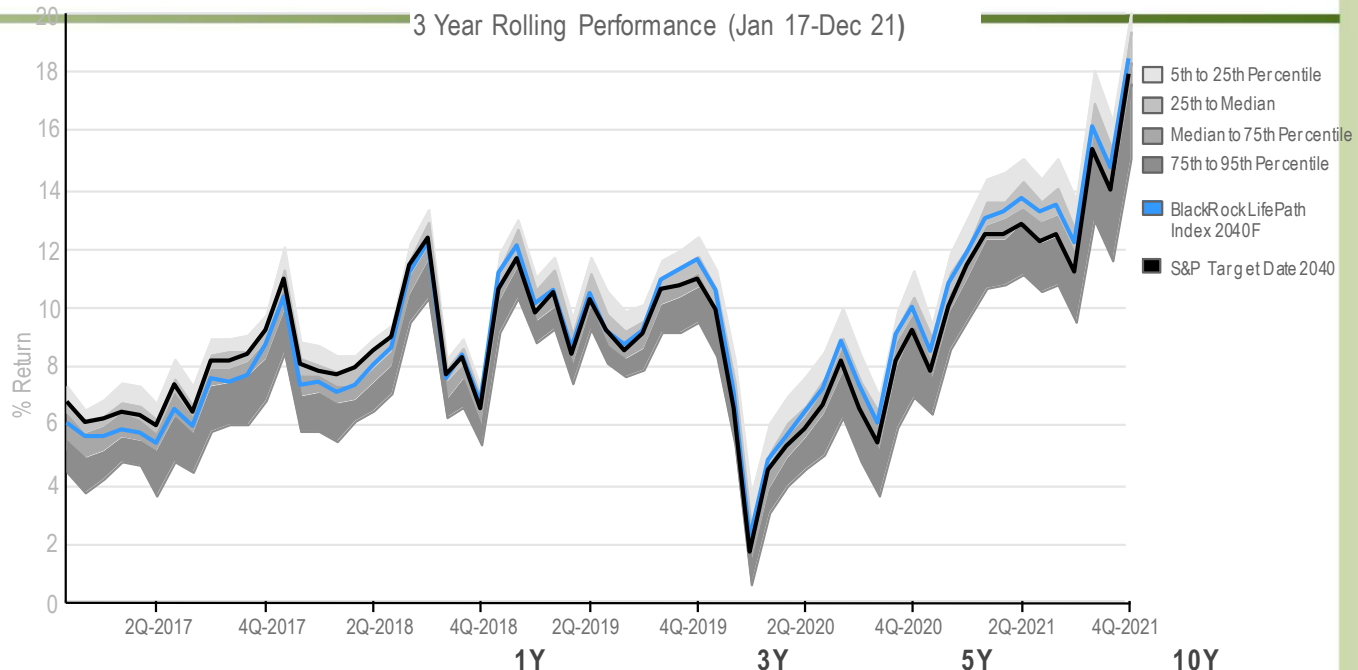


as of December 31, 2021

Program Assets	\$115.1 million
# of Texa\$aver accounts	20,465
<b>Fund Overview</b>	
Investment type	Collective Trust
Investment strategy	Passive
Net Texa\$aver expense	0.08%

<b>Fund Composition</b>	
US Stocks	24.3%
Bonds	54.2%
TIPS	5.8%
Non-US Stocks	12.6%
Other	3.1%

Reference: Exhibit A Fund Analysis, pg. 9  
BR LifePath Index 2040 F



	1Y	3Y	5Y	10Y
Fund / Peer Rank	16.04 / 46	18.26 / 46	12.90 / 42	10.90 / 69
Benchmark / Peer Rank	16.55 / 27	17.69 / 69	12.40 / 68	11.19 / 66
Excess to Benchmark	- 0.51	0.57	0.50	- 0.29

# Target Date 2045 Fund

## BlackRock LifePath Index 2045 F Fund



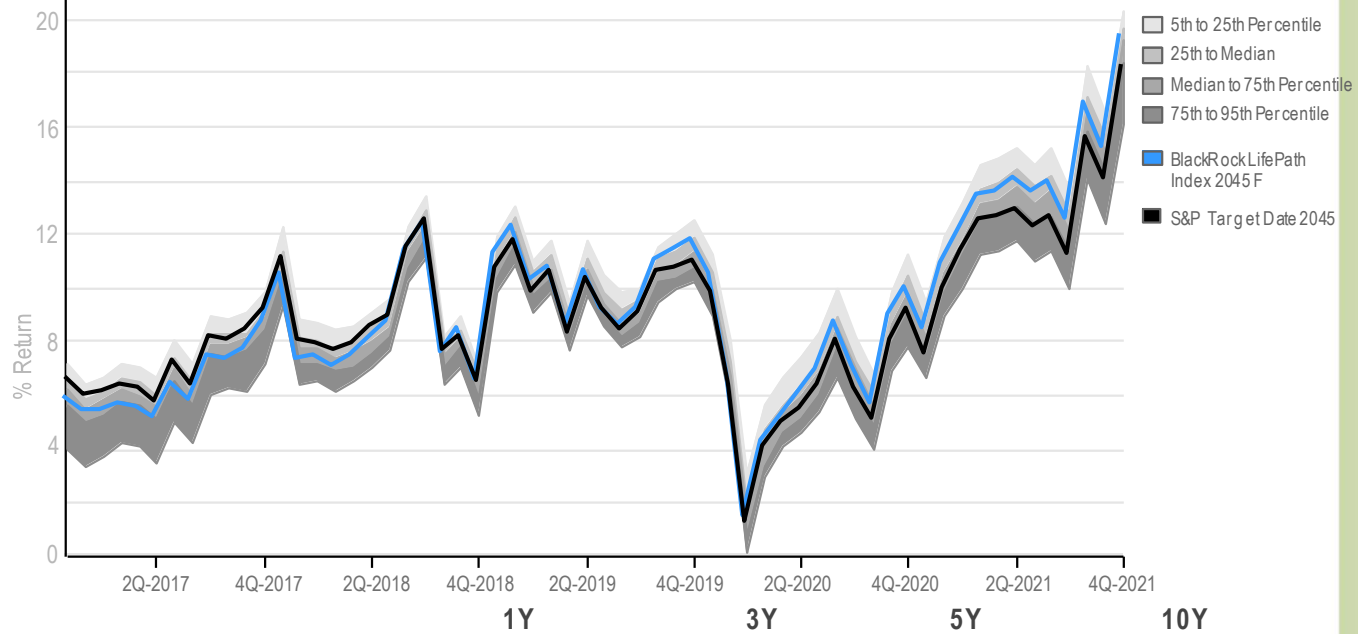
as of December 31, 2021

Program Assets	\$117.4 million
# of Texa\$aver accounts	25,397
<b>Fund Overview</b>	
Investment type	Collective Trust
Investment strategy	Passive
Net Texa\$aver expense	0.08%

<b>Fund Composition</b>	
US Stocks	24.3%
Bonds	54.2%
TIPS	5.8%
Non-US Stocks	12.6%
Other	3.1%

Reference: Exhibit A Fund Analysis, pg. 10  
BR LifePath Index 2045 F

3 Year Rolling Performance (Jan 17-Dec 21)



	1Y	3Y	5Y	10Y
Fund / Peer Rank	17.79 / 24	19.51 / 35	13.67 / 36	11.53 / 61
Benchmark / Peer Rank	17.51 / 34	18.32 / 78	12.81 / 68	11.56 / 60
Excess to Benchmark	0.28	1.19	0.86	-0.03

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# Target Date 2050 Fund

## BlackRock LifePath Index 2050 F Fund

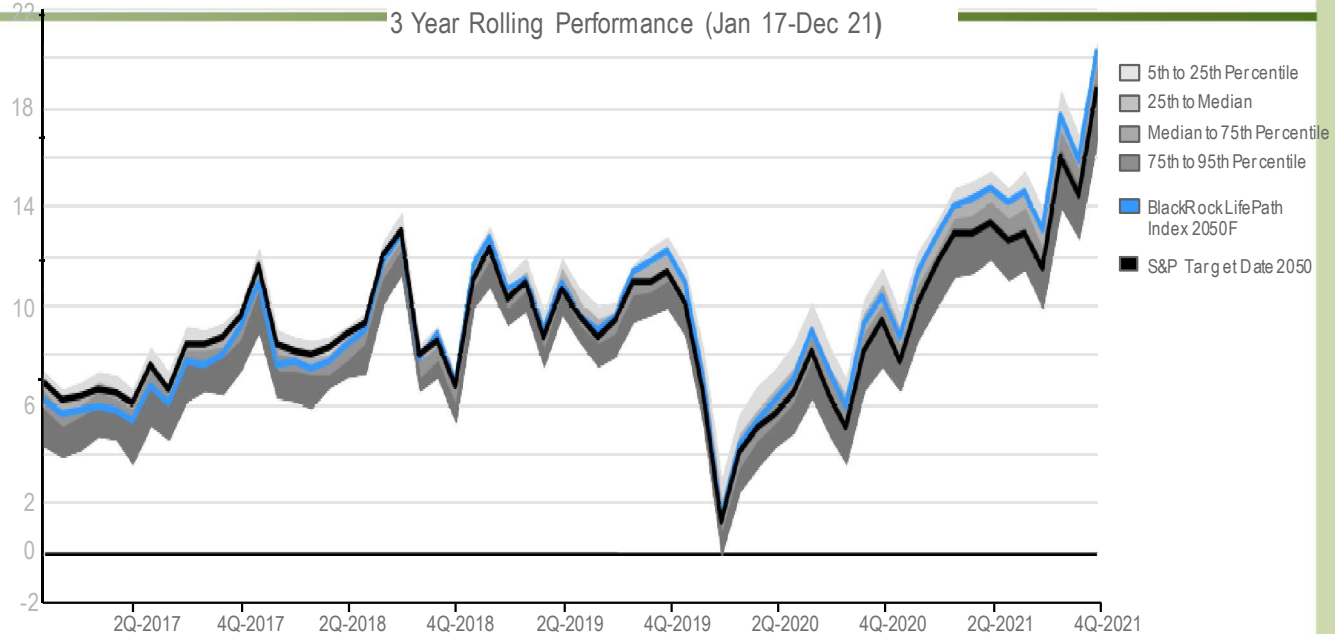


as of December 31, 2021

Program Assets	\$126.2 million
# of TexaSaver accounts	36,158
<b>Fund Overview</b>	
Investment type	Collective Trust
Investment strategy	Passive
Net TexaSaver expense	0.08%

<b>Fund Composition</b>	
US Stocks	24.3%
Bonds	54.2%
TIPS	5.8%
Non-US Stocks	12.6%
Other	3.1%

Reference: Exhibit A Fund Analysis, pg. 11  
BR LifePath Index 2050 NL F



	1Y	3Y	5Y	10Y
Fund / Peer Rank	18.76 / 14	20.14 / 21	10.91 / 31	11.91 / 42
Benchmark / Peer Rank	17.99 / 34	18.66 / 78	10.56 / 53	11.83 / 54
Excess to Benchmark	0.77	1.48	0.35	0.08

Agenda item 11 – Joint Meeting March 9, 2022

# Target Date 2055 Fund

## BlackRock LifePath Index 2055 F Fund

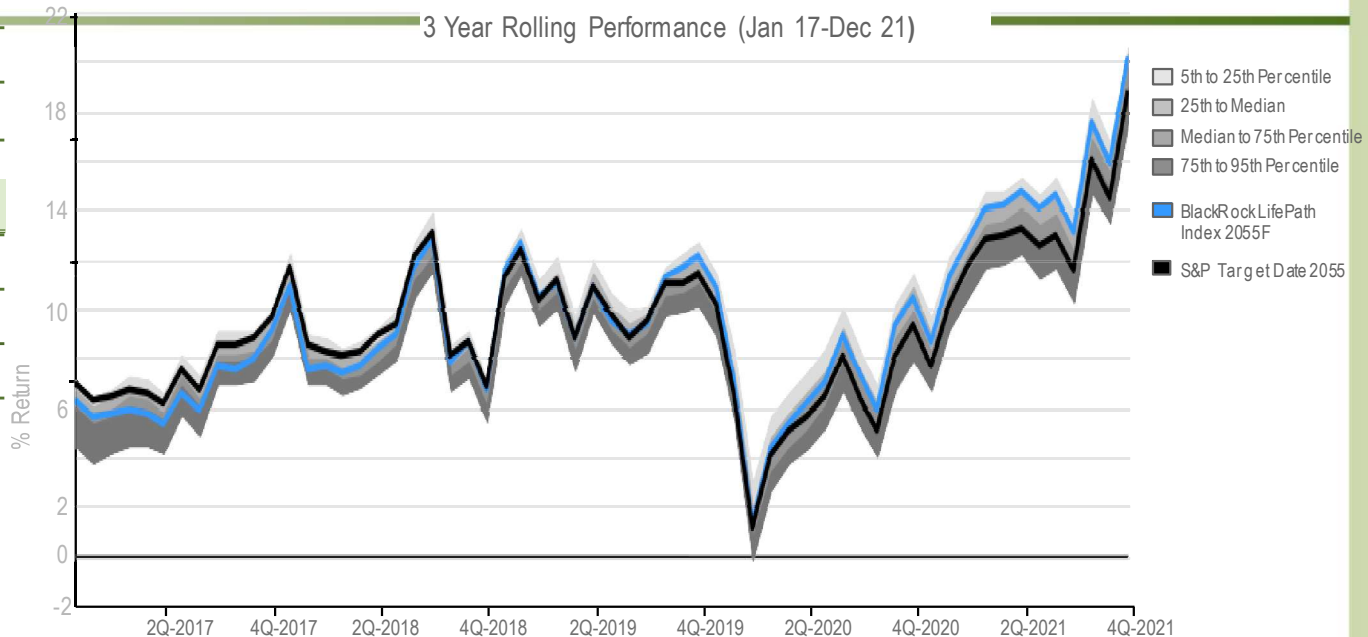


as of December 31, 2021

Program Assets	\$70.9 million
# of TexaSaver accounts	33,100
<b>Fund Overview</b>	
Investment type	Collective Trust
Investment strategy	Passive
Net TexaSaver expense	0.08%

<b>Fund Composition</b>	
US Stocks	24.3%
Bonds	54.2%
TIPS	5.8%
Non-US Stocks	12.6%
Other	3.1%

Reference: Exhibit A Fund Analysis, pg. 12  
BR LifePath Index 2055 NL F



	1Y	3Y	5Y	10Y
Fund / Peer Rank	18.92 / 15	20.24 / 29	14.08 / 25	12.11 / 36
Benchmark / Peer Rank	18.19 / 29	18.76 / 77	13.18 / 76	12.00 / 47
Excess to Benchmark	0.73	1.48	0.90	0.11

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# Target Date 2060 Fund

## BlackRock LifePath Index 2060 F Fund

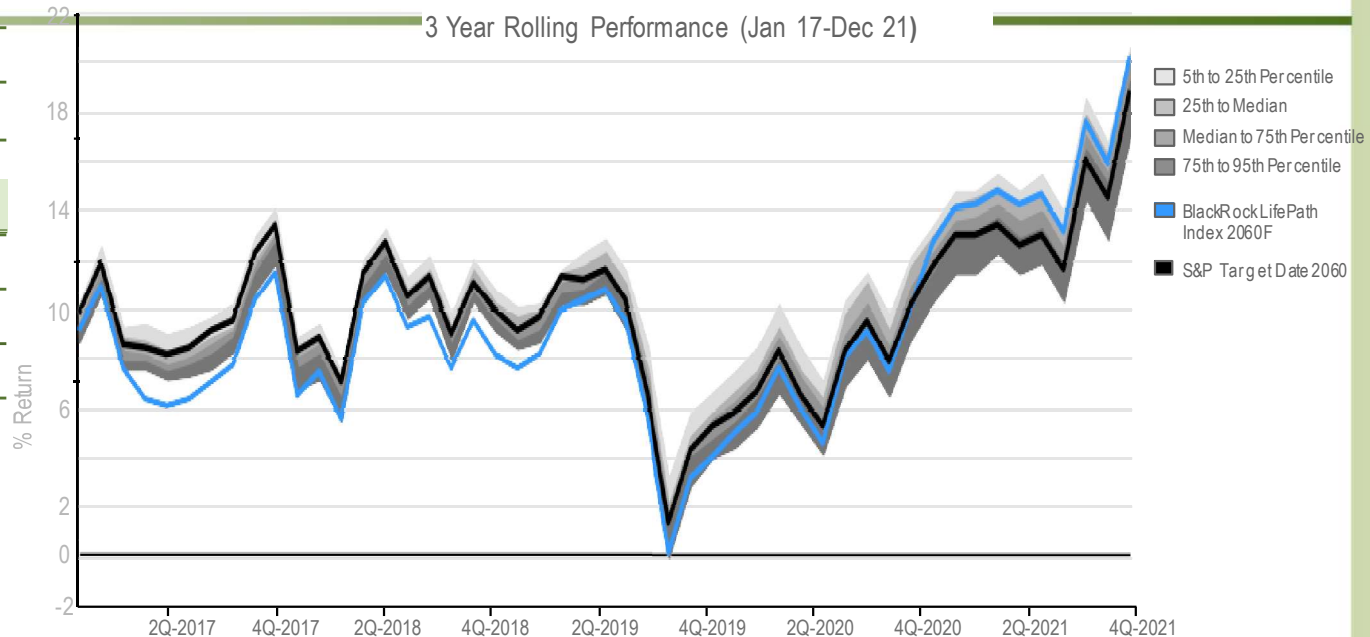


as of December 31, 2021

Program Assets	\$24.5 million
# of TexaSaver accounts	30,727
<b>Fund Overview</b>	
Investment type	Collective Trust
Investment strategy	Passive
Net TexaSaver expense	0.08%

<b>Fund Composition</b>	
US Stocks	24.3%
Bonds	54.2%
TIPS	5.8%
Non-US Stocks	12.6%
Other	3.1%

Reference: Exhibit A Fund Analysis, pg. 13  
BR LifePath Index 2060 F



	1Y	3Y	5Y	10Y
Fund / Peer Rank	18.90 / 18	20.24 / 33	13.23 / 78	
Benchmark / Peer Rank	18.05 / 42	18.84 / 78	13.28 / 77	12.05 / NA
Excess to Benchmark	0.85	1.40	- 0.05	



Questions?



## Public Agenda Item #12

### *\*Consideration of the Investment Compliance Annual Report*

March 9, 2022

Kurt Cressotti, Investment Compliance Officer

# ERS Investment Compliance Officer



Kurt Cressotti

Investment Compliance Officer

Juris Doctor

## **12 Years Compliance Experience**

- Fixed Income Asset Manager
- University Endowment
- Municipal Pension Plan

## **Professional Memberships**

- National Society of Compliance Professionals (NSCP)
- Austin and San Antonio Compliance Roundtable
- Council of Public Fund Compliance Officers

# Investment Compliance Program



## Overview

Prevent, detect and address issues of non-compliance.

Help ERS meet its fiduciary, regulatory and contractual obligations.

### Investment Compliance Program

Independent control function that monitors for compliance with applicable laws, regulations, ERS policies and investment guidelines.

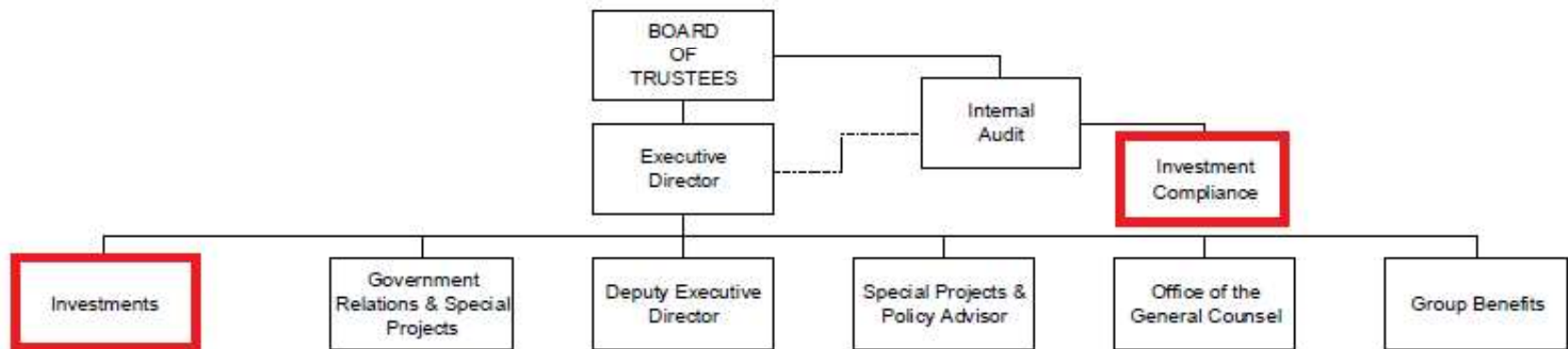
Align ERS' policies and procedures with best practices and high ethical conduct.

Educate, train and communicate the program to the organization and Board.

# ERS Organizational Chart

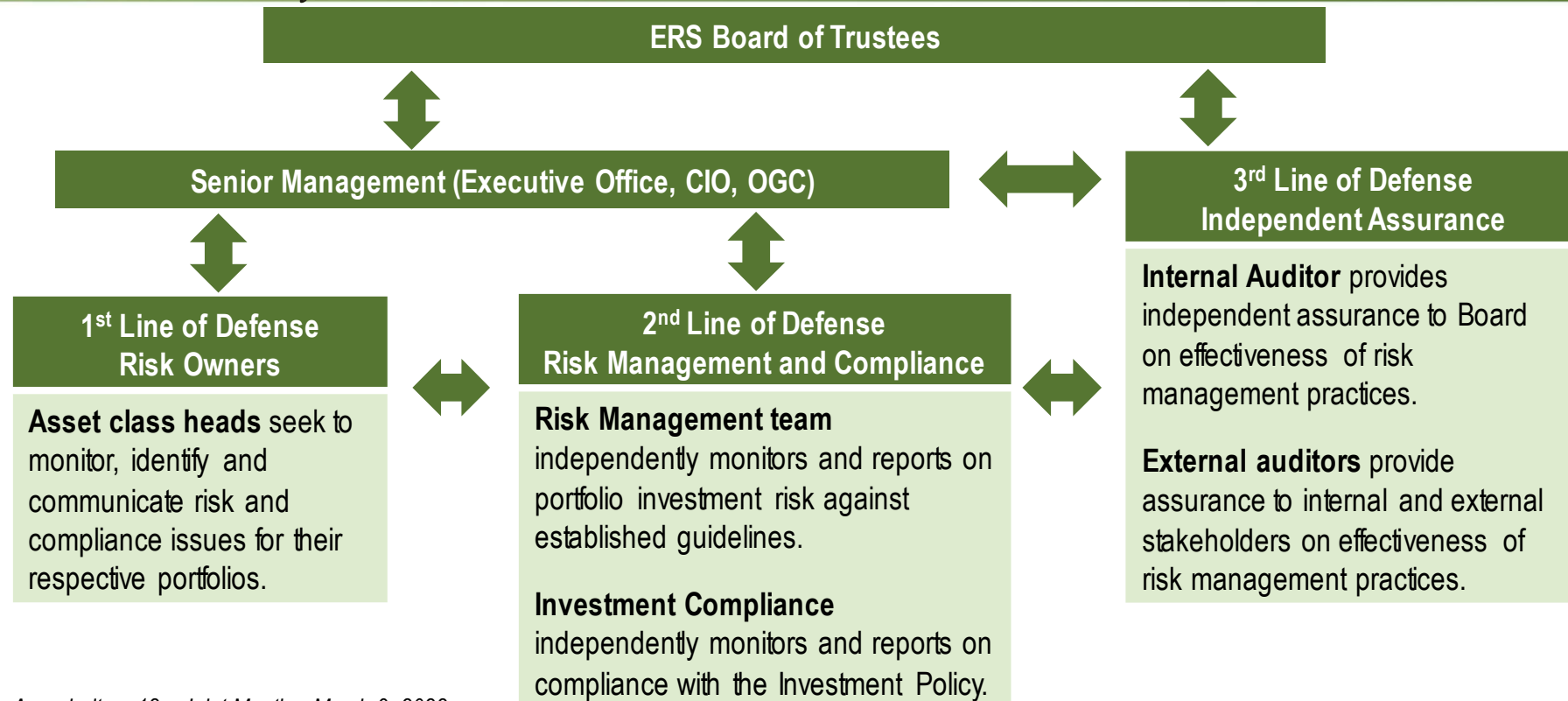


Employees Retirement System of Texas  
Agency Organizational Chart by Section  
January 2022



# Investment Compliance Program

## *Risk control framework*



# Investment Compliance Program

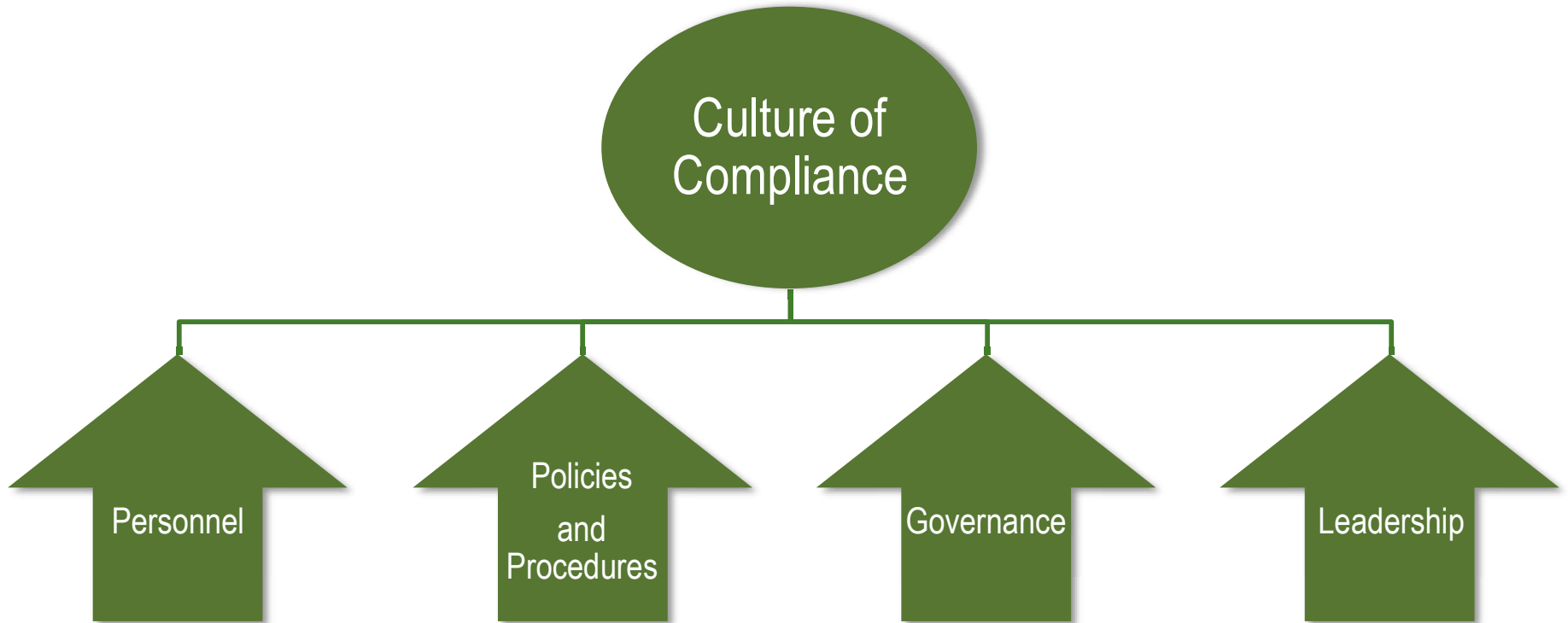
## *Functions and responsibilities*



- Report to and collaborate with Internal Audit
- Portfolio compliance monitoring with Investments, third-party vendors and custody bank
- Tracking error with Operations and Risk
- Securities lending with Fixed Income and third-party vendor
- Proxy voting with Operations, Public Equity and third-party vendors
- Code of Ethics and personal trading with Operations, Trading Desk and Investment Compliance Software
- Scrutinized investments with Office of the General Counsel and Government Relations



# Culture of Compliance



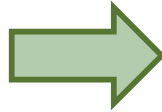


# Investment Compliance Program

## Process



### Prevent (Proactive)



- Keep with industry best practices and professional development.
- Update governing documents and policies and procedures as necessary.
- Provide compliance education and training, and answer questions.

### Detect (Active)



- Affirm compliance on quarterly and annual basis.
- Monitor investment compliance.
- Review policies and procedures for adequacy and effectiveness.

### Correct (Reactive)

- Remediate compliance breaches as they occur.
- Communicate candidly and transparently.
- Report compliance activities to senior leadership.

# Investment Compliance Program

## *CY21 metrics/scope*



### **Code of Ethics: Affirmations of Investment Compliance**

- 126 covered persons: 114 employees, 7 IAC members and 5 Board members
- Quarterly and annual affirmations for all covered employees
- Annual affirmations for all IAC and Board members

### **Code of Ethics: Personal Trade Monitoring**

- 93 of 114 covered employees with brokerage accounts
- 465 employee accounts required monitoring: 256 automated, 209 manual
- 40 of 93 covered employees engaged in personal trade activities
- 1,351 pre-clear requests submitted

### **Asset Class Investment Committee**

- 35 Asset Class Investment Committee meetings
- 28 additional Asset Class Investment Committee items via email

### **Other activities:**

- Daily portfolio compliance, tracking error and securities lending
- Monthly proxy voting
- Quarterly Board and IAC reporting

# Investment Compliance Program

## *Key 2021 accomplishments*



### **Code of Ethics**

- Implemented additional monitoring and review of employee personal trading program
- Worked to increase the efficiency of employee personal trading procedures

### **Investment Compliance Monitoring**

- Initiated new testing procedures and documentation processes for ACIC recommendations
- Enhanced compliance monitoring for Chinese Military Companies Sanctions and Japan's FEFTA restrictions

### **Development of Policies and Procedures**

- Revised Investment Policy Statement's Code of Ethics re: employee personal trade requirements
- Updated Investment Compliance procedures re: Code of Ethics Monitoring and Personal Trade Policy

# Investment Compliance Program

## *Key 2021 accomplishments (continued)*



### **Scrutinized Investments**

- U.S. Department of Treasury Chinese Military Companies Sanctions updated in January
- Texas Comptroller of Public Accounts Scrutinized Investments Lists issued in June, September and November
- U.S. Department of State and Texas Comptroller of Public Accounts Scrutinized Investments Annual Reports in December
- **Investment Compliance Software**
- Renewed existing investment compliance software contract through 2025

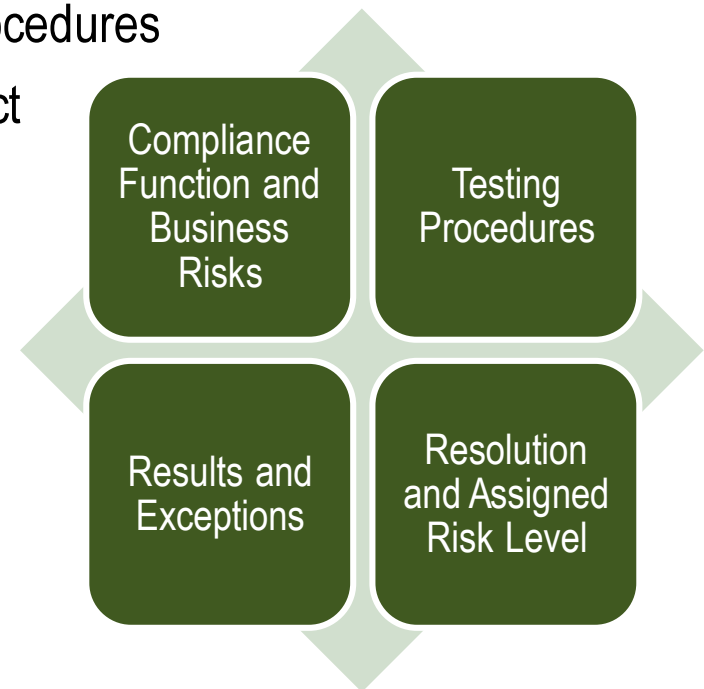
# Investment Compliance Program

## Reporting



**Summary Finding:** ERS' compliance policies and procedures are reasonably designed to prevent, detect and correct violations of applicable laws, regulations and policies.

- Quarterly Investment Compliance Reports
- Annual Investment Compliance Report
- No significant compliance risks reported
- Low and moderate compliance risks noted in the reports



# Investment Compliance Program

## *Action Plan*



- Implement renewed Investment Compliance software.
  - Add new modules for Gifts & Entertainment and Outside Business Activities.
  - Increase number of direct broker feeds for employee personal trade program.
- Update Scrutinized Investment Compliance Monitoring and Reporting standard operating procedures.
- Audit Investment Policy Statement and Portfolio Compliance monitoring procedures and update as needed.
- Utilize custody bank's available automated guideline compliance monitoring services where possible.
- Continue to build a robust and effective Investment Compliance Program that supports ERS' mission and helps the organization achieve its goals.

Questions?

\*Public Agenda Item #13

*Annual Consideration of Eligibility and Compliance of the  
Investment Advisory Committee*

March 9, 2022

Kurt Cressotti, Investment Compliance Officer



# Investment Advisory Committee

## *Requirements*



The Investment Advisory Committee (IAC) assists the Board in carrying out its fiduciary duties with regard to the investment of the Trust and related duties.

Pursuant to Texas Government Code §§ 815.5092 and 815.5093, the Board shall review the eligibility status of IAC members at least annually.

Criteria for the eligibility status include:

- Review of potential conflicts of interest between the IAC members and ERS
- Review of IAC Members' ability to fully discharge his or her duties
- Record of attendance for scheduled Board Meetings

# Eligibility and Compliance for CY22



## *IAC conflicts of interest*

- On January 4, Investment Compliance delivered to all IAC members its 2022 Investment Advisory Committee Compliance Attestation, which required all members to:
  - Certify receipt and compliance with ERS' Investment Policy Statement and its following addendums:
    - Insider Trading and Confidentiality Policy
    - CFA Institute Code of Ethics
  - Disclose outside business activities
- On February 1, Investment Compliance summarized IAC members' responses in a memo to ERS' Chief Investment Officer, General Counsel and Director of Internal Audit.
  - All IAC members certified receipt and compliance with ERS' Investment Policy Statement and addendums.
  - We determined that no disclosed outside business activities presented a conflict of interest between any IAC member and ERS.

# Eligibility and Compliance for CY22

## *IAC skills assessment*



	Term Ends	Investment Experience	Global Equity	Fixed Income	Private Equity	Real Estate	Hedge Funds	Infra-structure	Derivatives
<b><u>IAC Chair, Gene L. Needles, Jr.</u></b> Chairman, President and CEO Resolute Investment Managers	May 2023	41 years	X	X	X	X	X		X
<b><u>IAC Vice-Chair, Laurie Dotter</u></b> Retired from Transwestern Corporate Properties as President	May 2022	37 years				X		X	
<b><u>Bob Alley, CFA</u></b> Retired from AIM Advisors, Inc. as Chief Fixed Income Officer	Aug. 2024	45 years	X	X	X				

# Eligibility and Compliance for CY22

## *IAC skills assessment*



	Term Ends	Investment Experience	Global Equity	Fixed Income	Private Equity	Real Estate	Hedge Funds	Infra-structure	Derivatives
<b>Caroline Cooley</b> Managing Partner, Crestline Investors	Dec. 2022	36 years		X			X		X
<b>James Hille, CFA, CAIA</b> Retired from TCU Endowment as CIO	Aug. 2023	29 years	X	X	X	X	X		
<b>Milton Hixson, CPA, CFP</b> CEO, FMP Wealth Advisors	March 2023	48 years	X	X	X	X	X	X	
<b>Ken Mindell</b> Retired from Rosewood Management Corp as Sr. VP, Treasurer & Director of Investments	May 2022	40 years	X	X	X	X	X		X

# Eligibility and Compliance for CY22

## *IAC attendance*



Pursuant to Texas Government Code §§ 815.5092 and 815.5093, grounds for removal of an IAC member includes absence for more than half of the scheduled meetings of the IAC. All IAC members were in compliance with this requirement for CY21.

CY21 Joint Meetings of the Board and IAC (✓ = Attendance)				
Meeting Dates	Mar. 10	May 26	Aug. 25	Dec. 8
Bob Alley	✓	✓	✓	✓
Caroline Cooley	✓	✓	✓	✓
Laurie Dotter	✓	✓	✓	✓
Jim Hille	✓	✓	✓	✓
Milton Hixson	✓	✓	✓	✓
Ken Mindell	✓	✓	✓	✓
Gene Needles	✓	✓	✓	✓

Questions?

## Public Agenda Item #14

# *Consideration of Quarterly Report from Chief Investment Officer*

March 9, 2022

David T. Veal, CFA, CAIA, FRM

# Trust Performance

## Mission & Objectives



Invest prudently in a diversified portfolio at a reasonable cost to maximize the probability that promised benefits are provided.



Achieve results that are commensurate with the amount of active risk assumed



Obtain returns over rolling five-year periods in excess of adopted benchmarks



# Trust Performance

## Investment Strategy



Allocate  
thoughtfully to  
available assets



Select carefully  
managers that  
add value



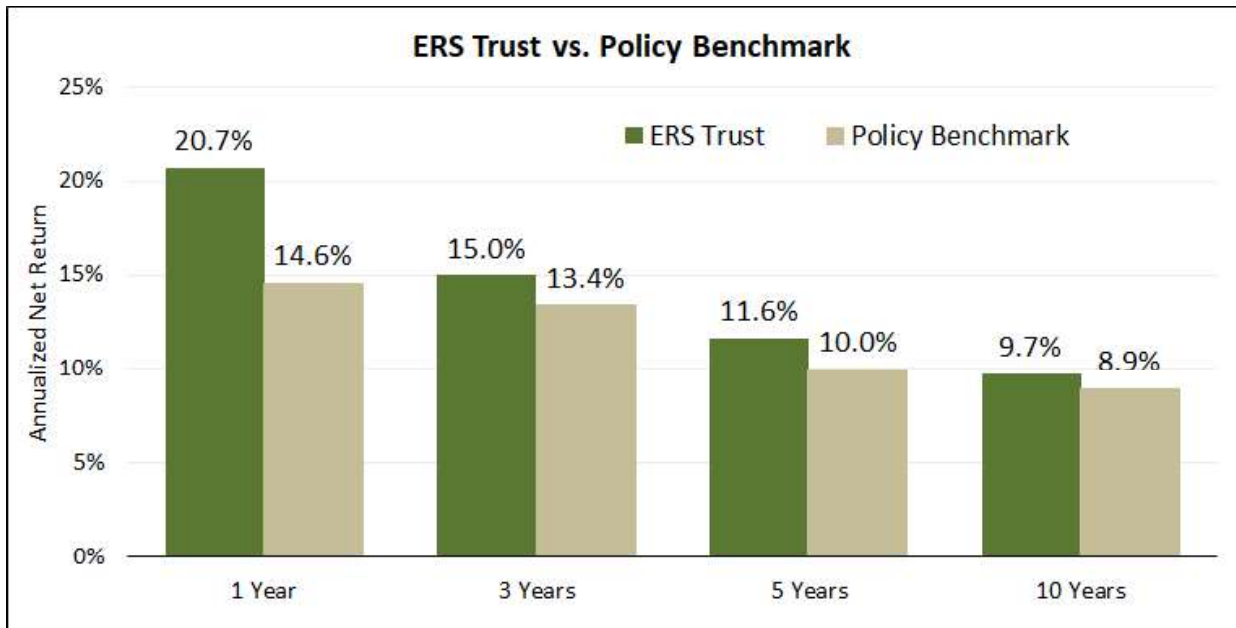
Diversify well  
to control risk as  
markets change

# ERS Trust Performance

## Relative Return



- Strong performance versus Policy Benchmark across all time horizons

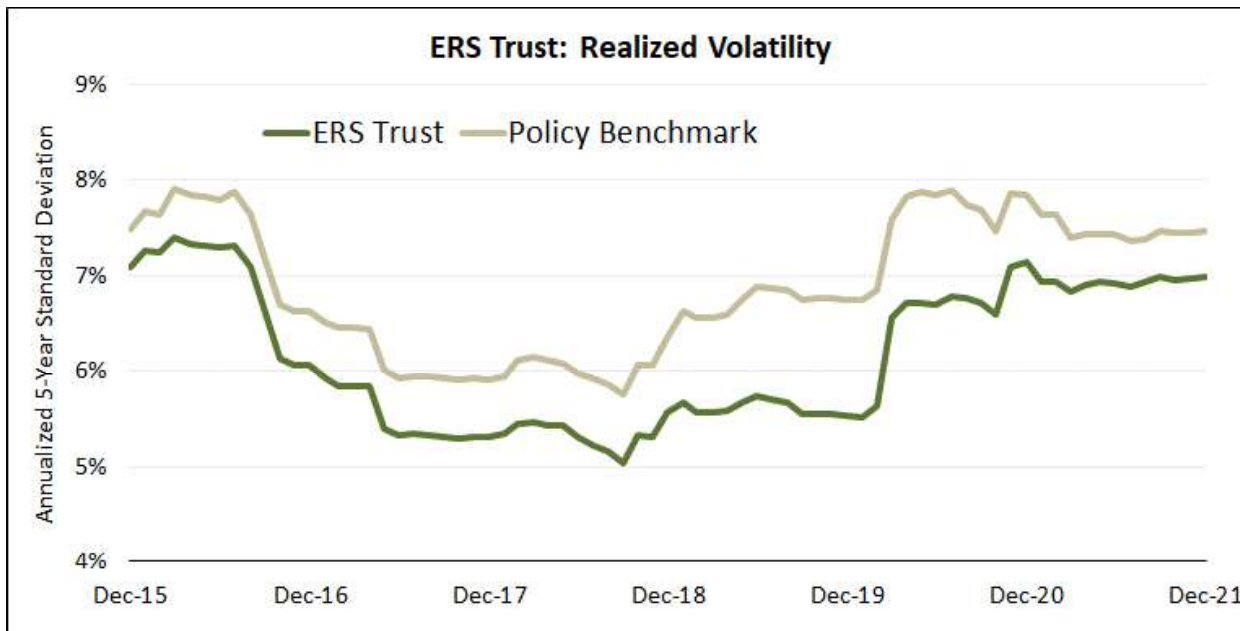


# ERS Trust Performance

## Absolute Risk



- Realized volatility levels flat at 7% and remain below that of the benchmark

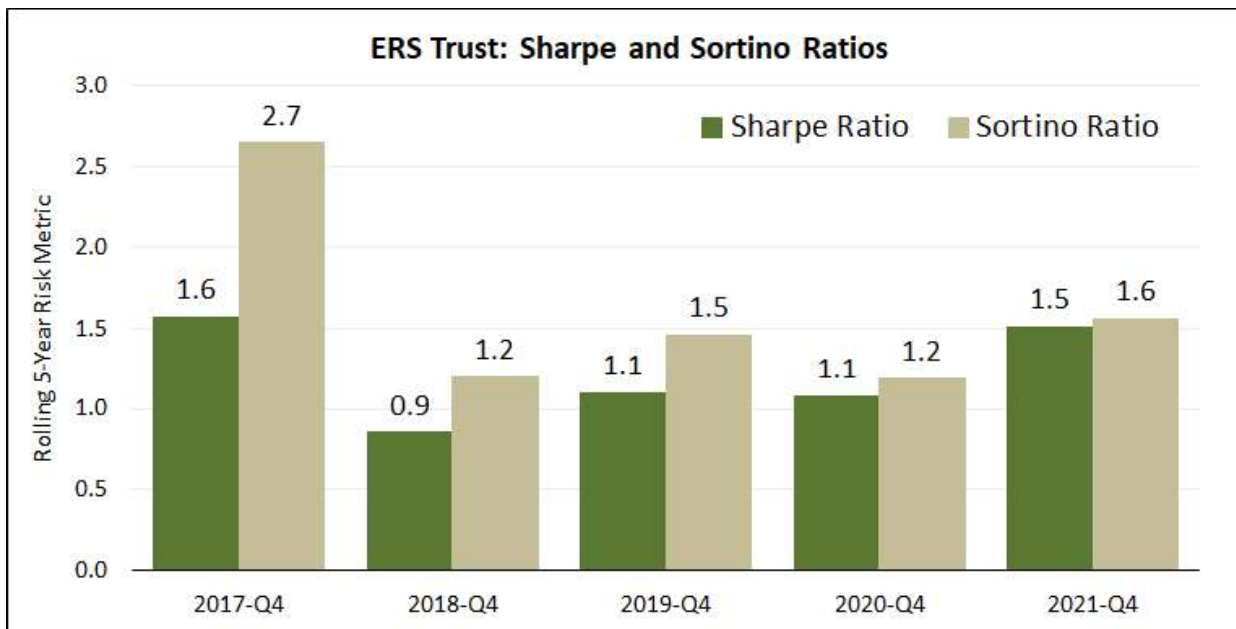


# ERS Trust Performance

## Risk-Adjusted Returns



- Good returns per unit of absolute risk and downside risk

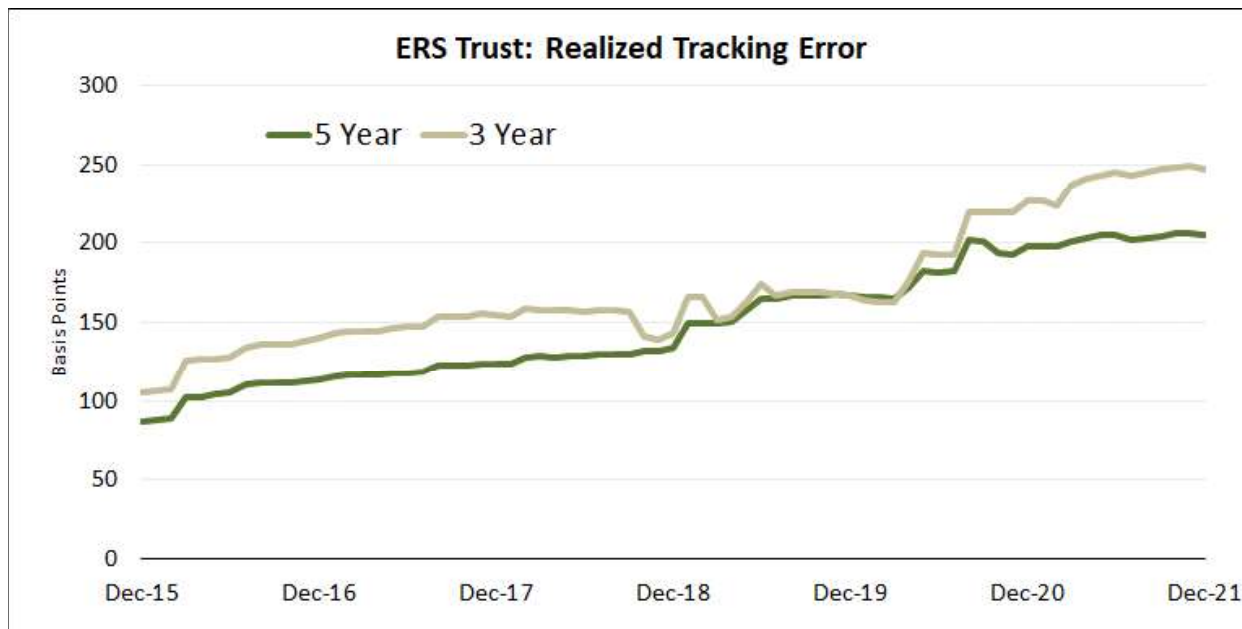


# ERS Trust Performance

## Relative Risk



- Tracking error trending upward over time as portfolio matures

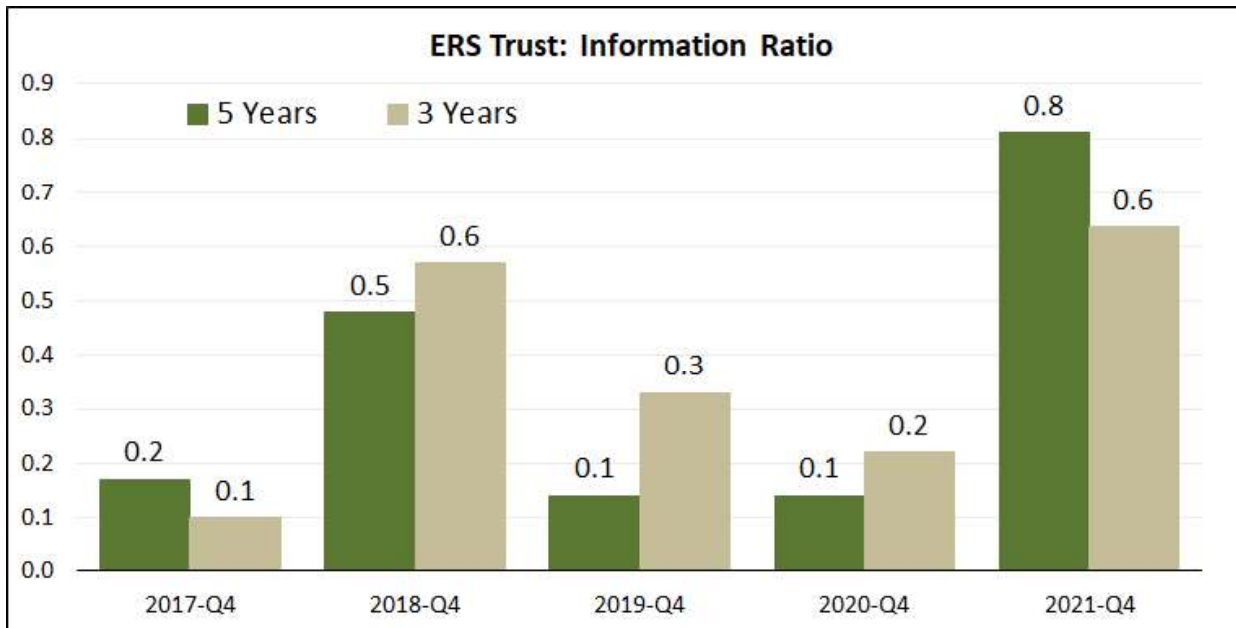


# ERS Trust Performance

## *Risk-Adjusted Returns*



- Returns per unit of relative risk now at their highest levels in several years

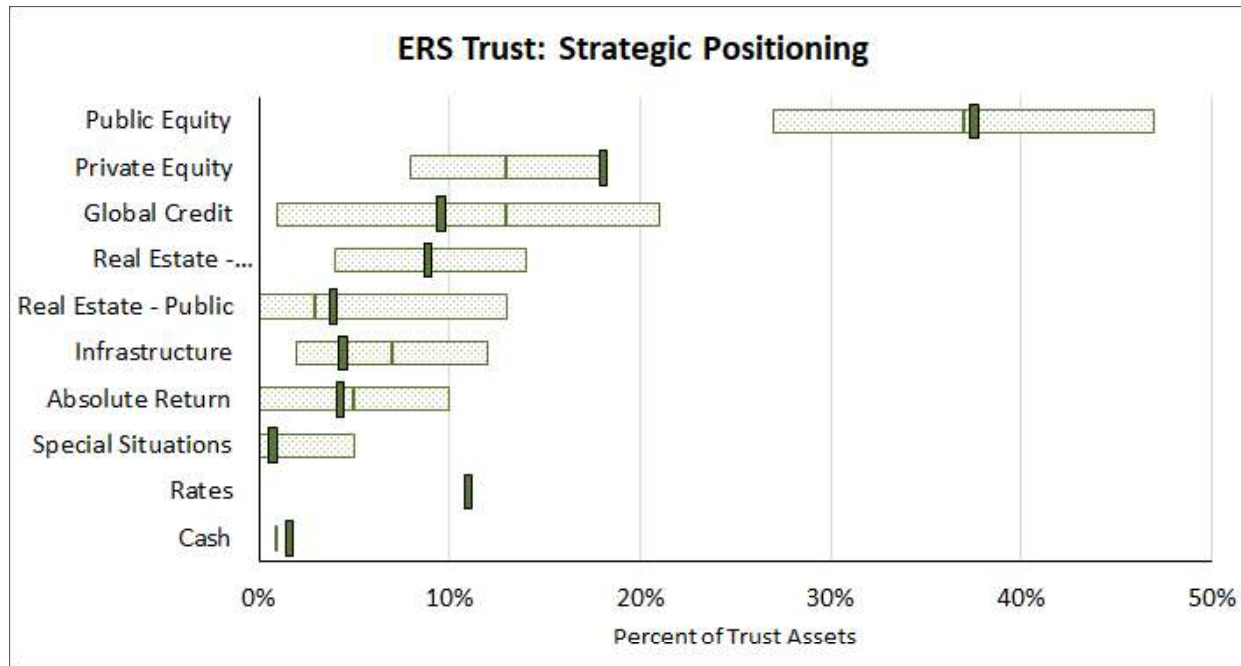


# ERS Trust Performance

## Asset Class Positioning



- Asset classes within ranges except private equity at 0.1% above 18% maximum

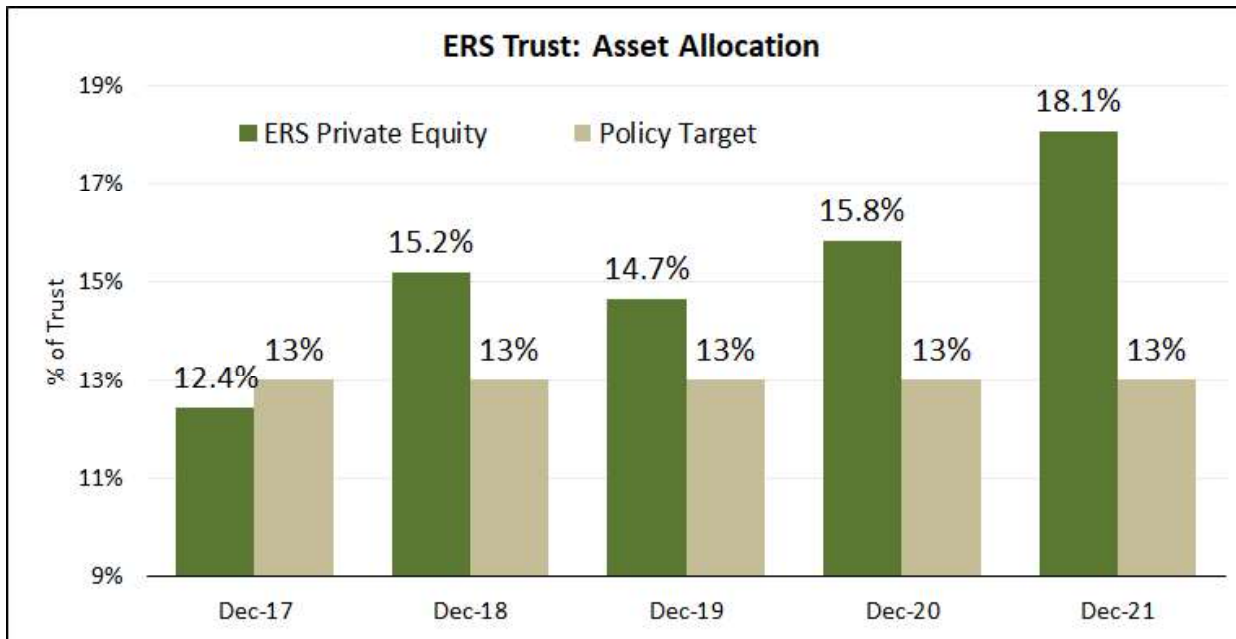


# ERS Trust Performance

## Asset Class Positioning



- Private equity consistently above target in recent years



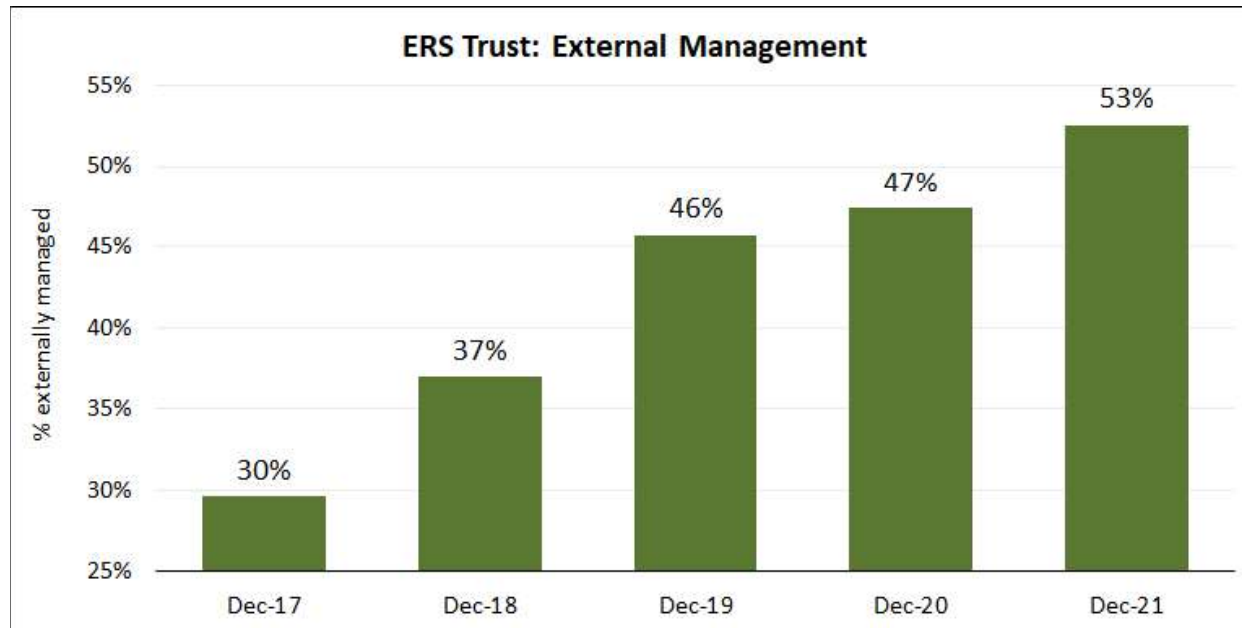


# ERS Trust Performance

## *Asset Mix: Internal vs. External*



- Mix shift toward external management has become the majority of the Trust

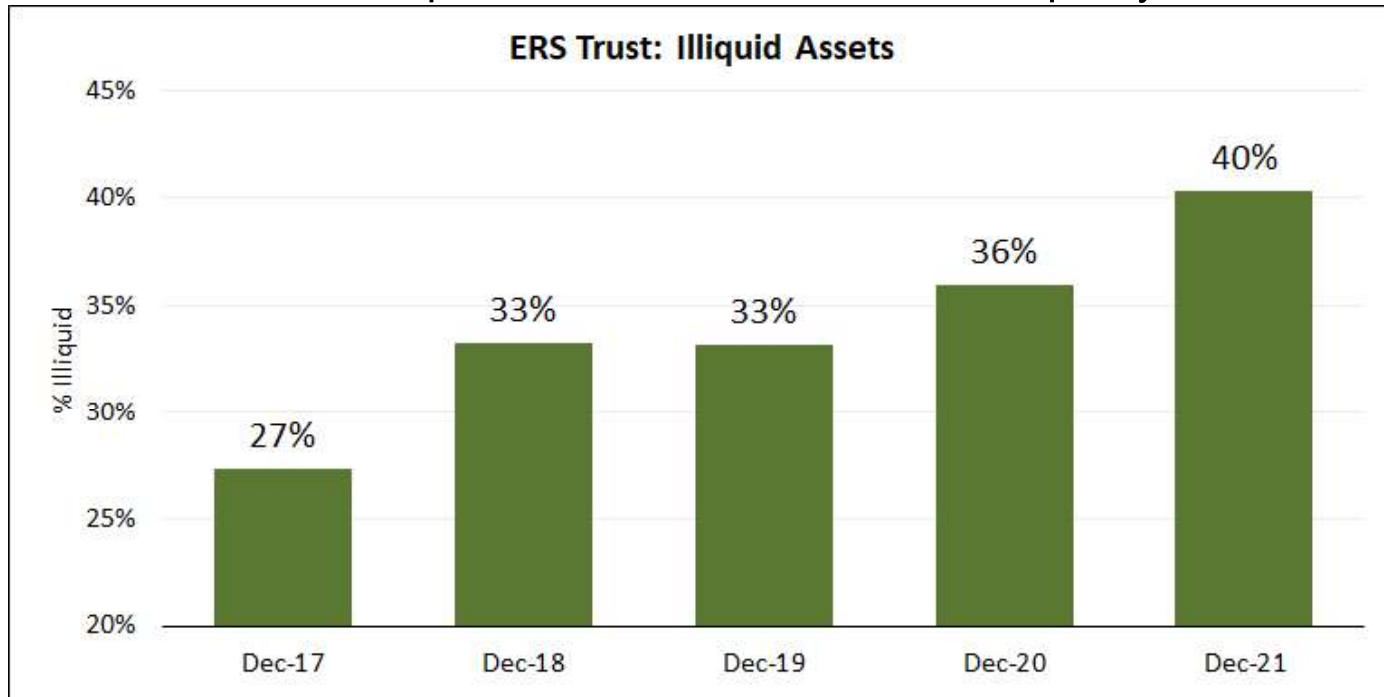


# ERS Trust Performance

## *Asset Mix: Liquid vs. Illiquid*



- Mix shift toward external and private markets has added to illiquidity

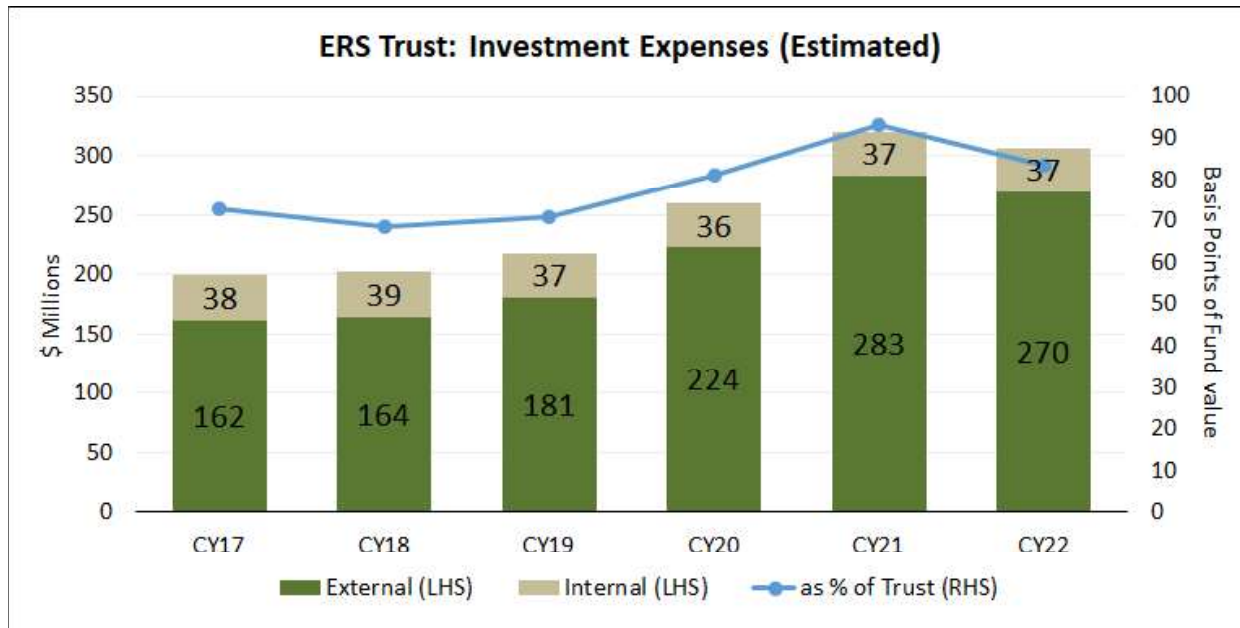


# ERS Trust Performance

## Investment Expenses



- Mix shift toward private markets has led to an increase in expense levels



# 2022 Priorities

## *Investments Division*



- Update key policies and procedures
- Address consultant & audit recommendations
- Revisit organizational structure
- Complete Asset/Liability Study

# Anthony Curtiss

## *Deputy CIO*



- Joined ERS in 2012 as Senior Analyst
- Served as Director of Hedge Funds since 2016
- Undergraduate degree in accounting from UTSA
- Master's degree in finance from University of Nebraska
- CFA charter holder since 2010
- Senior analyst at Salient Partners from 2005 to 2011
- External Auditor for KPMG from 2001 to 2003



# 2022 Asset/Liability Study

## Strategic Purpose



### Goal of an A/L Study

Examine how a pension system's assets and liabilities are expected to interact over time in determining its long-term financial outlook



# 2022 Asset/Liability Study

## Key Steps



### **GATHER**

projections of key long-term trends, including:

- contribution levels
- asset growth
- benefit payments
- pension liabilities



### **MODEL**

the expected progress of assets, liabilities and cash flows over time using static and dynamic assumptions



### **ASSESS**

the ability of the current Strategic Asset Allocation (SAA) parameters to balance long-term growth with short-term needs

# 2022 Asset/Liability Study

## *Timeline for NEPC*



Time Period	Activity
January-March	Receives background information from ERS
April	Conducts initial analysis of information
May	Provides draft findings to the ERS Board
August	Delivers final report to the ERS Board



Questions?

## \*Public Agenda Item #15

### *\*Consideration of Quarterly Review of Investment Performance and Risk Update*

March 9, 2022

David T. Veal, Chief Investment Officer  
Carlos Chujoy, Director of Risk Management and Applied Research  
Sam Austin, Partner, NEPC



# QUARTERLY PERFORMANCE REPORT

EMPLOYEES RETIREMENT SYSTEM OF TEXAS

MARCH 9, 2022

Sam Austin, Partner  
Michael Malchenko, Sr. Client Specialist



The background of the slide is a dark blue field filled with light trails and bokeh. The light trails are long, curved streaks of light in shades of blue, white, and yellow, suggesting motion or data flow. The bokeh consists of out-of-focus circular light spots in various colors, including blue, white, yellow, and orange.

## TABLE OF CONTENTS

- Executive Summary
- Total Fund Performance Summary



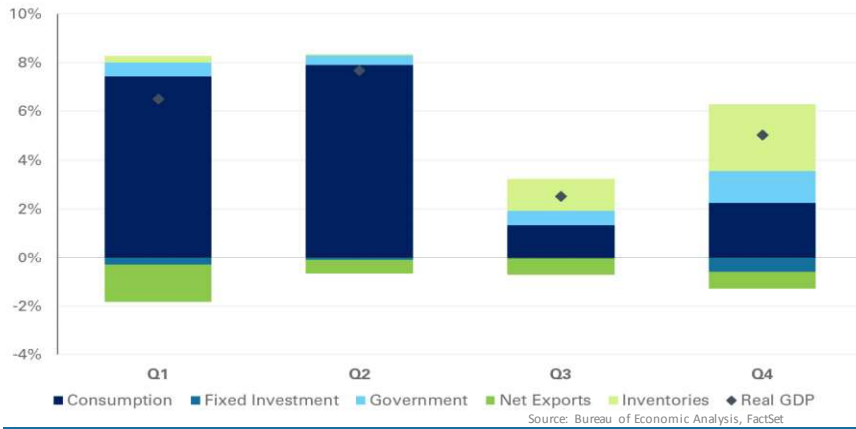


# EXECUTIVE SUMMARY

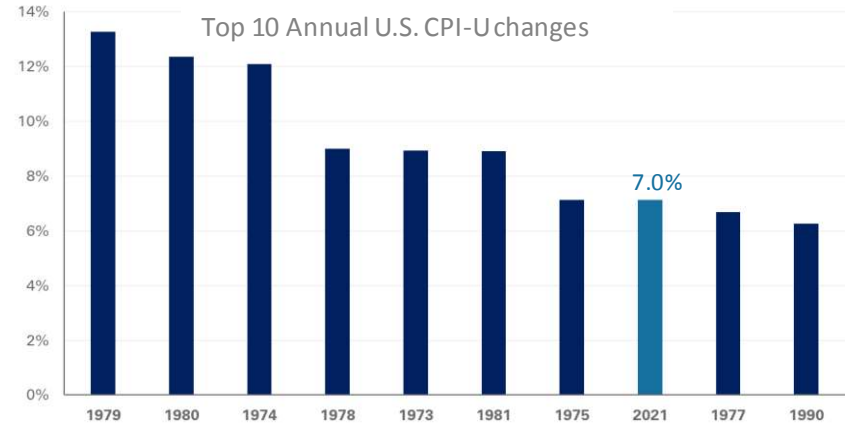


# ECONOMIC ENVIRONMENT

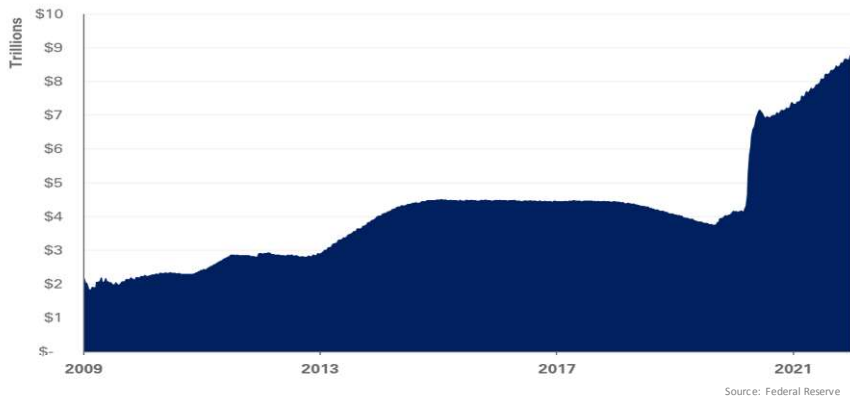
## US Real GDP Grows at +6.9% Annual Rate



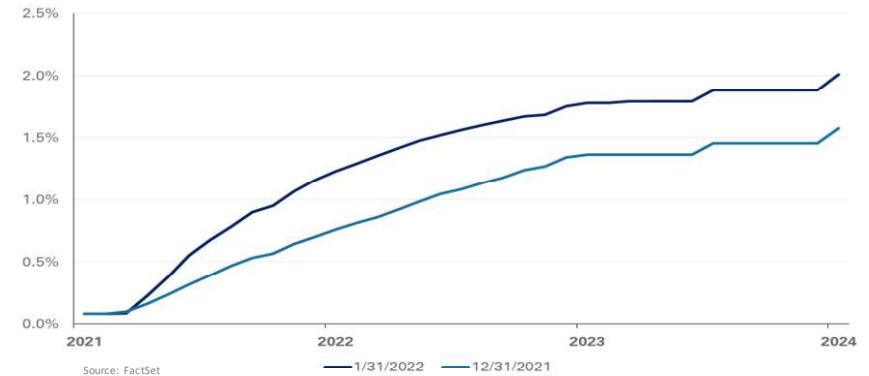
## US Inflation at Highest Level Since 1981



## Fed Tapering Will Slow Balance Sheet Growth



## Multiple Fed Rate Hikes Priced In For 2022



# MARKET ENVIRONMENT

		Qtr.	1 Yr.	3 Yr.	5 Yr.	10 Yr.
<b>World Equity Benchmarks</b>						
MSCI ACWI IMI (Net)	World with Small Cap	6.10%	18.22%	20.20%	14.12%	11.84%
<b>Domestic Equity Benchmarks</b>						
Russell 3000	Domestic All Cap	9.28%	25.66%	25.79%	17.97%	16.30%
S&P 500	Large Core	11.03%	28.70%	26.07%	18.47%	16.55%
Russell 1000	Large Core	9.78%	26.45%	26.21%	18.43%	16.54%
Russell 1000 Growth	Large Growth	11.64%	27.60%	34.08%	25.32%	19.79%
Russell 1000 Value	Large Value	7.77%	25.16%	17.64%	11.16%	12.97%
Russell 2000	Small Core	2.14%	14.82%	20.02%	12.02%	13.23%
<b>International Equity Benchmarks</b>						
MSCI ACWI Ex USA	World ex-US	1.82%	7.82%	13.18%	9.61%	7.28%
MSCI EAFE Net (USD)	Int'l Developed	2.69%	11.26%	13.54%	9.55%	8.03%
MSCI EAFE Small Cap	Small Cap Int'l	0.07%	10.10%	15.62%	11.04%	10.80%
MSCI Emerging Markets	Emerging Equity	-1.31%	-2.54%	10.94%	9.87%	5.49%
<b>Domestic Fixed Income Benchmarks</b>						
Barclays Aggregate	Core Bonds	0.01%	-1.54%	4.79%	3.57%	2.90%
Barclays US High Yield	High Yield	0.71%	5.28%	8.83%	6.30%	6.83%
CSFB Levered Loans	Bank Loans	0.71%	5.40%	5.43%	4.32%	4.83%
BofA ML US 3-Month T-Bill	Cash	0.01%	0.05%	0.99%	1.14%	0.63%
Barclays US TIPS 1-10 Yr	Inflation	1.54%	5.68%	6.97%	4.46%	2.57%
<b>Alternative Benchmarks</b>						
Bloomberg Commodity Index	Commodities	-1.56%	27.11%	9.86%	3.66%	-2.85%
HFRI Fund of Funds Composite Index	Fund of Hedge Funds	0.25%	5.99%	8.40%	5.67%	4.54%
Cambridge PE Lagged*	Private Equity	5.73%	46.76%	21.33%	19.78%	16.40%
NCREIF ODCE Net Lagged*	Real Estate	6.41%	13.65%	6.13%	6.56%	8.92%
Wilshire REIT Index	REIT	17.14%	46.19%	19.19%	10.92%	11.47%
CPI + 2%	Inflation/Real Assets	2.71%	9.25%	5.60%	4.98%	4.17%



# ERS TRUST DASHBOARD

	CYTD	Rank	FY 2021	Rank
Trust Performance	20.7%	5	3.8%	11
Policy Benchmark	14.6%	53	2.7%	39
Excess Return	6.1%		1.1%	
3 Yr Tracking Error	2.47%			
5 Yr Sharpe Ratio	1.51	8		
5 Yr Sortino Ratio	1.56	13		

## Largest Contributors (Quarter)

Private Equity (+0.3%) and Total Global Credit (+0.2%) contributed positively versus the policy benchmark.

## Largest Detractors (Quarter)

Global Public Equity (-0.2%) and Private Real Estate (-0.1%) contributed negatively versus the policy benchmark.

Profile
<b>Market Value at December 31, 2021</b>
\$36.20 Billion
<b>Actuarial Accrued Liability August 31, 2021</b>
\$44.2 Billion
<b>Actuarial Value of Assets August 31, 2021</b>
\$30.1 Billion
<b>ERS Trust Funded Ratio August 31, 2021</b>
68.0%
<b>Actuarial Assumed Rate of Return</b>
7.00%
<b>Retirees and Beneficiaries August 31, 2021</b>
120,294
<b>Retirement Payments Year Ended August 31, 2021</b>
\$2.79 Billion

## Management



## Allocation



## Liquidity







# PERFORMANCE SUMMARY

PROPRIETARY & CONFIDENTIAL

## TOTAL TRUST PERFORMANCE DETAIL (NET OF FEES)

	Market Value	Fiscal YTD	Rank	3 Mo	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
<b>Total Trust</b>	<b>\$36,195,726,325</b>	<b>3.8%</b>	<b>11</b>	<b>4.7%</b>	<b>19</b>	<b>20.7%</b>	<b>5</b>	<b>15.0%</b>	<b>42</b>	<b>11.6%</b>	<b>22</b>	<b>9.7%</b>	<b>45</b>
<i>Total Trust Policy Index</i>		2.7%	39	4.4%	33	14.6%	53	13.4%	87	10.0%	79	8.9%	77
<i>Long Term Public Index</i>		1.3%	86	4.9%	14	13.7%	68	17.0%	8	12.0%	14	9.9%	33
InvMetrics Public DB > \$1B Net Median		2.3%		4.0%		14.9%		14.7%		10.9%		9.7%	

- **One-year ended December 31, 2021, the Trust outperformed the policy benchmark by 6.1% and ranked in the 5<sup>th</sup> percentile among its peers.**
- **The Trust's assets increased from \$30.87 billion to \$36.20 billion in the calendar year, which includes a \$6.29 billion investment gain in the calendar year and \$1.65 billion investment gain in the fourth calendar quarter of 2021.**



Note: Long Term Public Index is comprised of 79% MSCI ACWI IMI and 21% Bloomberg Intermediate Treasury Index. Index definitions can be found in the appendix.

## TOTAL TRUST PERFORMANCE DETAIL (NET OF FEES)

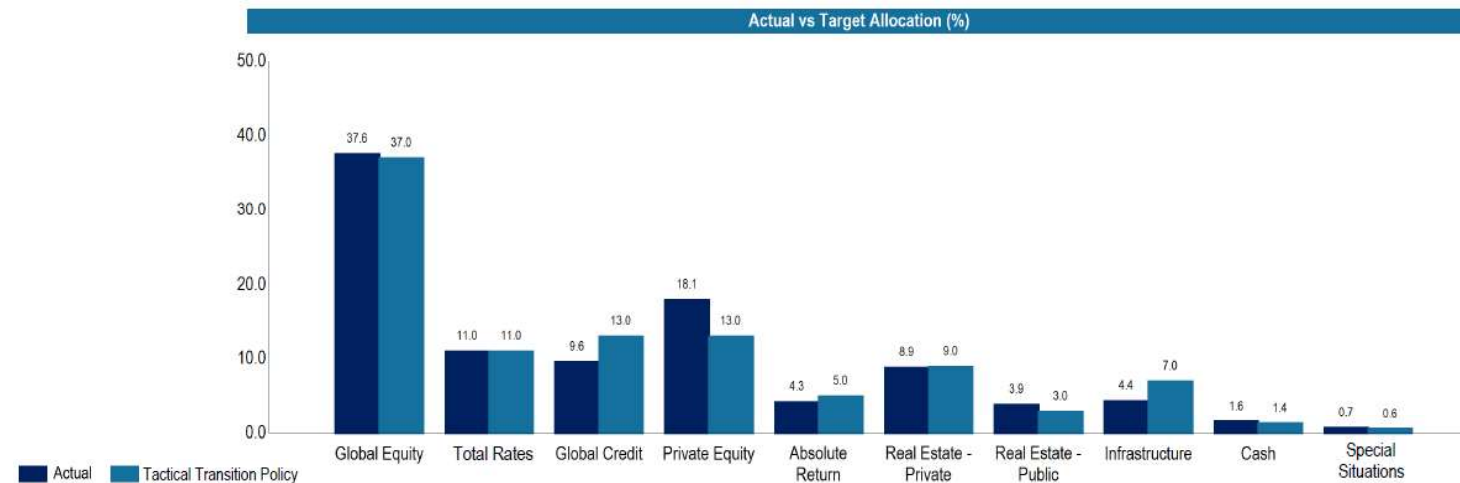
3 Years Ending December 31, 2021								
	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Sortino RatioRF	Rank
Total Trust	14.96%	42	7.90%	16	1.79	7	1.77	16
Total Trust Policy Index	13.39%	87	8.26%	20	1.52	32	1.68	23
InvMetrics Public DB > \$1B Net Median	14.69%		10.09%		1.35		1.44	
5 Years Ending December 31, 2021								
	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Sortino RatioRF	Rank
Total Trust	11.63%	22	6.99%	17	1.51	8	1.56	13
Total Trust Policy Index	9.97%	79	7.47%	24	1.19	42	1.30	28
InvMetrics Public DB > \$1B Net Median	10.94%		8.80%		1.10		1.15	

- **Three-year period ended December 31, 2021, the return of 15.0% outperformed the benchmark by 1.6% and ranked in the 42<sup>nd</sup> percentile. On a risk-adjusted basis, the Sharpe and Sortino Ratios outperformed the benchmark, ranking in the 7<sup>th</sup> and 16<sup>th</sup> percentiles, respectively.**
- **Five-year period ended December 31, 2021, the return of 11.6% outperformed the policy benchmark by 1.6% and ranked in the top quartile. On a risk-adjusted basis, the Fund's Sharpe and Sortino Ratios indicate that active management benefitted the Plan.**
- **The three-year and five-year Fund returns have outperformed the actuarial rate of return.**



Note: Long Term Public Index is comprised of 79% MSCI ACWI IMI and 21% Bloomberg Intermediate Treasury Index. Index definitions can be found in the appendix.

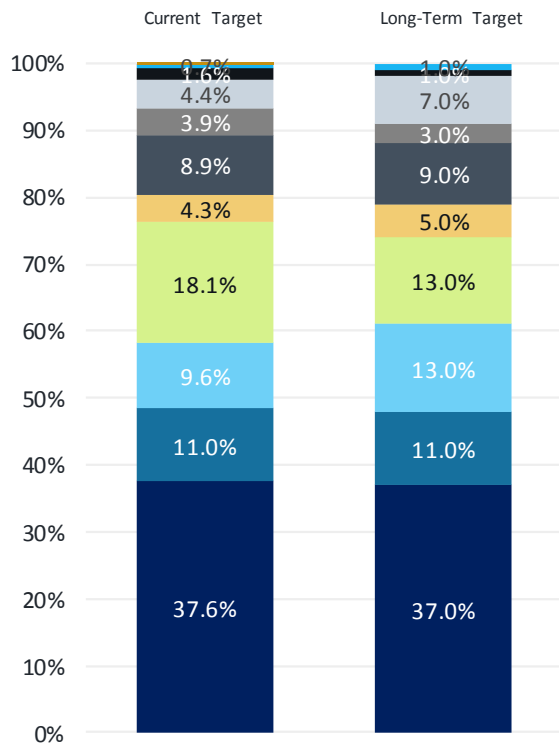
# TOTAL TRUST ASSET GROWTH SUMMARY



Summary of Cash Flows					
	Last Three Months	Fiscal Year-To-Date	One Year	Three Years	Five Years
Beginning Market Value	\$34,948,286,762	\$34,909,583,238	\$30,865,543,933	\$26,873,073,745	\$25,538,214,636
Contributions	\$3,715,349,972	\$5,532,702,061	\$19,730,151,902	\$47,996,918,080	\$65,626,837,724
Withdrawals	-\$4,114,203,478	-\$5,562,014,979	-\$20,693,905,898	-\$51,569,626,907	-\$71,464,813,116
Net Cash Flow	-\$398,848,272	-\$29,307,684	-\$963,748,763	-\$3,566,226,854	-\$5,825,850,610
Net Investment Change	\$1,646,287,835	\$1,315,450,771	\$6,293,931,154	\$12,888,879,433	\$16,483,362,298
Ending Market Value	\$36,195,726,325	\$36,195,726,325	\$36,195,726,325	\$36,195,726,325	\$36,195,726,325



# TRUST ASSET ALLOCATION VS. POLICY TARGETS

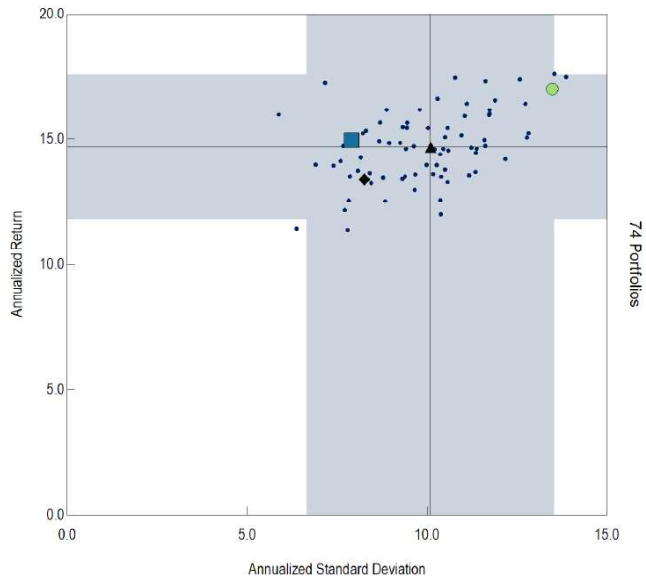


Fund Positioning on December 31, 2021					
		Current	Current	Long-Term Target	Long-Term Target Range
Public Equity	\$	13,594,206,963	37.6%	37.0%	27.0% - 47.0%
Total Rates	\$	3,979,337,285	11.0%	11.0%	--
Global Credit	\$	3,468,853,035	9.6%	13.0%	1.0% - 21.0%
Private Equity	\$	6,536,527,418	18.1%	13.0%	8.0% - 18.0%
Absolute Return	\$	1,546,877,936	4.3%	5.0%	0.0% - 10.0%
Real Estate - Private	\$	3,208,268,658	8.9%	9.0%	4.0% - 14.0%
Real Estate - Public	\$	1,410,457,318	3.9%	3.0%	0.0% - 13.0%
Infrastructure	\$	1,602,738,199	4.4%	7.0%	2.0% - 12.0%
Cash	\$	582,356,346	1.6%	1.0%	--
Special Situations	\$	266,103,166	0.7%	1.0%	0.0% - 5.0%
<b>Total</b>	<b>\$</b>	<b>36,195,726,325</b>	<b>100%</b>	<b>100.0%</b>	



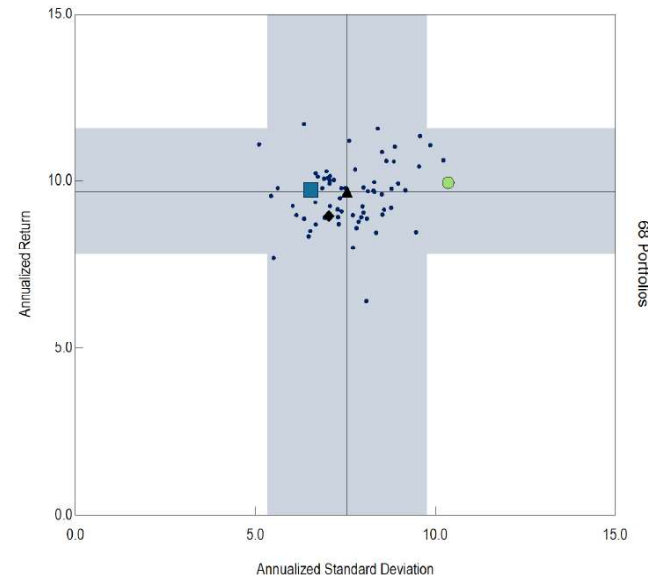
# TOTAL TRUST RISK/RETURN

3 Years Ending December 31, 2021



- Total Trust
- ◆ Total Trust Policy Index
- Long Term Public Index
- ▲ Universe Median
- 95% Confidence Interval
- InvMetrics Public DB > \$1B Net

10 Years Ending December 31, 2021



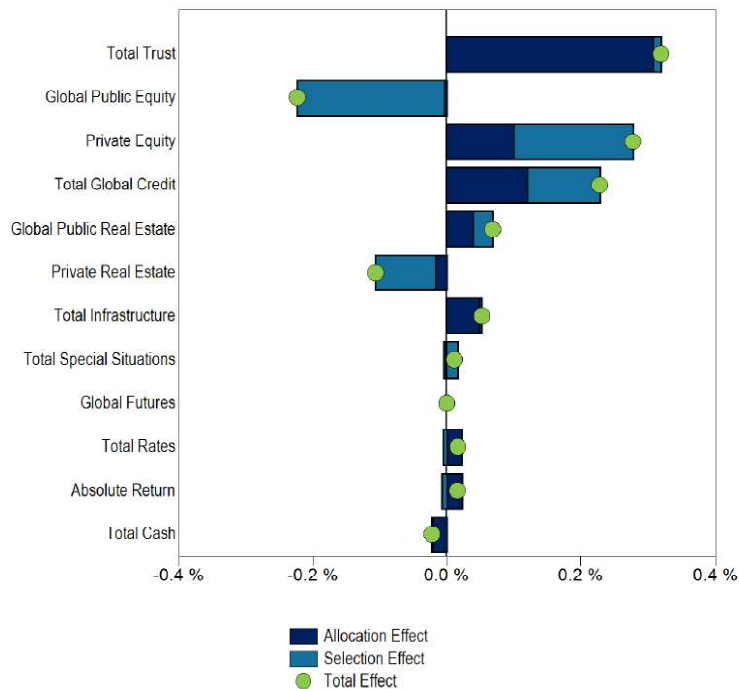
- Total Trust
- ◆ Total Trust Policy Index
- Long Term Public Index
- ▲ Universe Median
- 95% Confidence Interval
- InvMetrics Public DB > \$1B Net

Note: Long Term Public Index is comprised of 79% MSCI ACWI IMI and 21% Bloomberg Intermediate Treasury Index. Index definitions can be found in the appendix.



# TOTAL TRUST ATTRIBUTION ANALYSIS

**Attribution Effects**  
3 Months Ending December 31, 2021



Attribution Summary						
3 Months Ending December 31, 2021						
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Global Public Equity	5.6%	6.2%	-0.5%	-0.2%	0.0%	-0.2%
Private Equity	8.2%	7.2%	1.0%	0.2%	0.1%	0.3%
Total Global Credit	1.8%	0.7%	1.1%	0.1%	0.1%	0.2%
Global Public Real Estate	11.1%	10.3%	0.8%	0.0%	0.0%	0.1%
Private Real Estate	5.4%	6.4%	-1.0%	-0.1%	0.0%	-0.1%
Total Infrastructure	2.7%	2.6%	0.1%	0.0%	0.0%	0.1%
Total Special Situations	2.1%	-0.5%	2.6%	0.0%	0.0%	0.0%
Global Futures	--	--	--	--	--	--
Total Rates	-0.6%	-0.6%	0.0%	0.0%	0.0%	0.0%
Absolute Return	0.7%	0.9%	-0.2%	0.0%	0.0%	0.0%
Total Cash	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total</b>	<b>4.7%</b>	<b>4.4%</b>	<b>0.3%</b>	<b>0.0%</b>	<b>0.3%</b>	<b>0.3%</b>

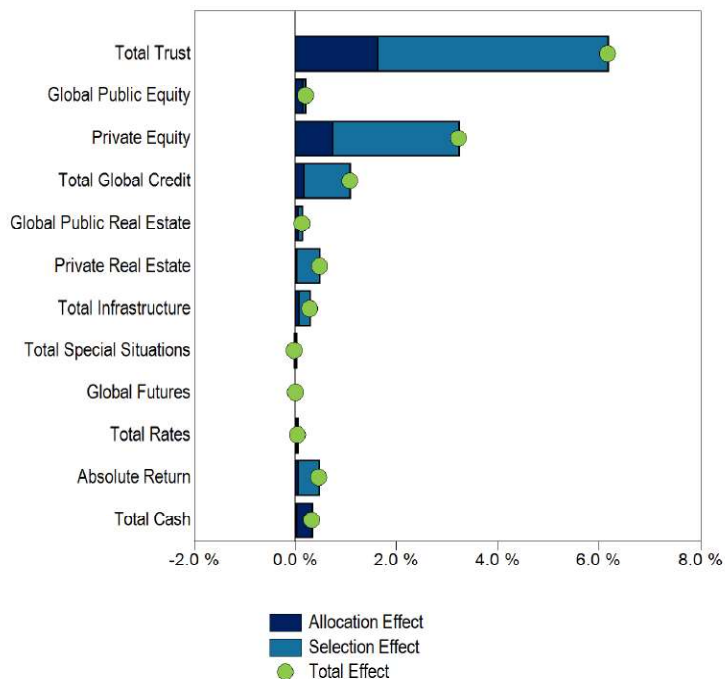
Note: Not all assets are valued through December 31, 2021 within Private Equity, Total Global Credit, Private Real Estate, Total Infrastructure and Absolute Return.

\*Total Fund Attribution Analysis uses policy weights.



# TOTAL TRUST ATTRIBUTION ANALYSIS

Attribution Effects  
1 Year Ending December 31, 2021



Attribution Summary  
1 Year Ending December 31, 2021

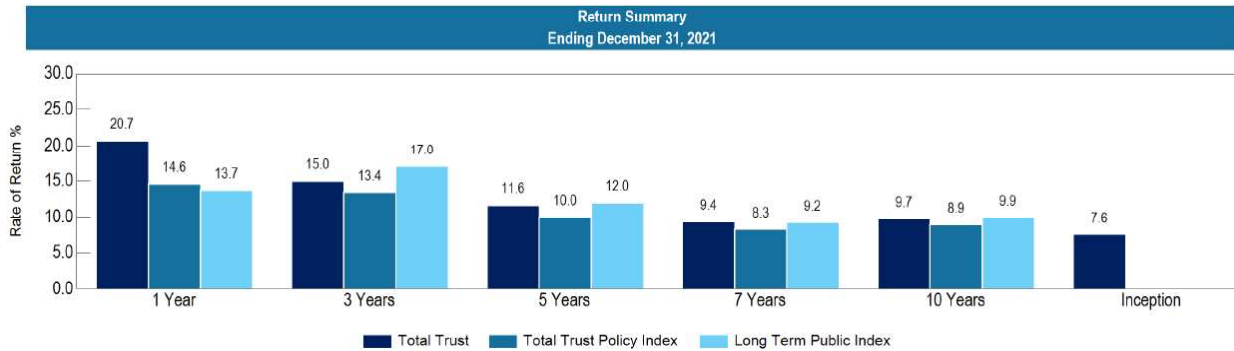
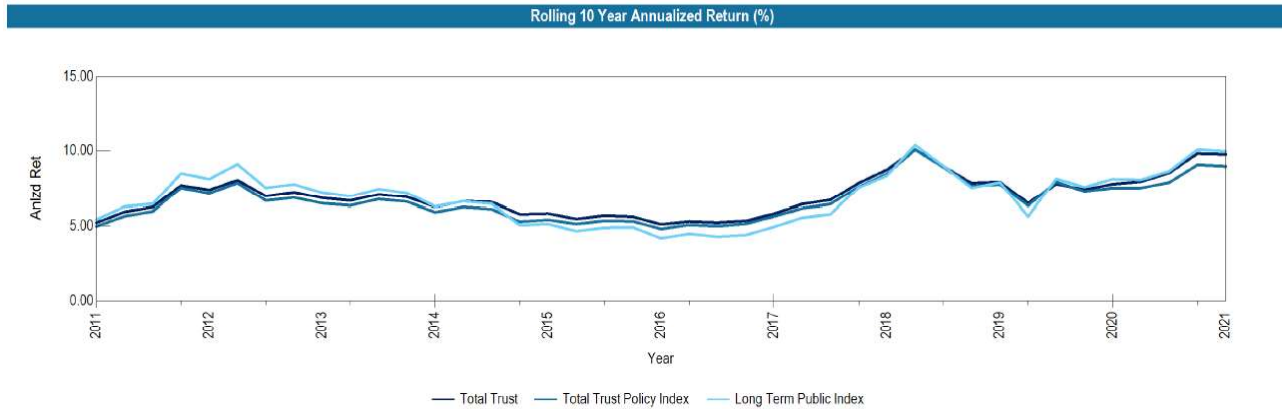
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Global Public Equity	18.6%	18.5%	0.1%	0.0%	0.1%	0.2%
Private Equity	53.0%	35.0%	18.0%	2.5%	0.7%	3.2%
Total Global Credit	13.9%	5.3%	8.7%	0.9%	0.2%	1.1%
Global Public Real Estate	29.1%	26.9%	2.2%	0.1%	0.1%	0.1%
Private Real Estate	19.4%	13.6%	5.8%	0.5%	0.0%	0.5%
Total Infrastructure	16.4%	11.1%	5.4%	0.2%	0.1%	0.3%
Total Special Situations	6.8%	10.1%	-3.3%	0.0%	0.0%	0.0%
Global Futures	--	--	--	--	--	--
Total Rates	-1.8%	-1.7%	0.0%	0.0%	0.0%	0.0%
Absolute Return	11.7%	3.6%	8.1%	0.4%	0.1%	0.5%
Total Cash	-0.1%	0.0%	-0.2%	0.0%	0.3%	0.3%
<b>Total</b>	<b>20.7%</b>	<b>14.6%</b>	<b>6.1%</b>	<b>4.5%</b>	<b>1.6%</b>	<b>6.2%</b>

Note: Not all assets are valued through December 31, 2021 within Private Equity, Total Global Credit, Private Real Estate, Total Infrastructure and Absolute Return.

\*Total Fund Attribution Analysis uses policy weights.



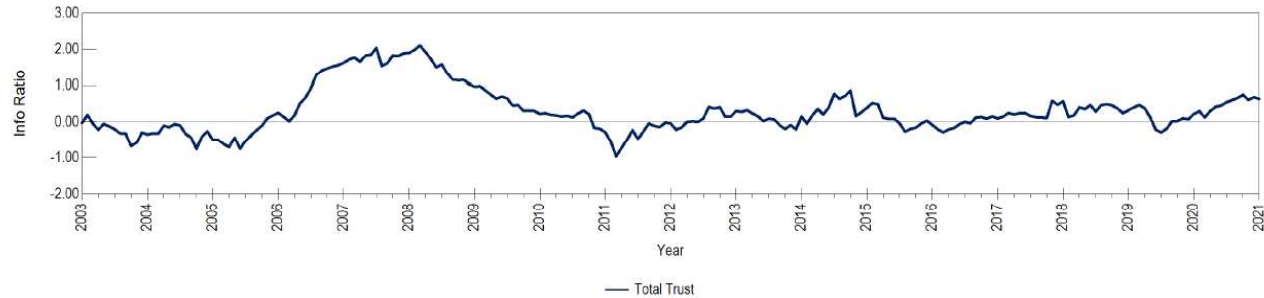
# LONG TERM INVESTMENT RESULTS



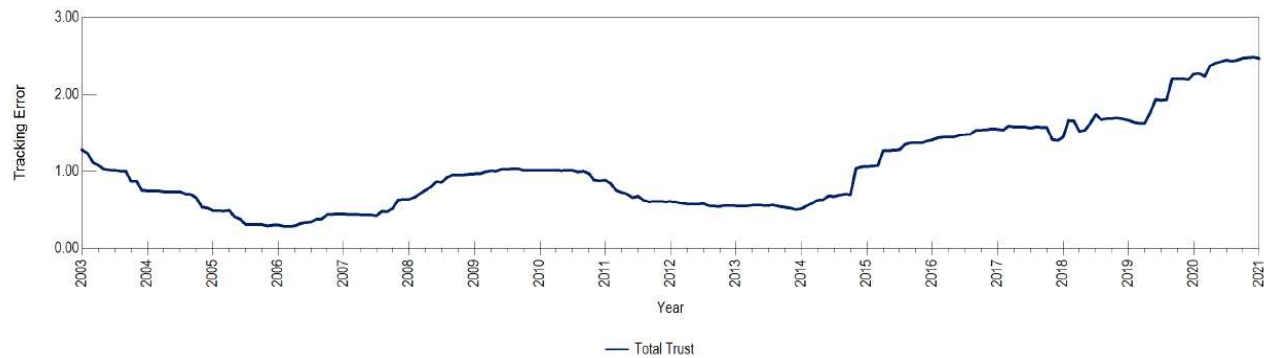
Note: Long Term Public Index is comprised of 79% MSCI ACWI IMI and 21% Bloomberg Intermediate Treasury Index. Index definitions can be found in the appendix.

# ROLLING INFORMATION RATIO AND TRACKING ERROR

Rolling 3 Year Information Ratio



Rolling 3 Year Tracking Error



# PERFORMANCE SUMMARY COMMENTARY

- **Over the past 10 years, Total Trust returns outperformed the Policy Benchmark by 0.8% and outperformed the Plan's actuarial rate of return (currently 7.0%).**
- **In the one-year ended December 31, 2021 the Fund outperformed the Policy Benchmark by 6.1%.**
  - Private Equity contributed +3.2%, Global Credit contributed +1.1%, Private Real Estate contributed +0.5%, Absolute Return contributed +0.5%, and Total Infrastructure contributed +0.3%.
- **In the past one-year, portfolio positioning at the asset class level contributed +1.6% to Total Fund returns versus the policy benchmark.**
  - An over-weight position to Private Equity contributed positively (+0.7%) to total fund returns versus the policy benchmark.
  - An under-weight position in Global Credit contributed positively (+0.2%) to total fund returns versus the policy benchmark.



# Risk Management & Applied Research Market and Portfolio Update

Carlos Chujoy, CFA, Director of Risk Management & Applied Research

# Risk Update

## *Fourth Quarter of 2021 Update*



### Agenda

- Key Takeaways
- Headwinds and Tailwinds
- Market Conditions
- Proxy Portfolio Analysis

# Risk Update

## *Key Takeaways*



- Several concerns drove market sentiment and stress levels during the quarter
  - Omicron
  - Higher fed funds rate
  - Fed's balance sheet normalization
- Risk indicators elevated for fund flows, volume flow and interest volatility
- Ending of prior quantitative easing programs led risk-seeking assets such as equities to correct
- Increased market risk due to market breadth narrowing
- A portfolio modeled with proxies (that represented illiquid assets) yielded to a portfolio with higher volatility, higher tracking error and lower risk-adjusted returns

# Risk Update

*Fourth Quarter of 2021*



## Headwinds

- Omicron became a major source of uncertainty
- Higher inflation expectations and lower economic projections
- Reduced market breadth
- Seasonally weak liquidity and volume flow
- Geopolitical tensions rose

## Tailwinds

- Omicron less severe
- Inflation surprises rolling over
- Early signs of supply chain improvements
- Fundamentals still supportive of continued growth above trend, but at a lower pace

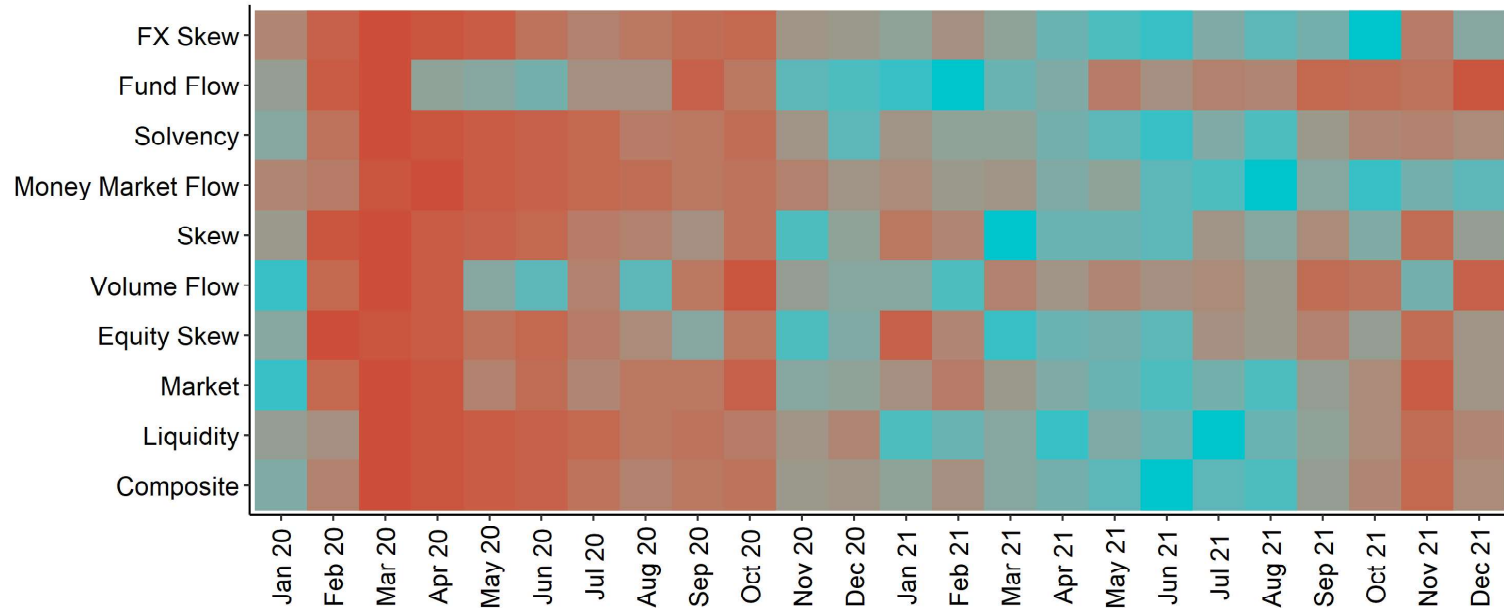
# Market Stress

## Global Financial Stress Indicators



### Heatmap of Global Stress Financial Indicators

Over the preceding 24-month period ending December 2021



Source: ERS, Bloomberg, Bank of America



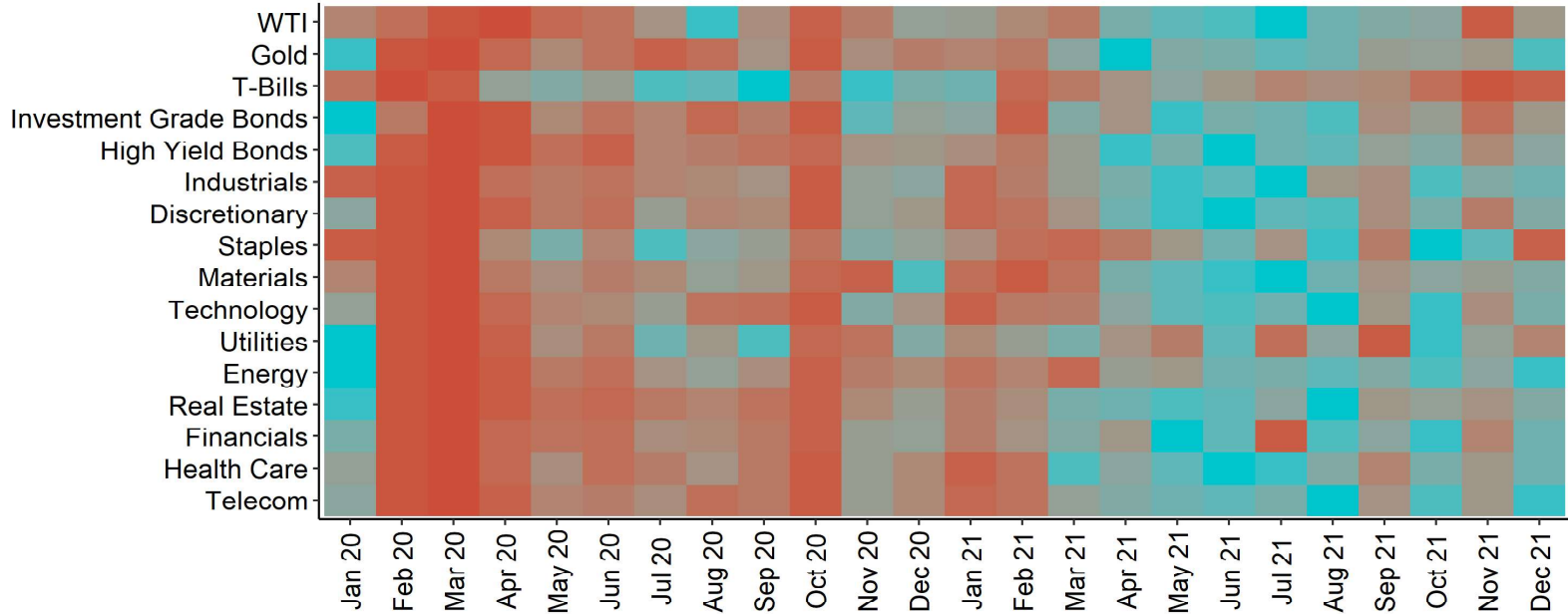
# Market Stress

## Cross Asset Class Implied Risk



### Heatmap of Cross Asset Class Implied Risk

Over the preceding 24-month period ending December 2021



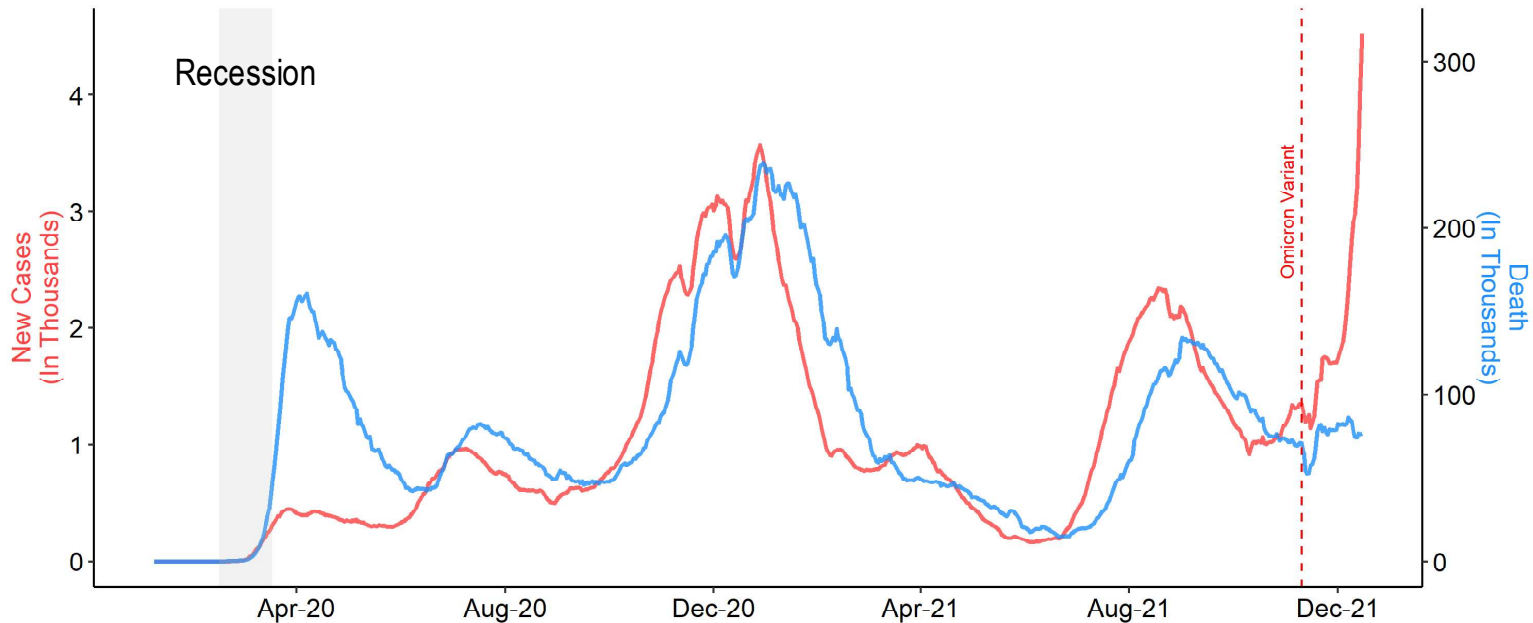
Source: ERS, Bloomberg

# Risk Driver 1: COVID-19 Variant

*Omicron became a new source of risk*

## USA: COVID-19 New and Death Cases

New and more aggressive variant



Source: ERS, CDC

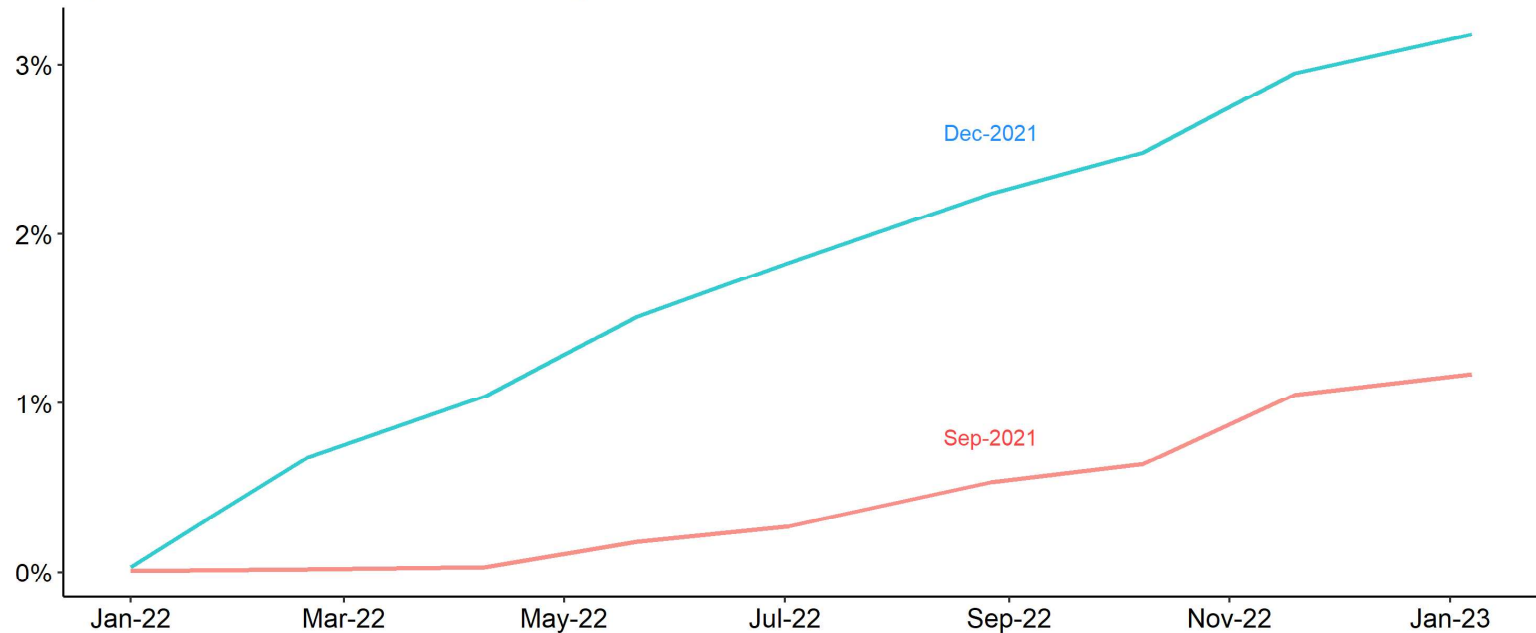
# Risk Driver 2: Higher Yields

*Anticipating near term Fed action on interest rates*



## Fed Fund Futures

Implied Fed Fund Rate at Future FOMC meetings



Source: ERS, Bloomberg

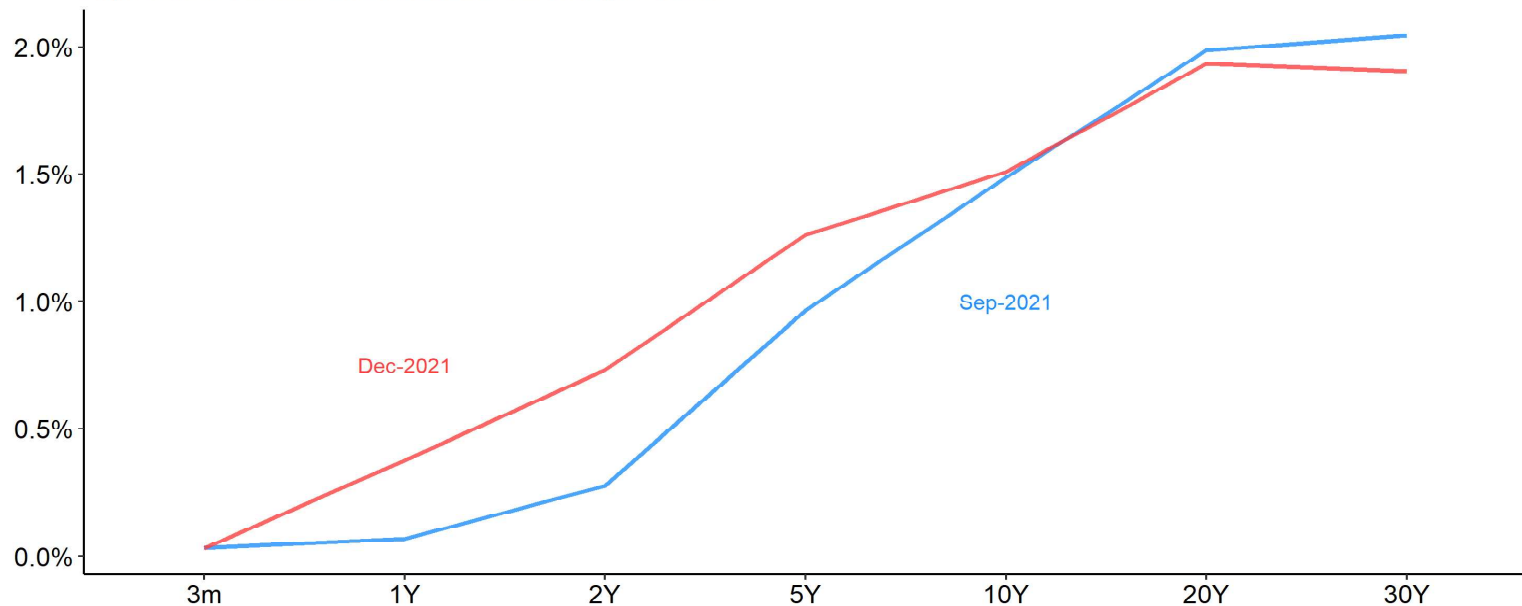
# Risk Driver 3: Yield Curve

*Changing shape suggests higher rates, lower economic growth/inflation*



## US Yield Curve

Expectations For Rate Increases Reflected In Higher Yields



Source: ERS, Bloomberg

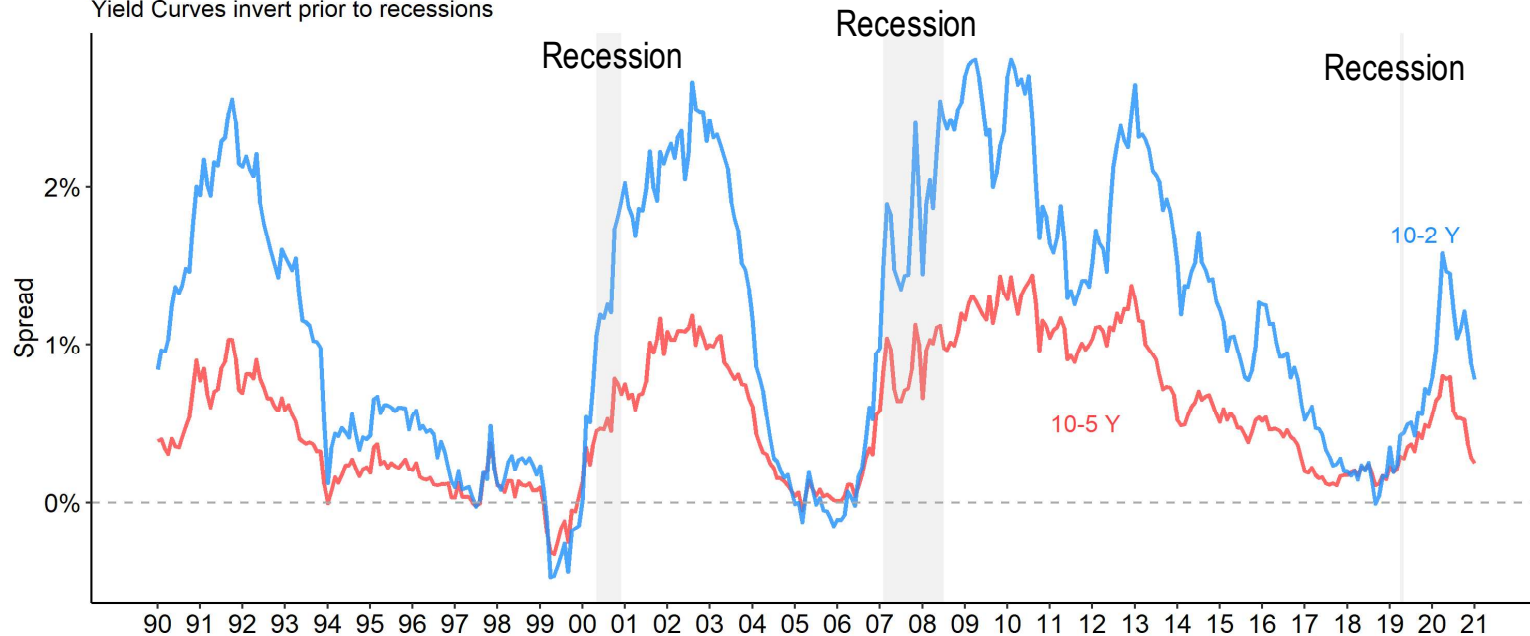
# Risk Driver 4: Yield Curve Spreads

*Leading indicator signals recession when it turns negative*



## US Yield Curve Spreads

Yield Curves invert prior to recessions



Source: ERS, Bloomberg

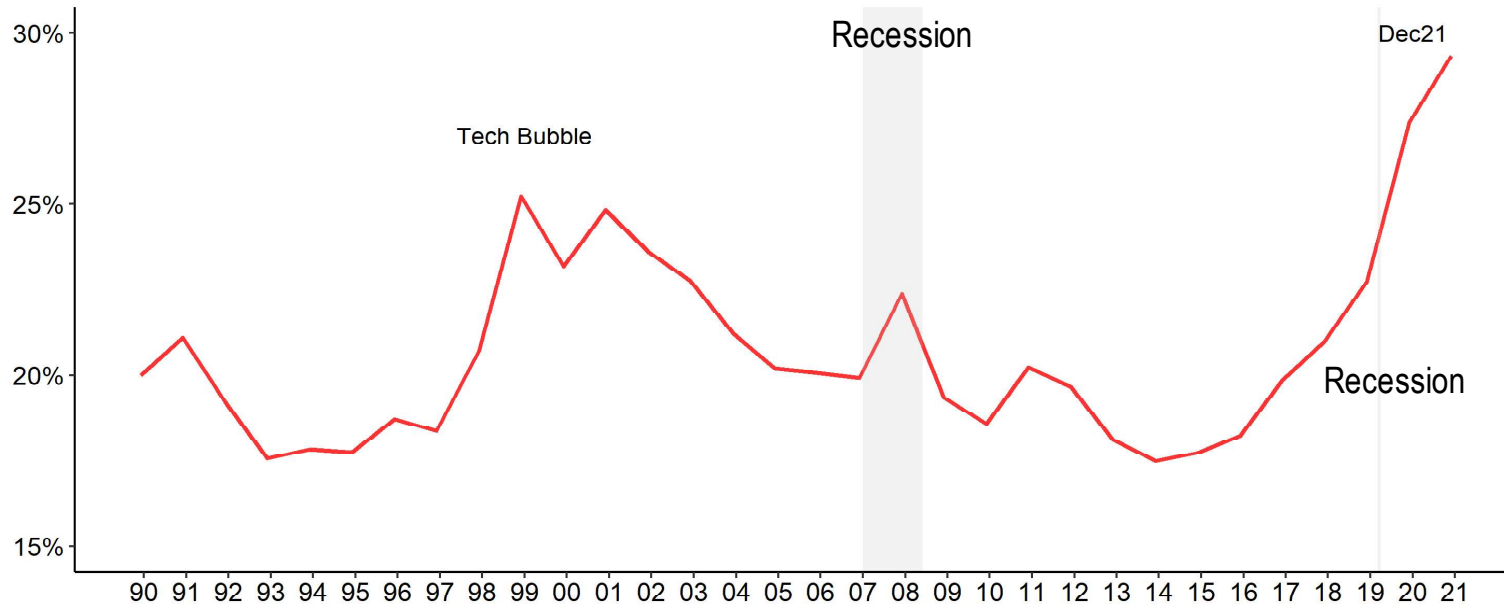
# Risk Driver 5: Market Breadth

*Small number of assets driving market performance*



## Importance of largest 10 securities in driving equity index performance

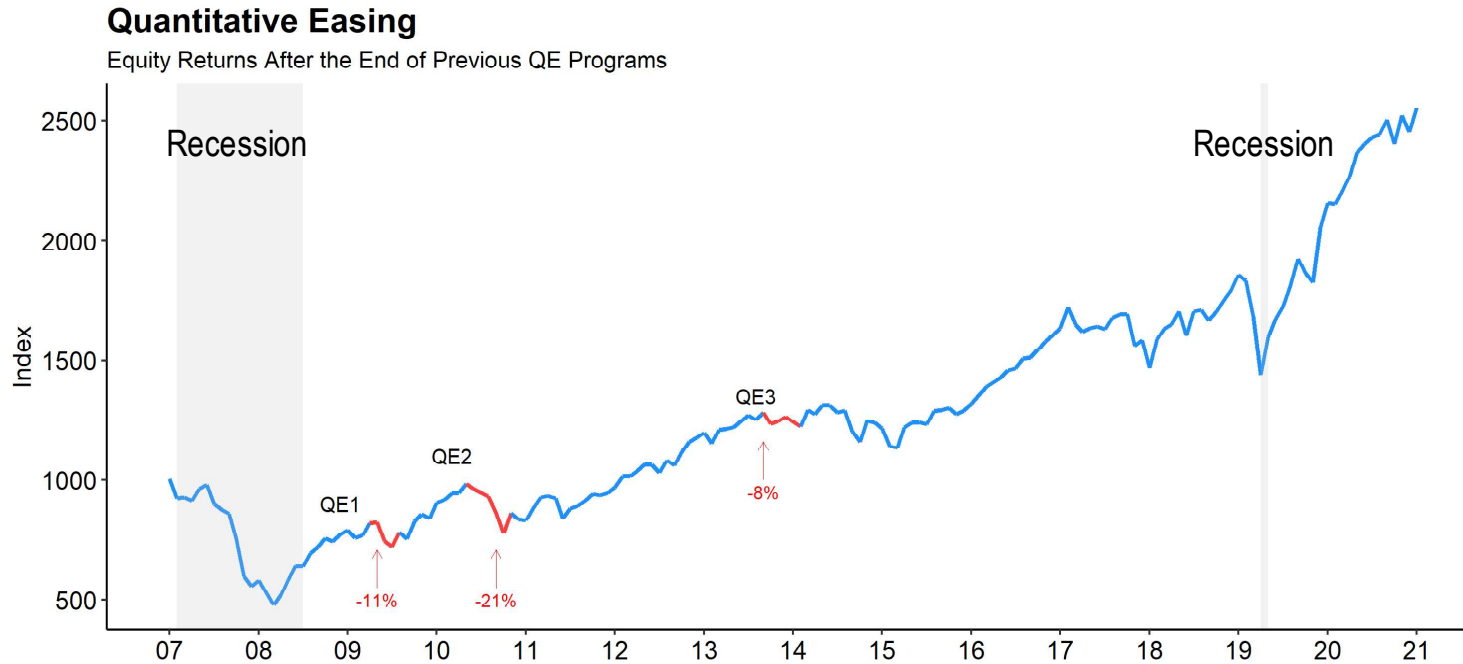
In uncharted territory



Source: ERS, Bloomberg. The line represents the largest 10 securities within the S&P500 index expressed as a percentage of total index market capitalization.

# Risk Driver 6: Quantitative Easing

*Equities suffer when the Fed stops buying bonds*



Source: ERS, Bloomberg  
Shaded areas represent recessions.

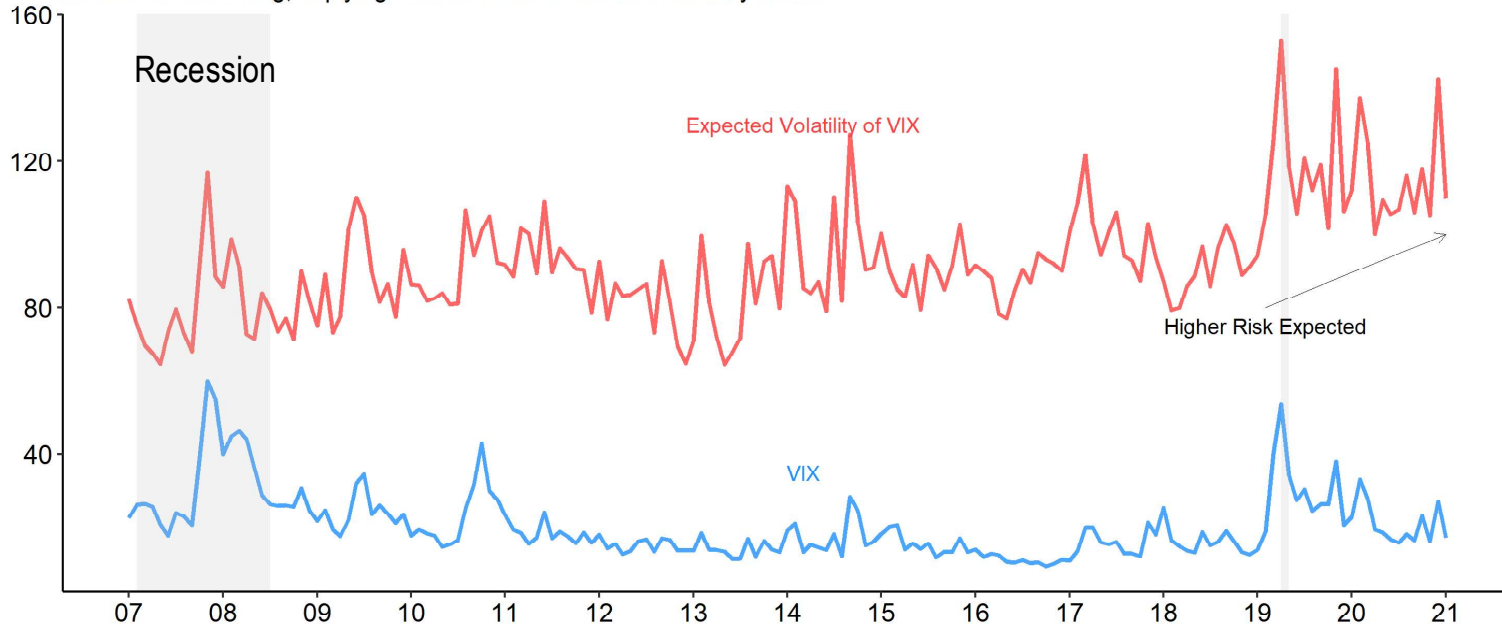
# Equity Volatility

*Rose last quarter and expected to remain elevated*



## Expected Volatility of VIX

Has Been Increasing, Implying Turbulent Times Ahead For Risky Assets



Source: ERS, Bloomberg



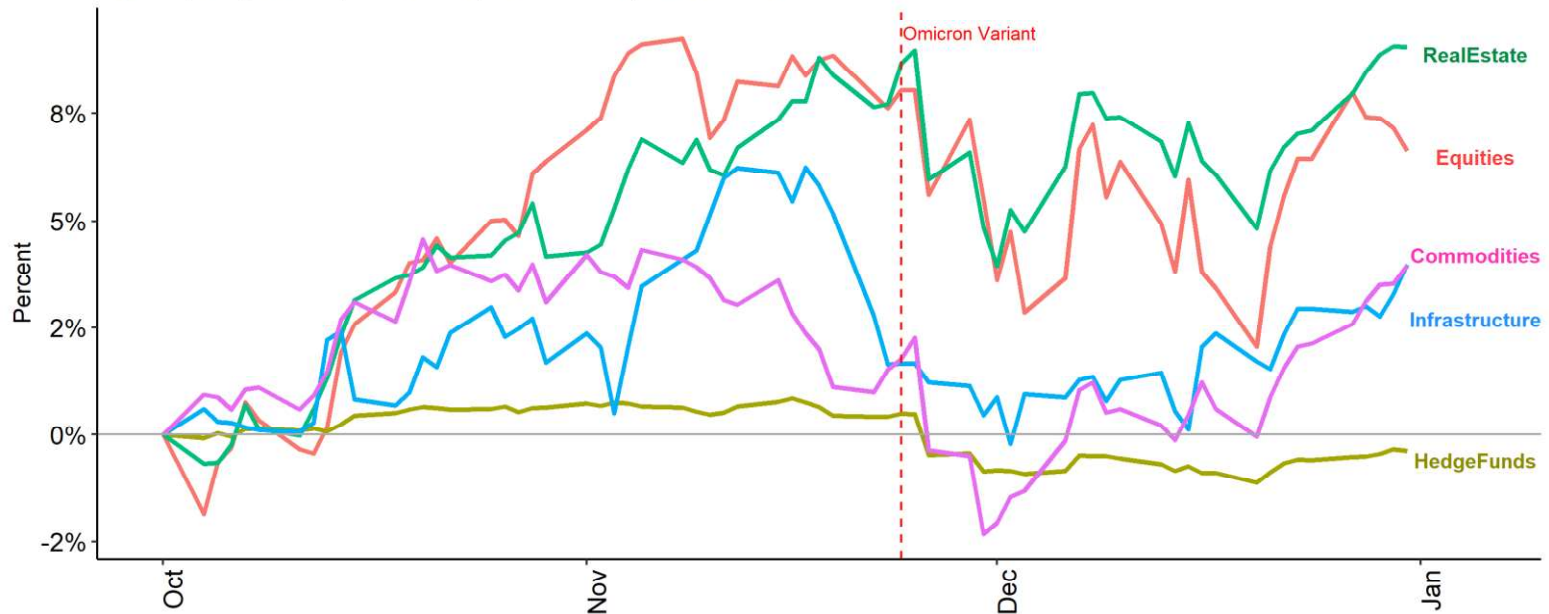
# Market Performance

*Risk-Seeking assets pulled back amid Omicron and interest rate concerns*



## 4Q21 Returns

Equities, Hedge Funds, Real Estate, Commodities, Infrastructure



Source: ERS, Bloomberg

# Liquid Proxy Analysis for ERS Trust

# Liquid Proxy Analysis

## Modeling the ERS Trust



- Use index returns for public market indices as a proxy for the private market investments of the ERS Trust

Asset Class	Proportion	Proxy Index	Multiplier
Private Equity	50%	MSCI ACWI ex-US	1.5
Private Equity	50%	S&P 600	1.5
Private Real Estate	100%	FTSE EPRA NARIET	1.3
Private Infrastructure	100%	FTSE Global Infrastructure	1.3

# Liquid Proxy Analysis

## *ERS Trust vs. Proxy Portfolio vs. Policy Benchmark*



- Returns of proxy portfolio are similar to ERS Trust but more volatile

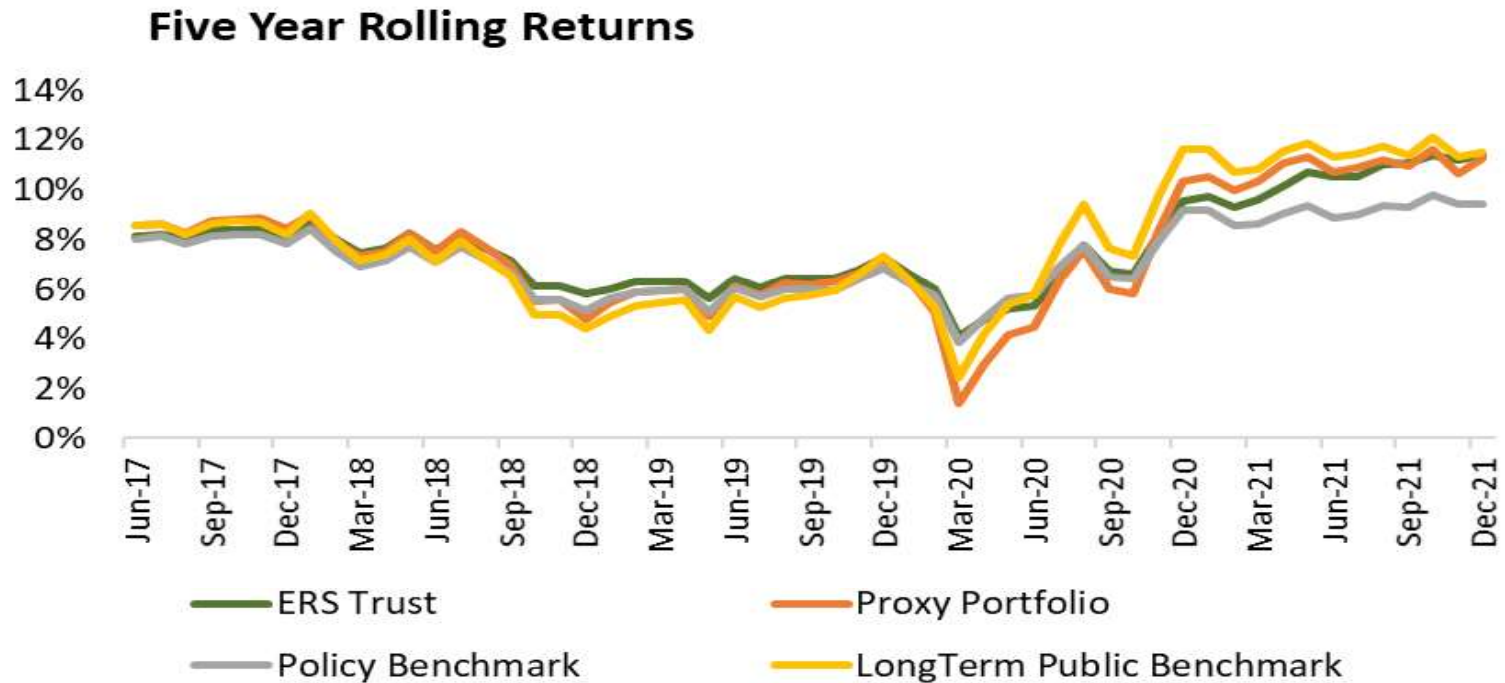
	<b>ERS Trust</b>	<b>Policy Benchmark</b>	<b>Proxy Portfolio</b>	<b>Long Term Public Benchmark</b>
<b>Annualized Return</b>	9.8%	8.8%	9.9%	9.9%
<b>Annualized Vol</b>	6.4%	6.9%	10.5%	10.2%
<b>Sharpe Ratio</b>	1.54	1.27	0.94	0.98
<b>Tracking Error</b>	1.7%		4.4%	

# Liquid Proxy Analysis

## Comparative Returns



- Long-term returns of proxy portfolio are similar but more volatile



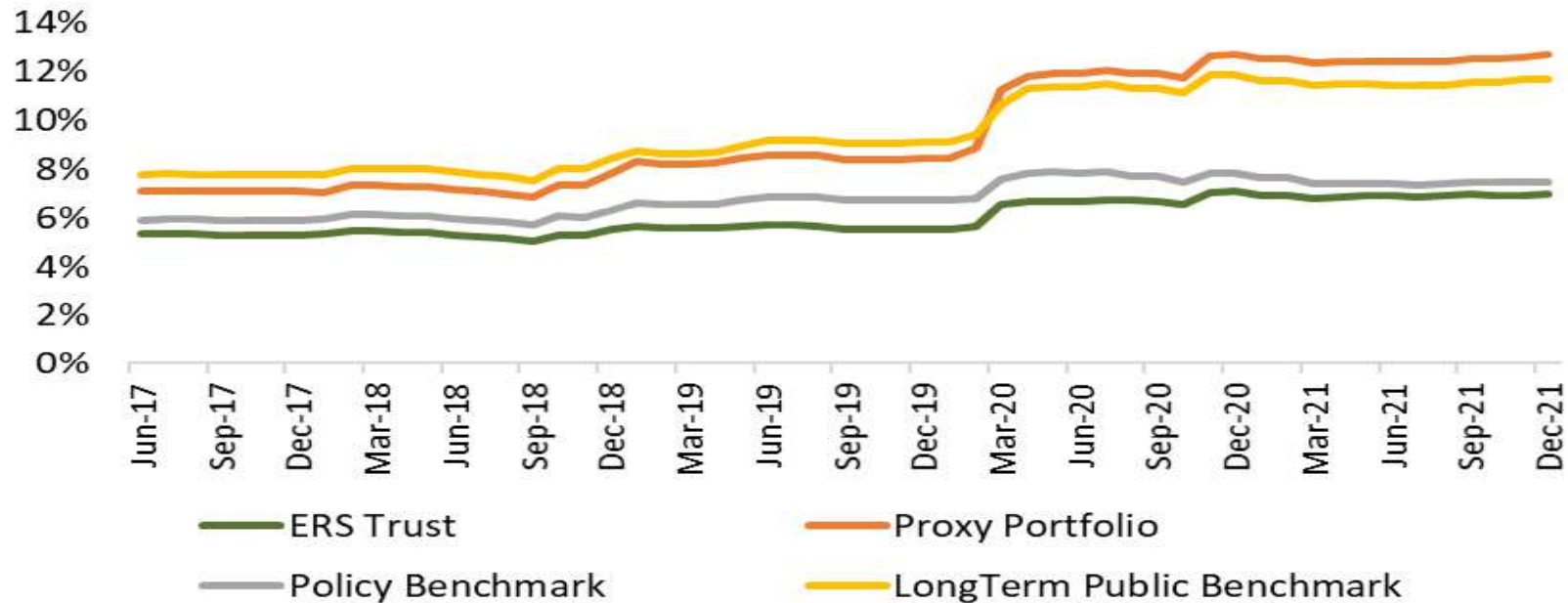
# Liquid Proxy Analysis

## Rolling Volatility



- Long-term returns of proxy portfolio are similar but more volatile

**Five Year Rolling Volatility**



Questions?

## Public Agenda Item #16

### *\*Consideration of Annual Review of Capital Market Assumptions*

March 9, 2022

David T. Veal, Chief Investment Officer

John McCaffrey, Portfolio Manager Risk Management and Applied Research



# Capital Market Assumptions

## *Key Takeaways*



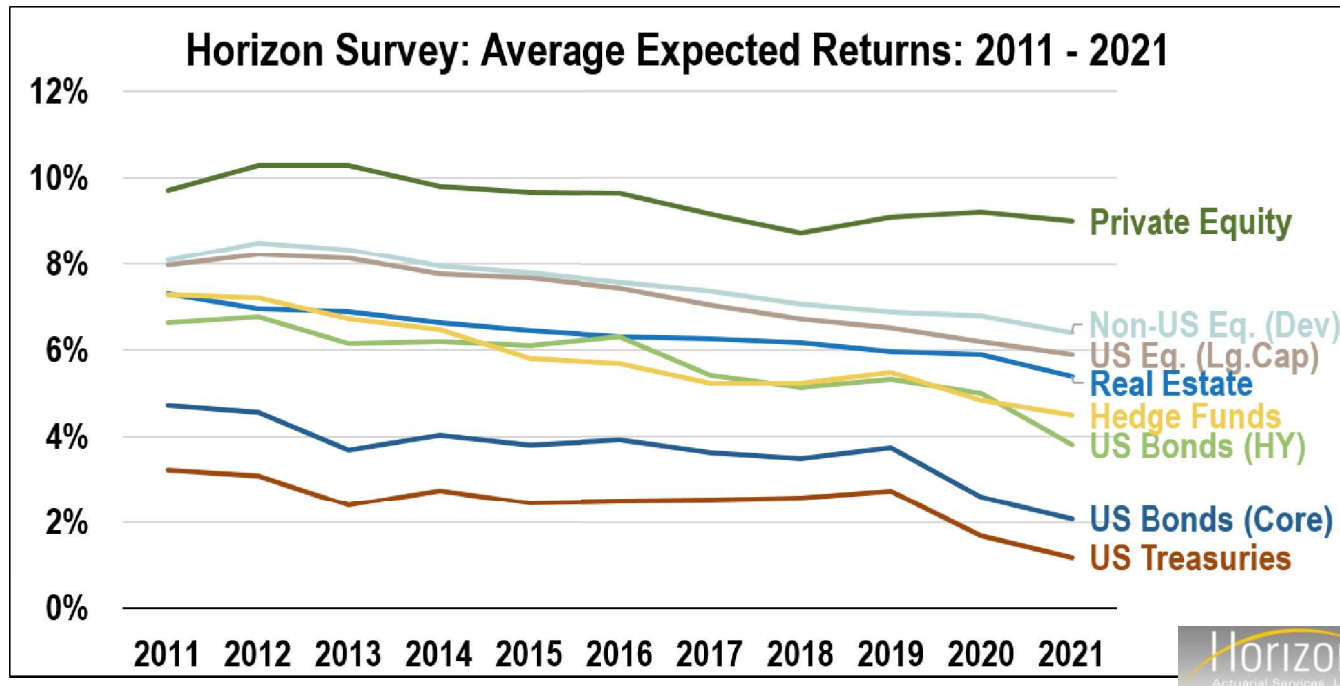
- Overall trend towards lower expected returns relative to recent history
- Higher performance expected for diversified mix vs traditional stock/bond portfolio
- CMA review suggests expected Trust returns of 6.8% to 7.1%
- Investment Themes
  - Sustained inflation and tighter policy change the outlook for treasuries and commodities
  - The multi-decade trend toward globalization is now reversing as supply chains falter
  - Wage growth and worker shortages are driving capex toward productivity improvement
  - Record consumer savings could drive capital market valuations higher
  - The outlook on China varies but most agree on the relative importance of the market

# Capital Market Assumptions

## Surveying the Range



- With exception of private equity, return expectations continue downward trend

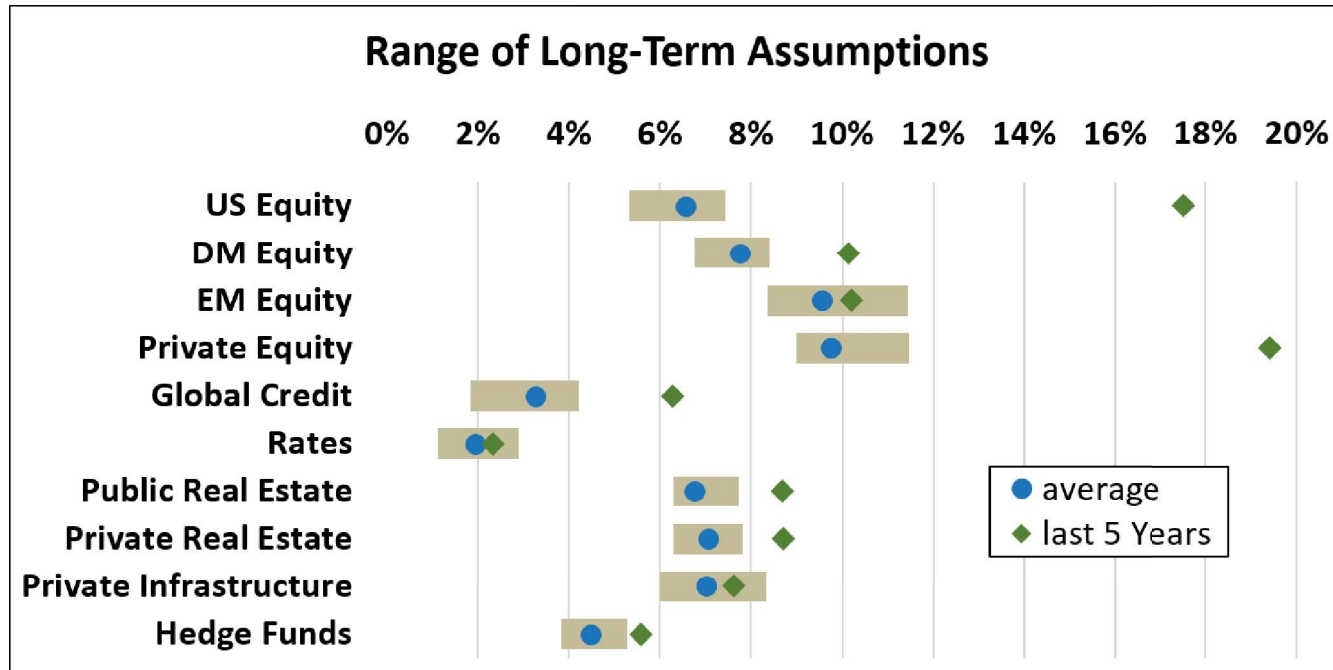


# Capital Market Assumptions

## Surveying the Range



- Expected returns are universally lower than realized return over the last five years

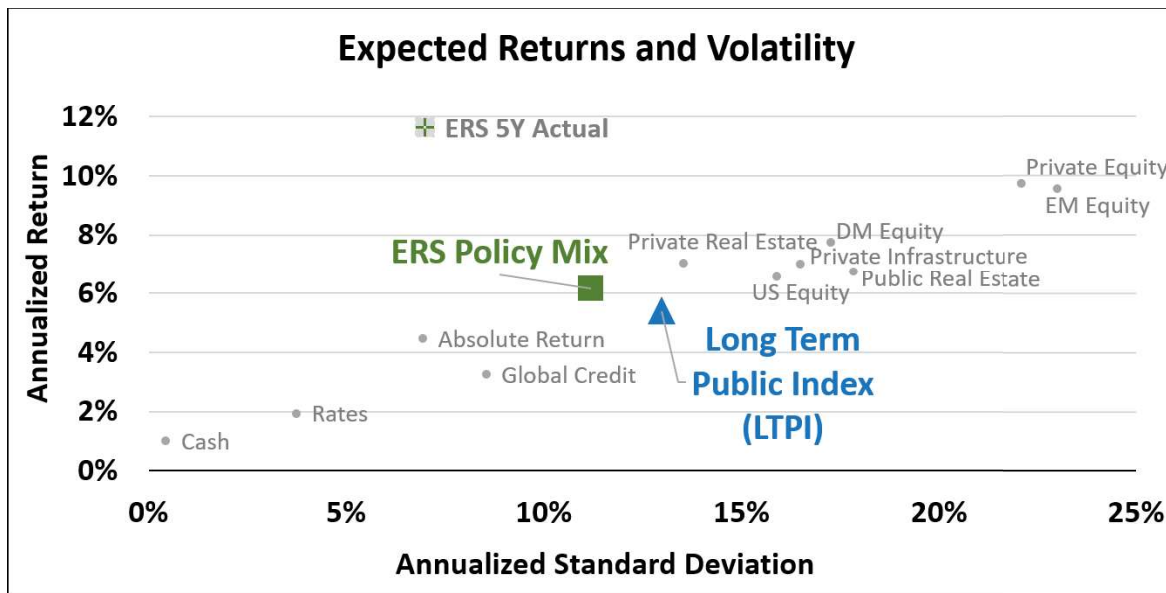


# Capital Market Assumptions

## Passive Public → Policy Mix



- Applying CMAs to the Long Term Public Index (LPTI) results in a 5.4% expected return
- The ERS policy mix expects to add ~80 bps via the inclusion of diversifying assets



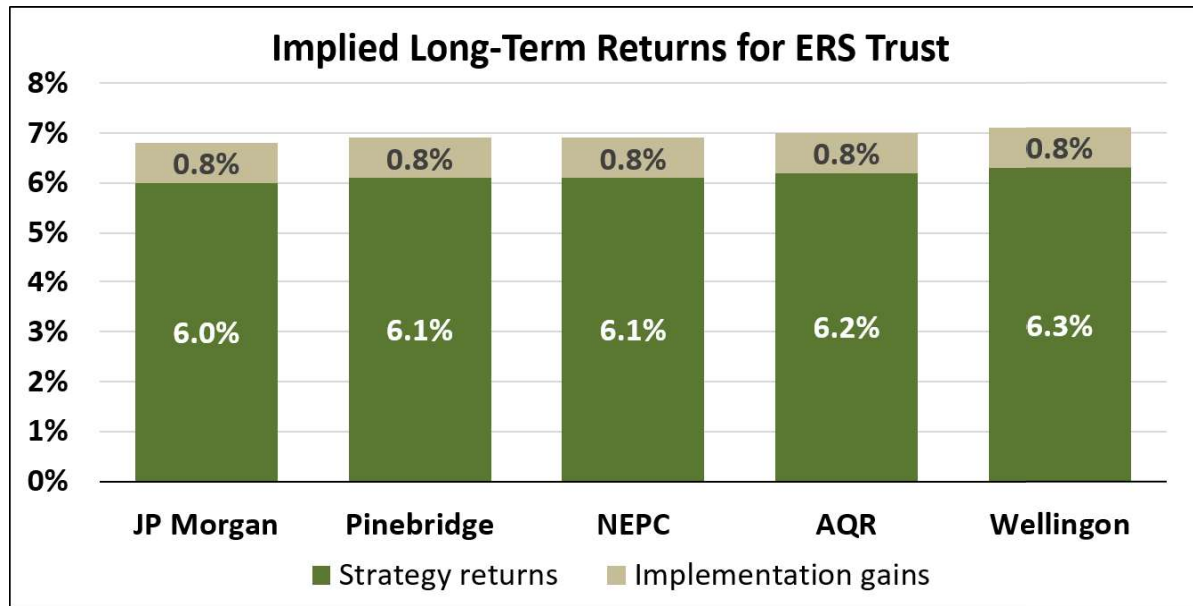
The Long Term Public Index (LTPI) is an internal proxy for a traditional 80/20 stock/bond portfolio implemented passively in public markets.

# Capital Market Assumptions

## *Policy Mix → Target Return*



- Applying CMAs to ERS policy mix results in expected returns of 6.0% to 6.3%
- Historical implementation gains of ~80 bps raise expected Trust returns of 6.8% to 7.1%



# Capital Market Assumptions

## Theme #1: Economic Crossroads



- Higher levels of inflation signal a new economic regime where investors should revisit their Treasury holdings and consider adding commodity exposure for diversification



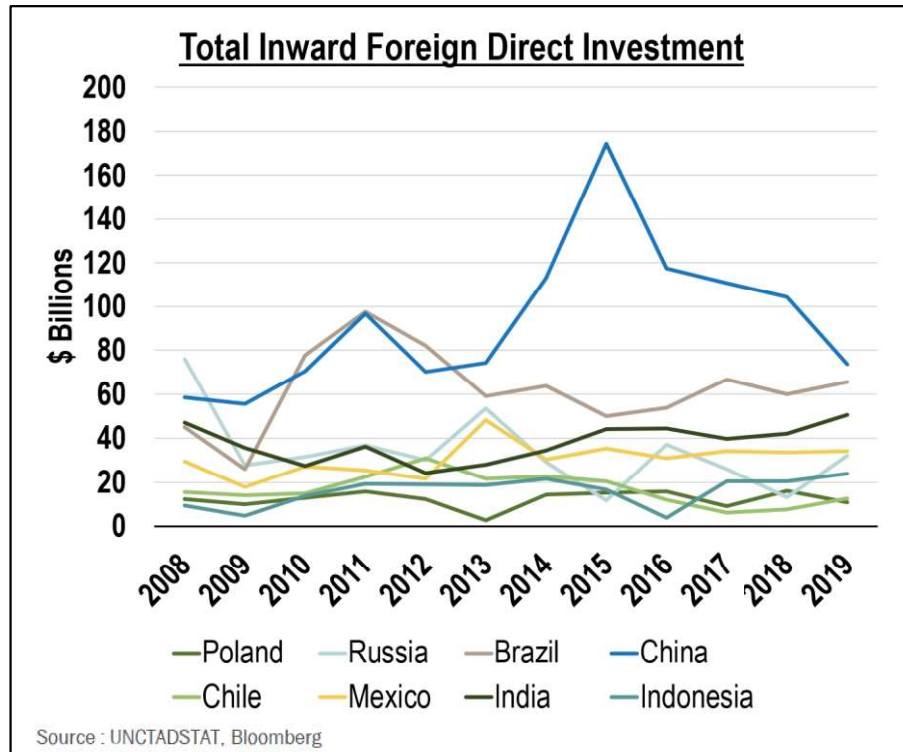
Sharpe Ratios by Regime	U.S. Large Cap	U.S. Treasury	U.S. TIPS	Commodities
Full Data Set (1970)	0.395	0.414	0.511	0.164
Defensive - Falling Inflation	-0.012	1.175	0.289	-0.609
Defensive - Rising Inflation	-0.707	-0.102	0.968	0.714
Growth - Falling Inflation	1.548	1.238	0.656	0.188
Growth - Rising Inflation	0.799	-0.426	0.486	0.632



Sources: S&P, Bloomberg, FactSet, NEPC

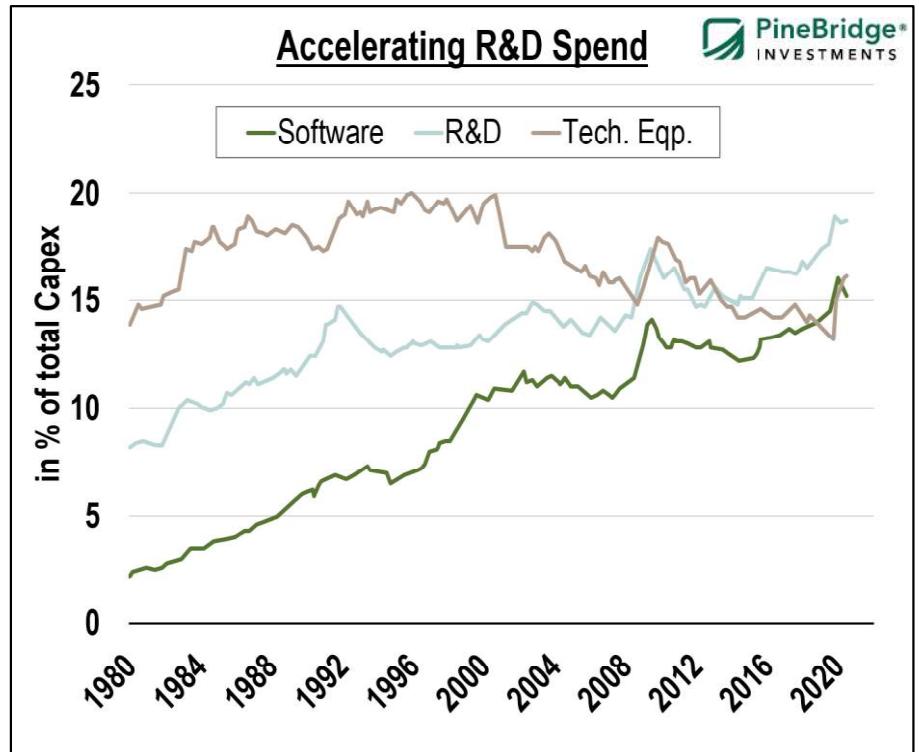
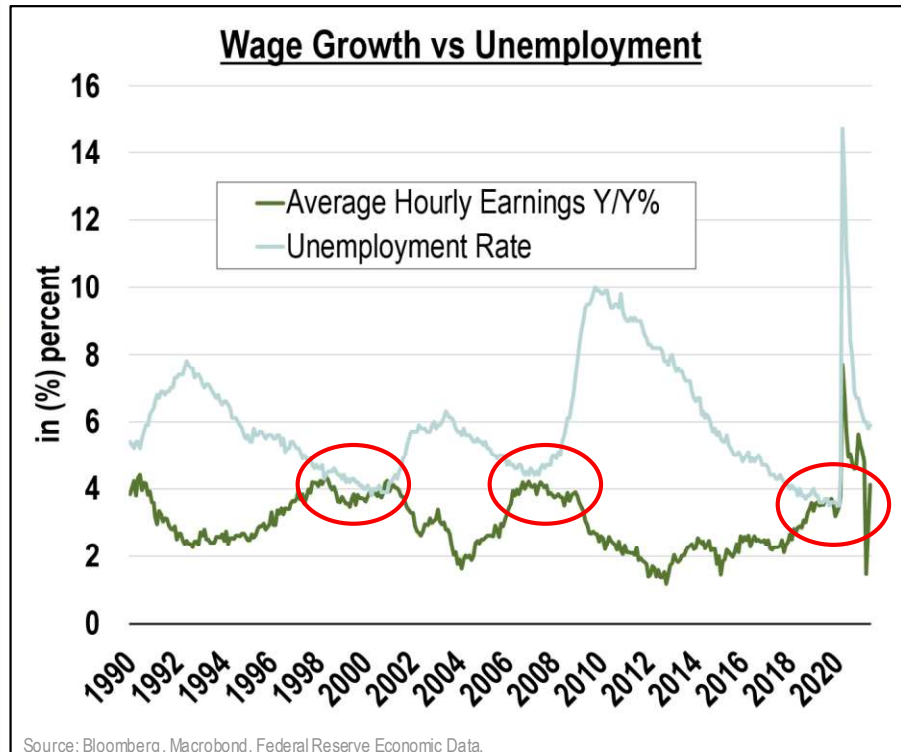
# Capital Market Assumptions

## Theme #2: Peak Globalization



# Capital Market Assumptions

## Theme #3: Tight Labor and Productivity Growth



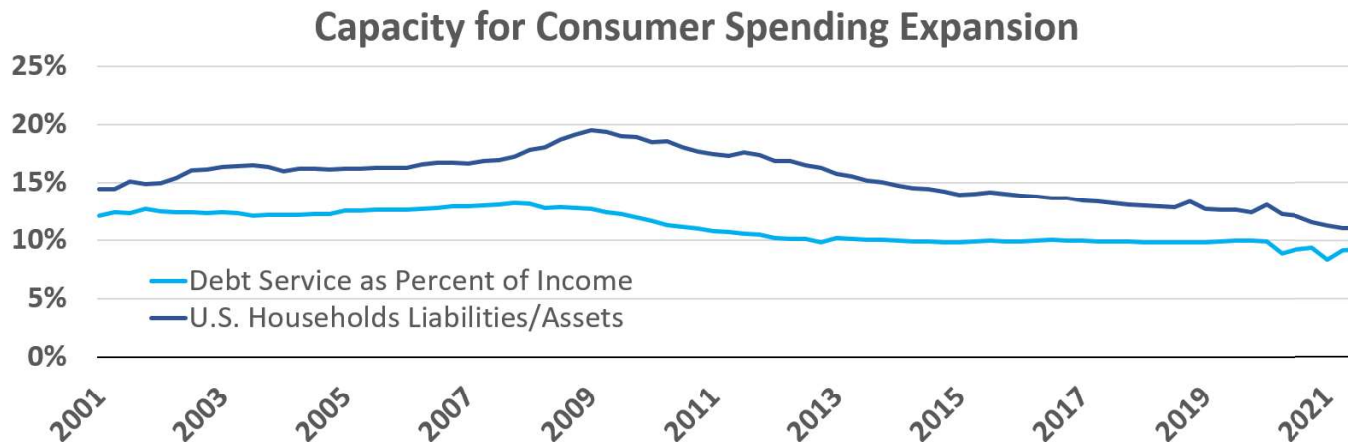


# Capital Market Assumptions

## Theme #4: Healthy Consumers



- Private sector savings are at unprecedented levels for all income groups due to deleveraging during the 2010s as well as substantial policy support during the pandemic



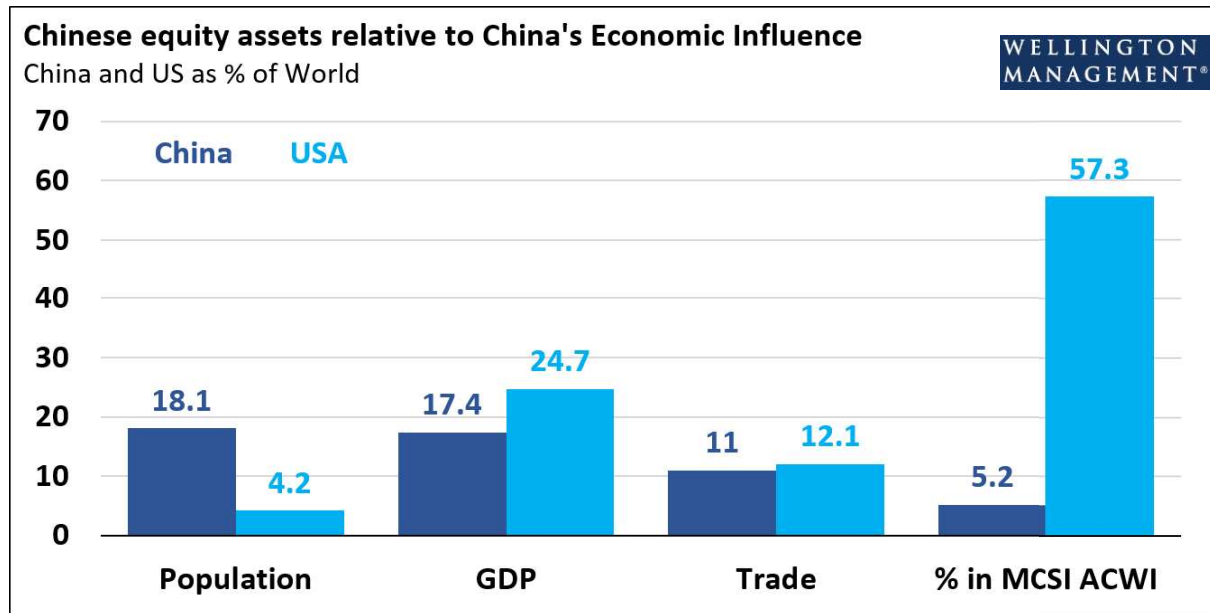
Sources: Federal Reserve System, FactSet

# Capital Market Assumptions

## Theme #5: China



- The economic and strategic importance of China in coming years is clear, but views vary regarding the relative outlook for the country's equity market



Questions?

\*Public Agenda Item #17

*\*Consideration of Annual Review of Fixed Income  
Program*

March 9, 2022

David T. Veal, Chief Investment Officer  
Leighton Shantz, Director of Fixed Income

# Fixed Income

## *Program Overview*



### **Two Separate Programs**

- **Rates** – Risk reducing allocation to provide short-term liquidity
- **Credit** – Return seeking allocation to provide long-term growth

### **Investment Objective**

- Outperform their respective benchmarks over rolling 5-year periods
- Maintain compliance with risk budget

# Rates

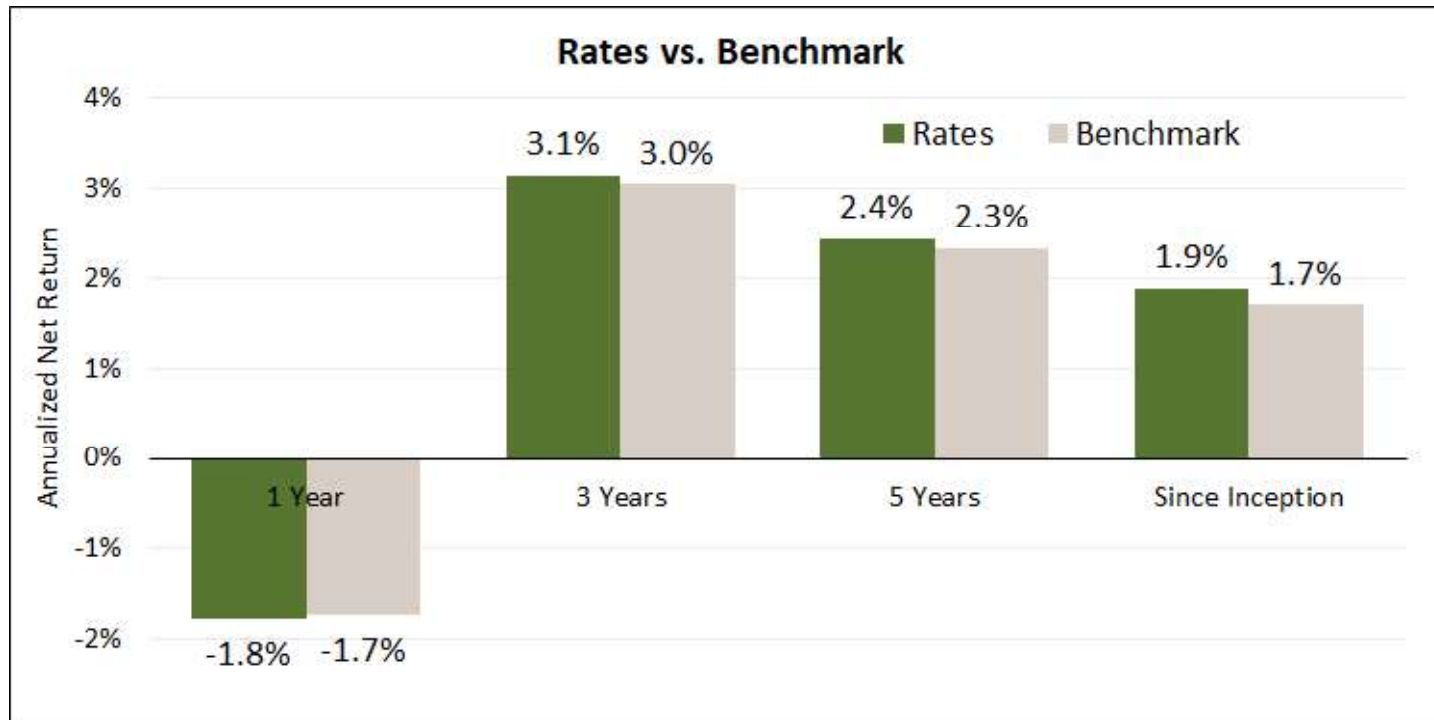
## Key Characteristics



Attribute	Rates Portfolio
Type of Allocation	Risk Reducing
Policy Allocation	Target weight of 11%
Management Style	Internal via US Treasuries and mortgages
Risk Budget	Tracking error target = 50 bps
	Tracking error limit = 100 bps
Expected Information Ratio	0.20
Investment Expenses	~5 bps total

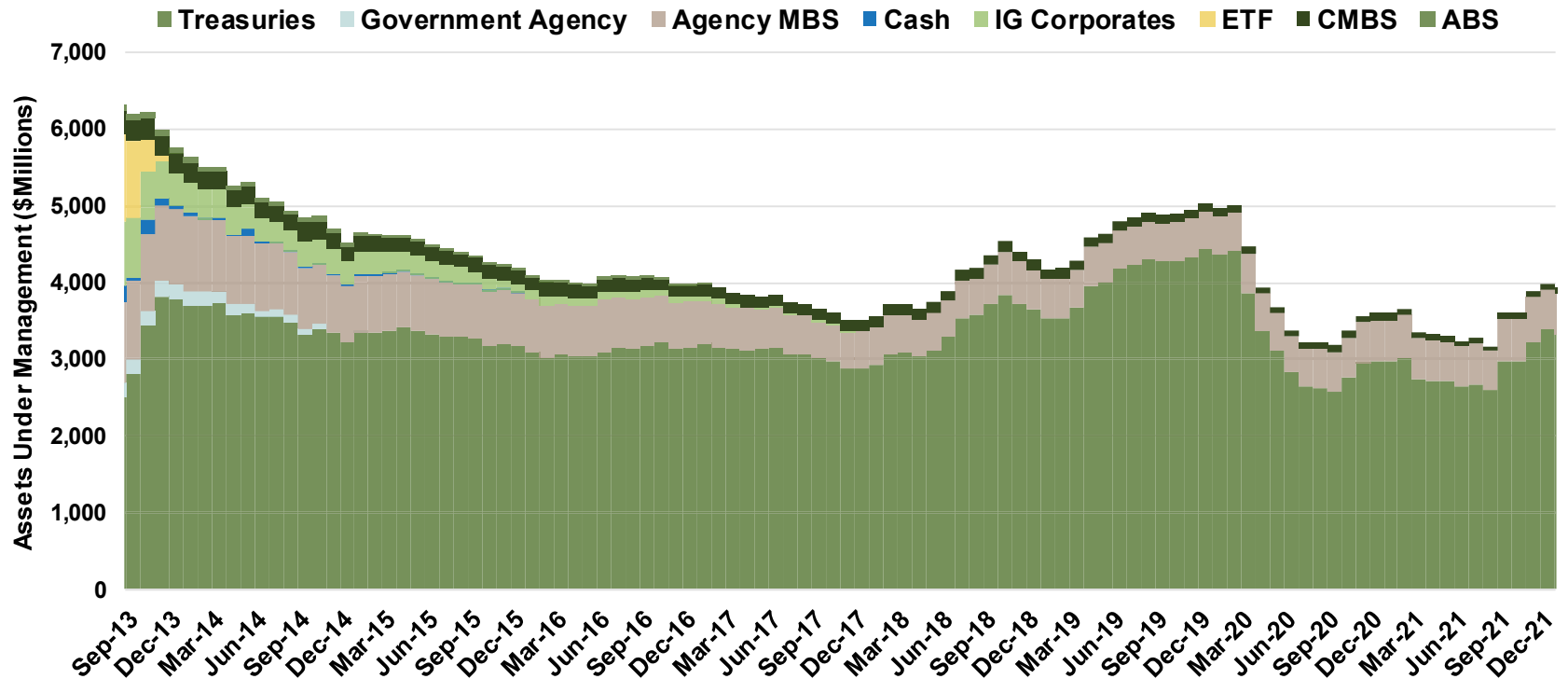
# Rates

## Performance Snapshot



# Rates

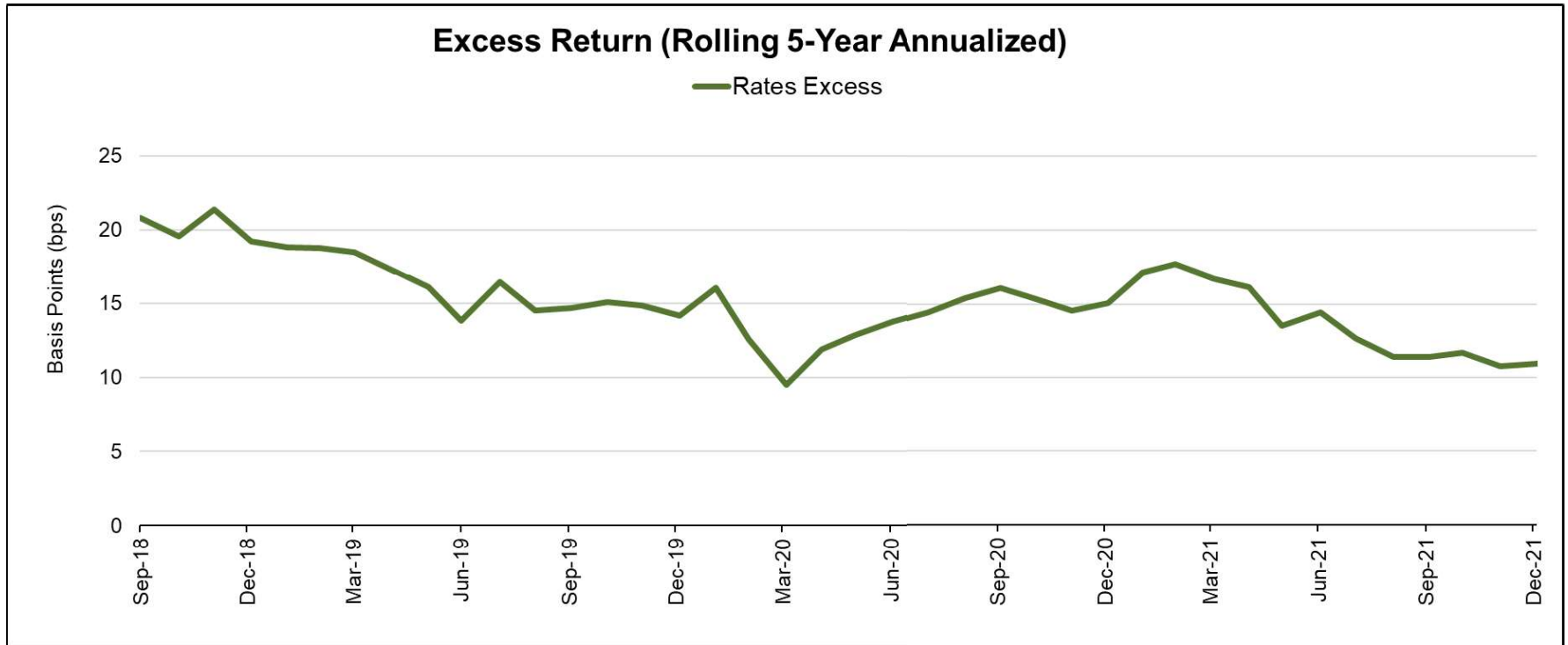
## Historical Composition





# Rates

## Historical Performance



# Rates

## Performance Drivers



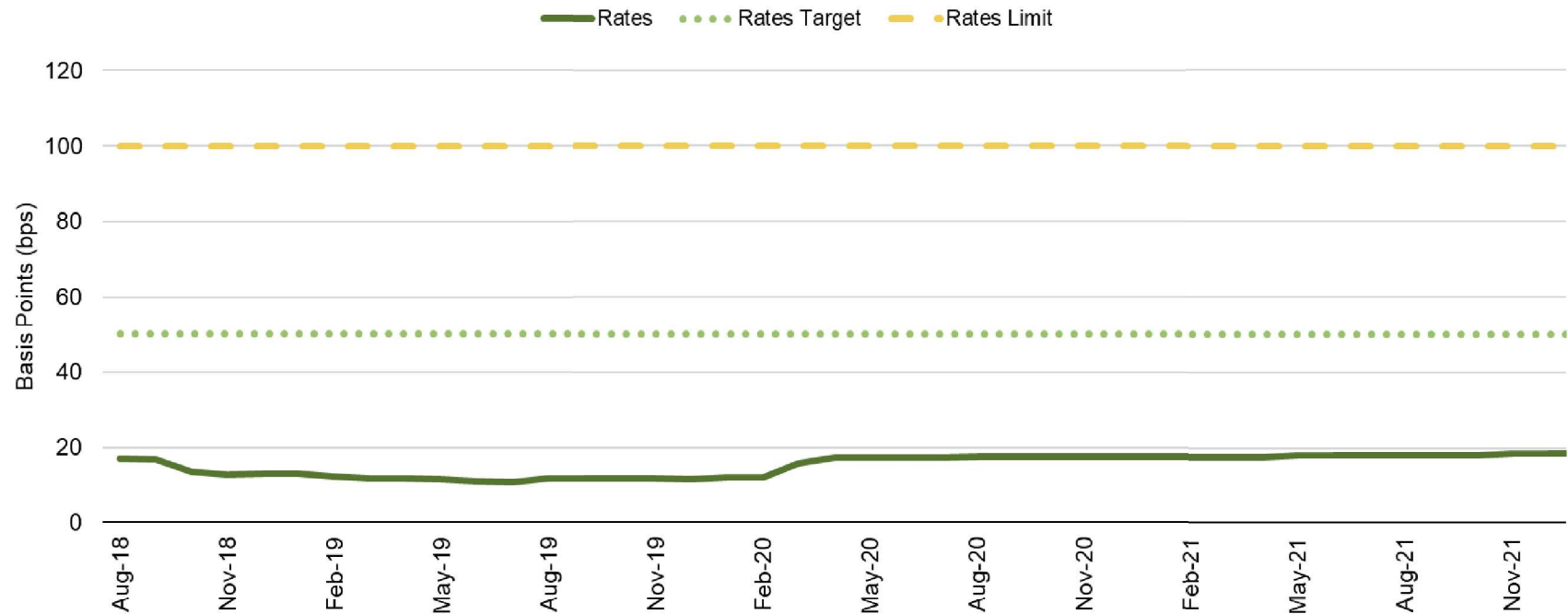
Relative Returns	1 Year	5 Years
<b>Rates</b>	<b>-4 bps</b>	<b>+11 bps</b>
Treasuries	-17 bps	+3 bps
MBS	+60 bps	+40 bps
CMBS	+198 bps	+77 bps

# Rates

## Historical Risk



### Tracking Error (Rolling 5-Year Realized)



# Credit

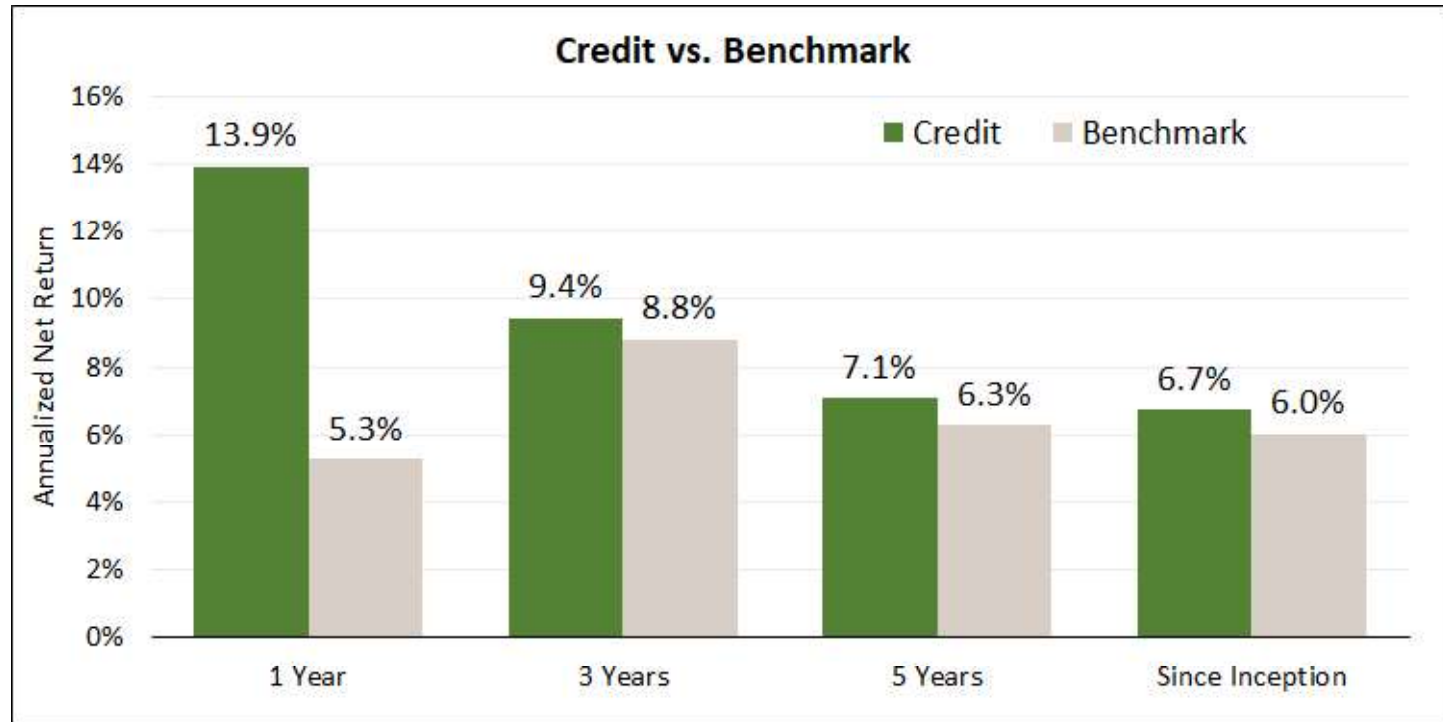
## Key Characteristics



Attribute	Credit Portfolio
Type of Allocation	Return Seeking
Policy Allocation	Target weight of 13%, range of 1-21%
Management Style	Primarily internal via high yield bonds Some external management via higher risk/return structures
Risk Budget	Tracking error target = 200 bps, limit = 300 bps
Expected Information Ratio	0.35
Investment Expenses	~14 bps internal, ~80 bps within external credit

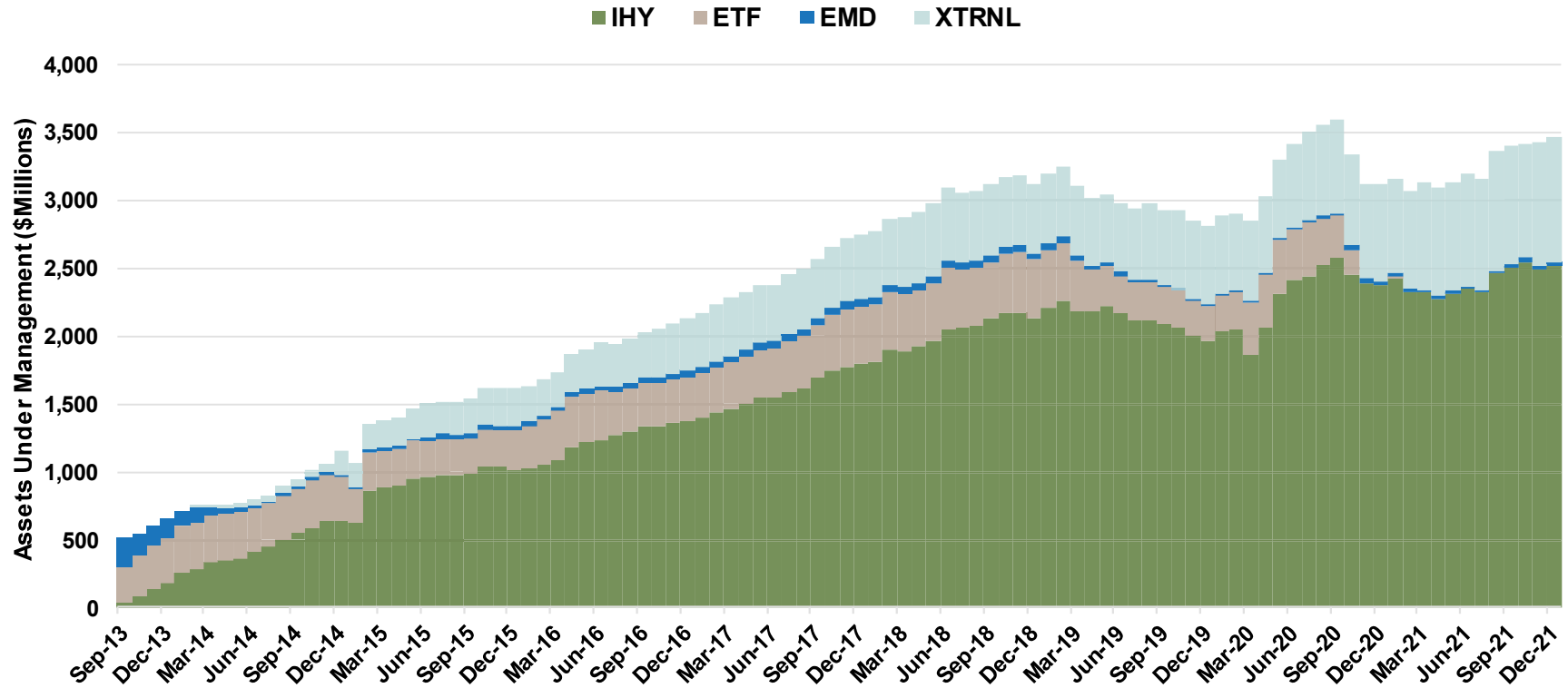
# Credit

## Performance Snapshot



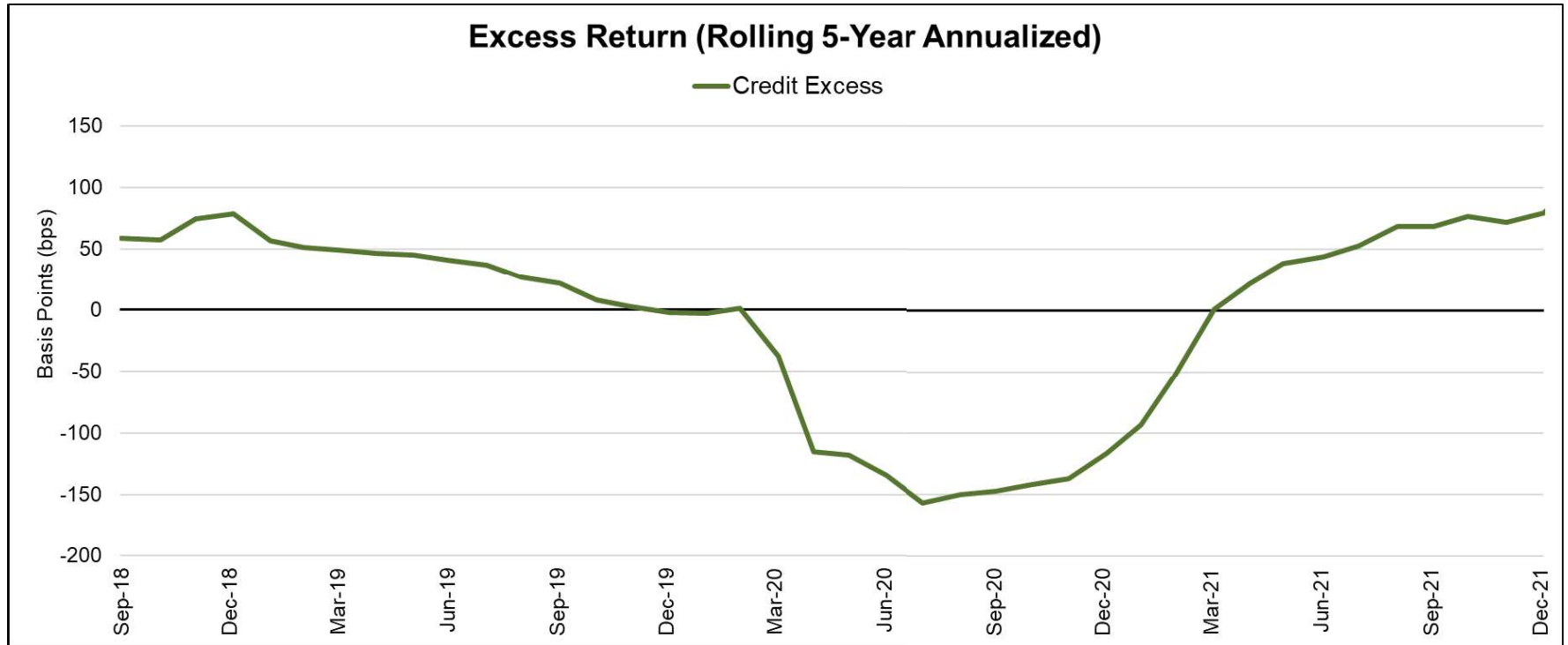
# Credit

## Historical Composition



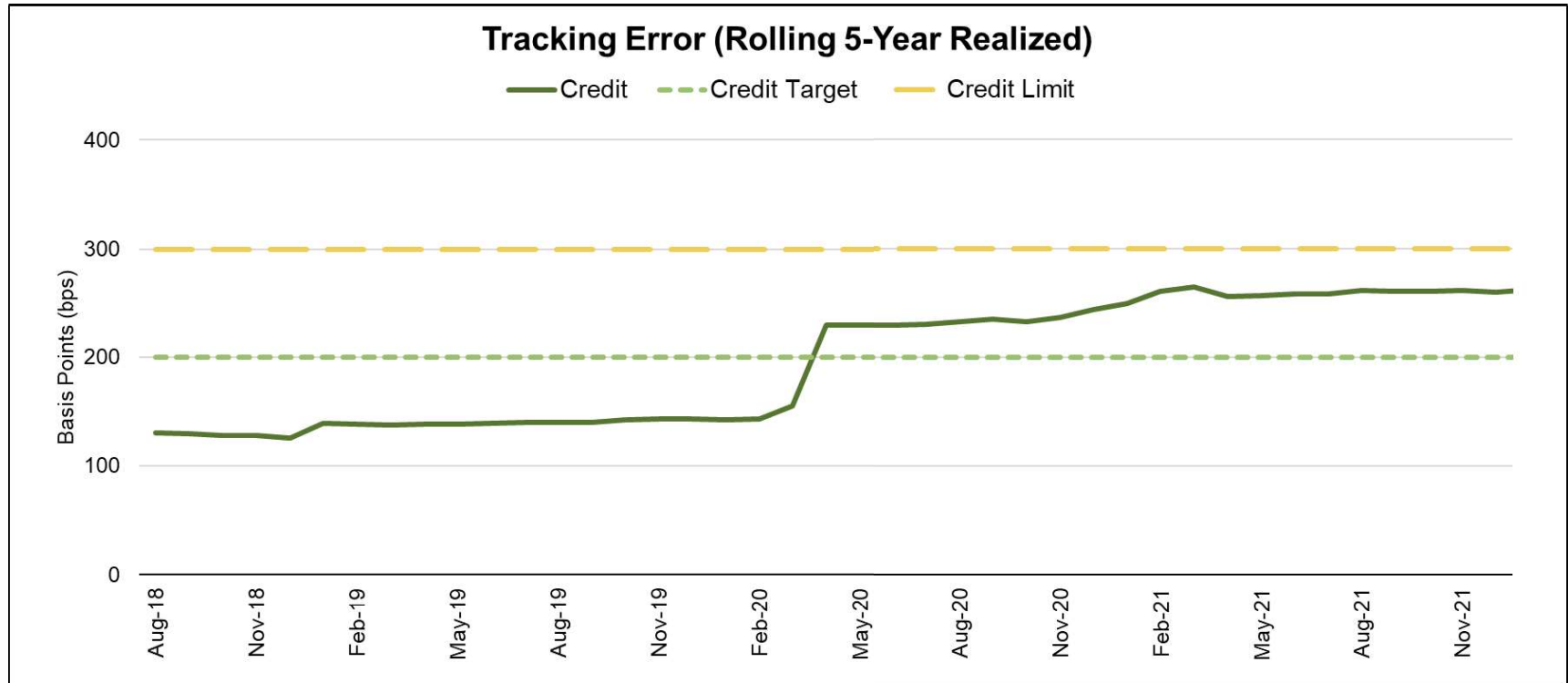
# Credit

## Historical Performance



# Credit

## Historical Risk





# Credit

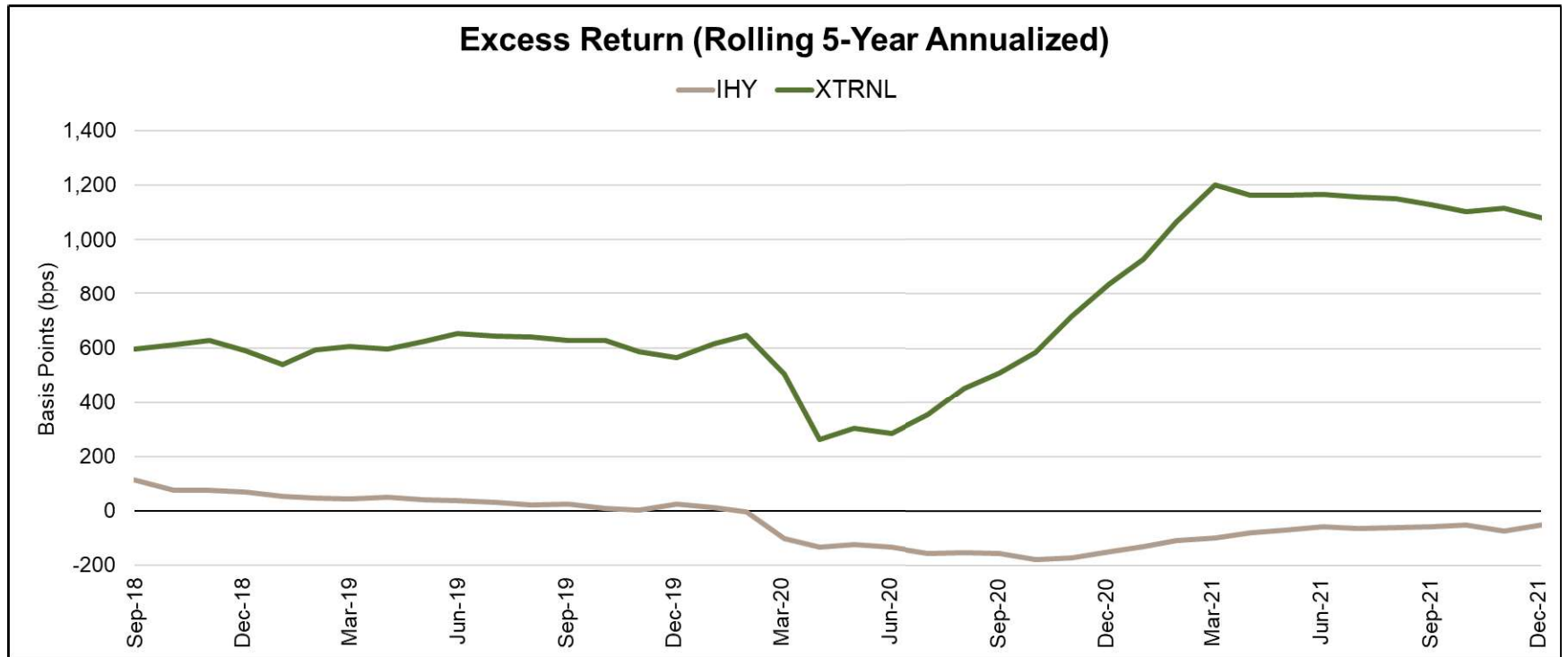
## Performance Drivers



Relative Returns	1 Year	5 Years
<b>Credit</b>	<b>+866 bps</b>	<b>+79 bps</b>
Internal High Yield (IHY)	+389 bps	-50 bps
External Credit (XTRNL)	+2465 bps	+449 bps

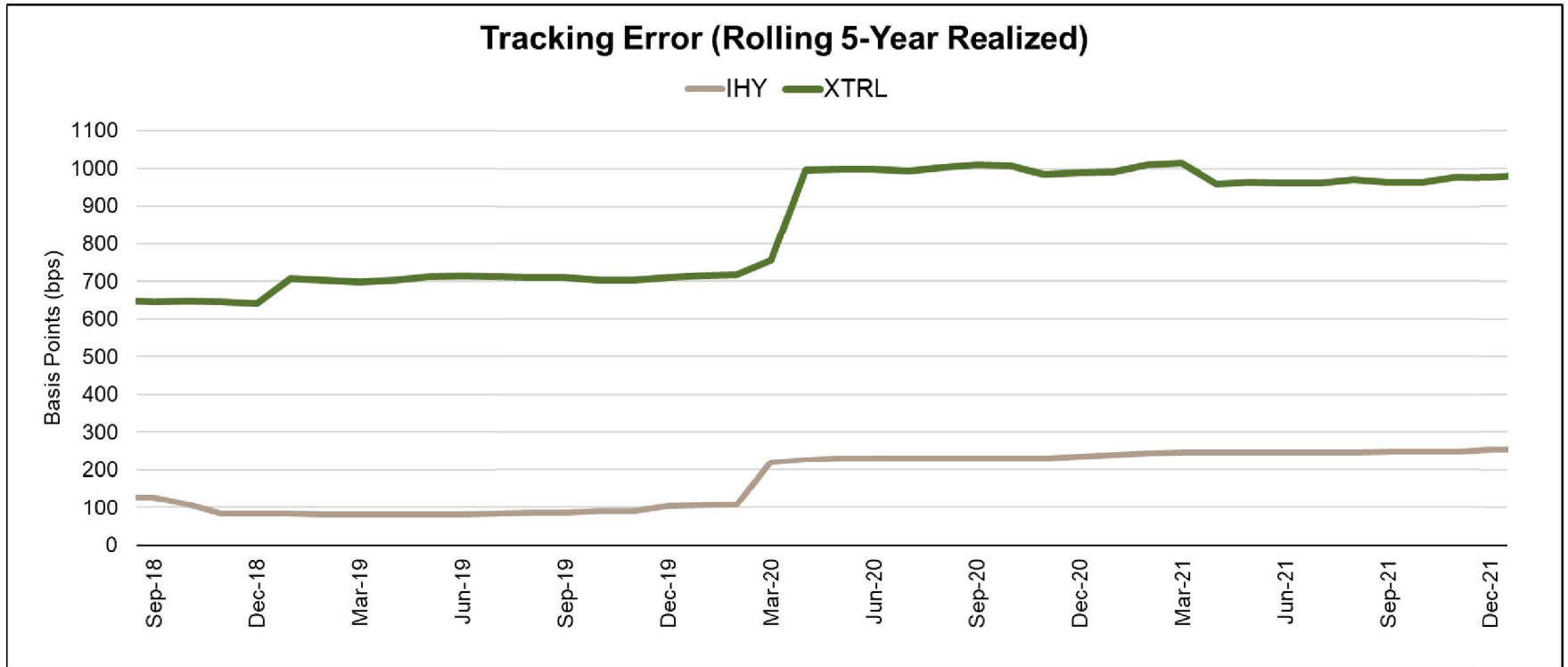
# Credit

## Historical Performance



# Credit

## Historical Risk



# Fixed Income Program

## *Initiatives for 2022*



- Continue to manage both portfolios opportunistically
- Consider the changing liquidity needs of the Trust
- Evaluate potential updates to the risk budgeting methodology

# Consideration of Securities Lending Program

Leighton Shantz, CFA, Director of Fixed Income

# Securities Lending

## *Program Overview*



- Authorized by the Board in ERS Investment Policy Statement
- Objective: earn revenue from lending while minimizing risk from collateral
- Deutsche Bank AG (DB) appointed as securities lending agent in 2011
- Board to receive summary performance report annually

# Securities Lending

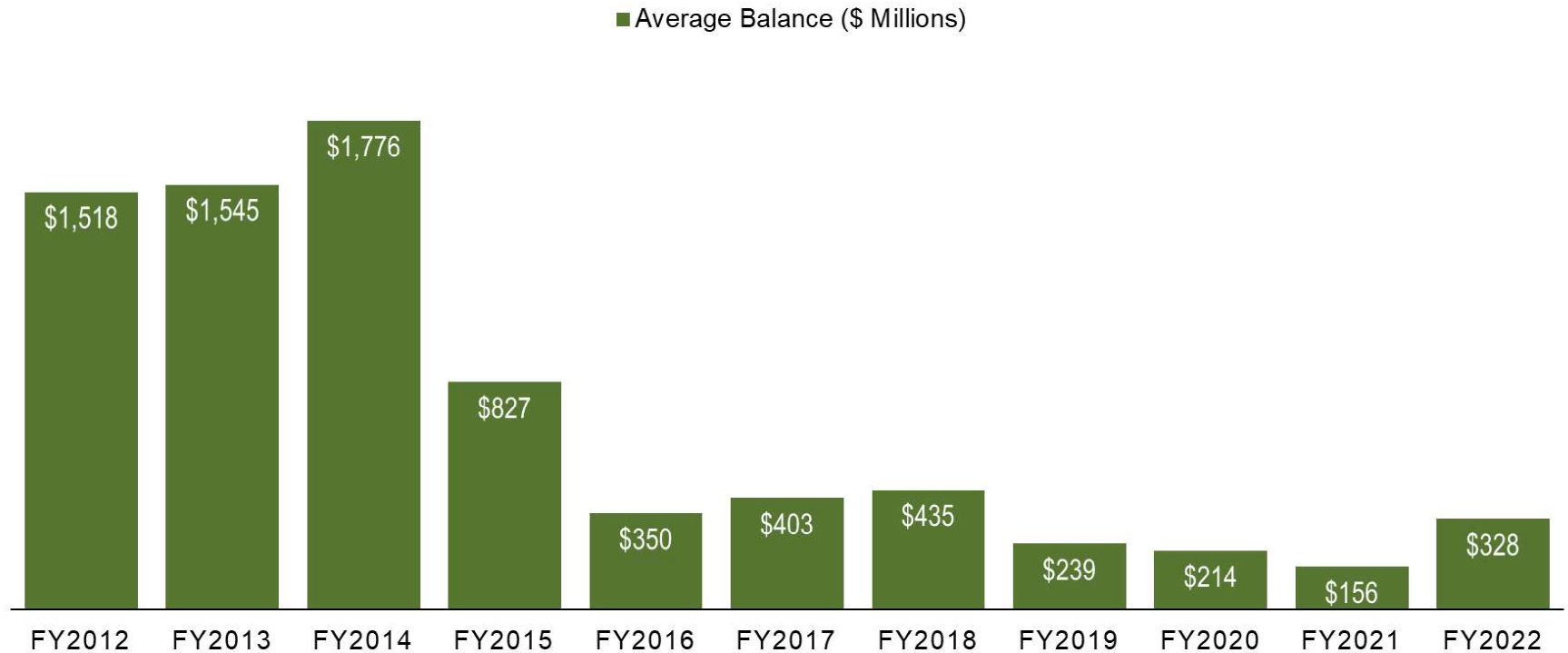
## *Program Design*



- Designed to maximize risk-adjusted return rather than revenue
  - Lend only those holdings with no rebates due from collateral
  - Receive collateral worth 100%+ on every borrowed security
  - Invest collateral only in overnight government repurchase agreements
  - DB indemnifies against any failure to return a security and any losses on collateral invested in repurchase agreements
  - Revenue is split 90% to ERS and 10% to DB

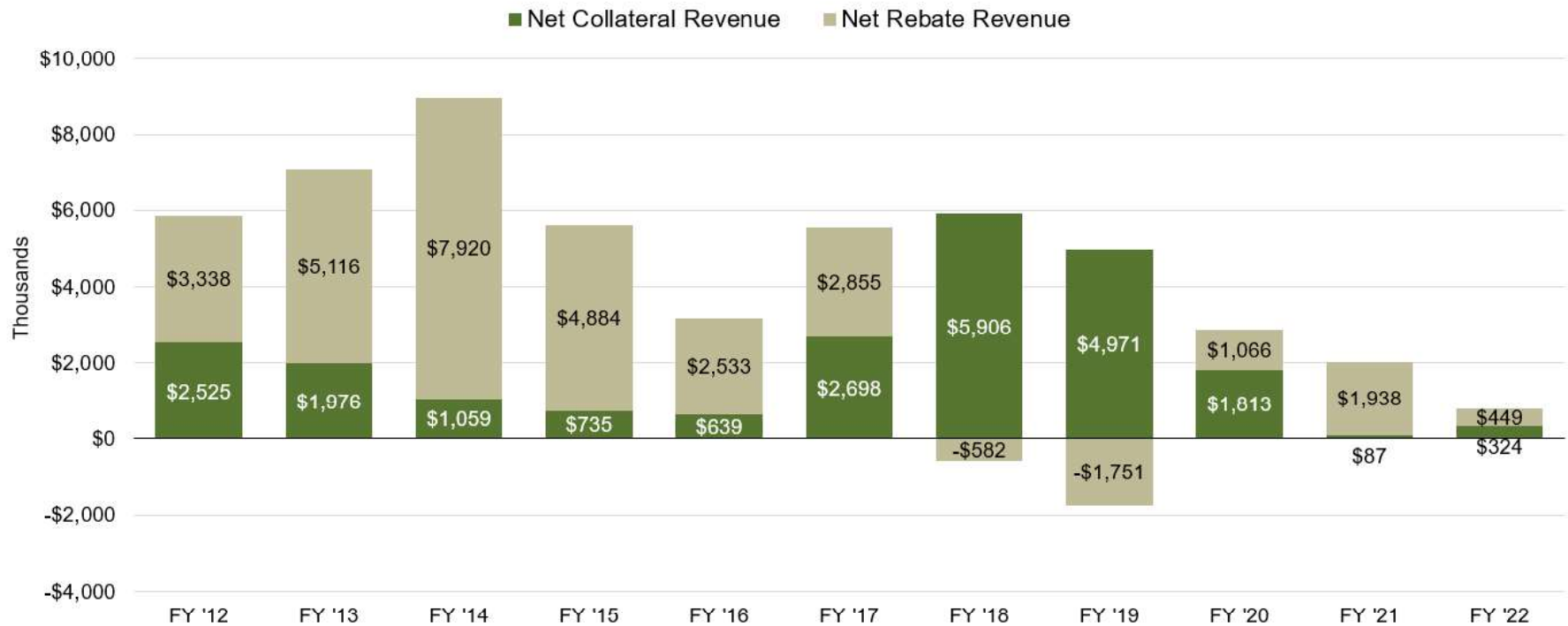
# Securities Lending

## Average Balances





# Securities Lending Annual Revenue

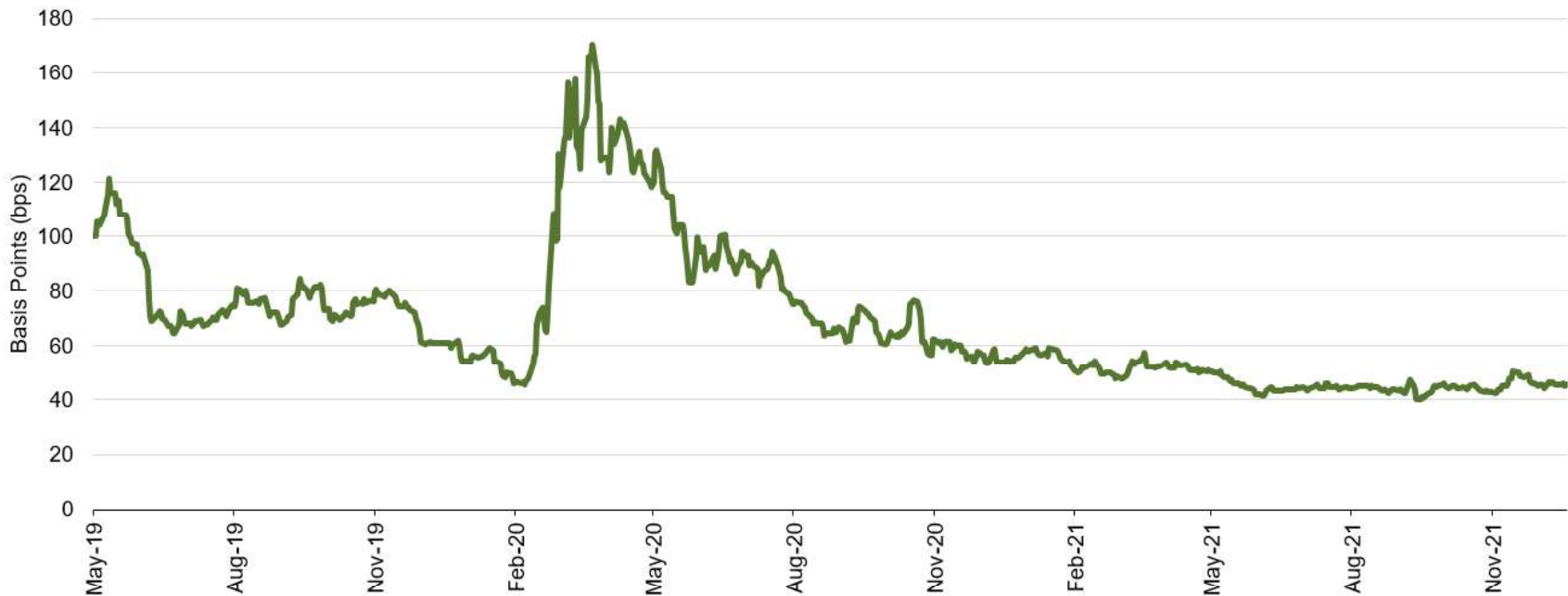


# Securities Lending

## Counterparty Risk



Deutsche Bank 5-Year CDS Spread



Questions?

## Public Agenda Item #18

*Reminder Regarding Future Meetings of the Board of Trustees,  
Investment Advisory Committee, and Audit Committee*

March 9, 2022

# Next Meeting Dates



## 2022 Meeting Dates

Wednesday, March 9, 2022

**Wednesday, May 11, 2022**

Wednesday, August 24, 2022

# Public Agenda Item #19

*Adjournment of the Joint Meeting of the Board of Trustees and  
Investment Advisory Committee*

March 9, 2022

## Public Agenda Item #20

*Recess of the Board of Trustees. Following a temporary recess, the Board of Trustees will reconvene to take up the Board agenda items*

March 9, 2022