

September 29, 2020



**Pennsylvania State Employees'
Retirement System – 401(a) Plan**

Second Quarter 2020

Executive Summary

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Market Environment

Stunning Recovery in Global Equity Markets in 2Q20

V-shaped equity rebound, ahead of the global economy

Global equities rally after March market bottom

- S&P 500 Index was down -33% from peak (02/19/20) to low on 3/23/20
- Sharp rebound since March, suggesting broad-based recovery, but YTD results concentrated in a few stocks
- Fed cut rates to zero, commenced QE, instituted multiple facilities to backstop money markets, credit markets, and economy.
 - Fed expects to get paid back
 - Further fiscal stimulus expected
- Congress passed fiscal stimulus (CARES) to carry the economy through the crisis.
- Economic recovery will be uncertain as COVID-19 infections continue; re-openings may be reversed.

Returns for Periods ended June 30, 2020

	1 Quarter	1 Year	5 Years	10 Years	25 Years
U.S. Equity					
Russell 3000	22.03	6.53	10.03	13.72	9.28
S&P 500	20.54	7.51	10.73	13.99	9.27
Russell 2000	25.42	-6.63	4.29	10.50	8.16
Global ex-U.S. Equity					
MSCI World ex USA	15.34	-5.42	2.01	5.43	4.68
MSCI Emerging Markets	18.08	-3.39	2.86	3.27	--
MSCI ACWI ex USA Small Cap	22.83	-4.34	2.50	6.05	5.51
Fixed Income					
Bloomberg Barclays Aggregate	2.90	8.74	4.30	3.82	5.36
90-day T-Bill	0.02	1.63	1.19	0.64	2.37
Bloomberg Barclays Long Gov/Credit	6.23	18.91	8.98	7.84	7.72
Bloomberg Barclays Global Agg ex-US	3.38	0.71	2.89	1.98	3.73
Real Estate					
NCREIF Property	-0.99	2.69	6.77	9.70	9.15
FTSE Nareit Equity	11.82	-13.04	4.06	9.05	9.48
Alternatives					
CS Hedge Fund	6.20	-0.73	1.55	3.83	7.49
Cambridge Private Equity*	-7.80	2.12	10.39	12.33	14.68
Bloomberg Commodity	5.08	-17.38	-7.69	-5.82	0.75
Gold Spot Price	12.77	27.36	8.97	3.75	6.36
Inflation - CPI-U	-0.12	0.65	1.56	1.69	2.12

*Cambridge PE data through 03/31/20

Sources: Bloomberg, Bloomberg Barclays, Callan, Cambridge, Credit Suisse, FTSE Russell, MSCI, NCREIF, S&P Dow Jones Indices

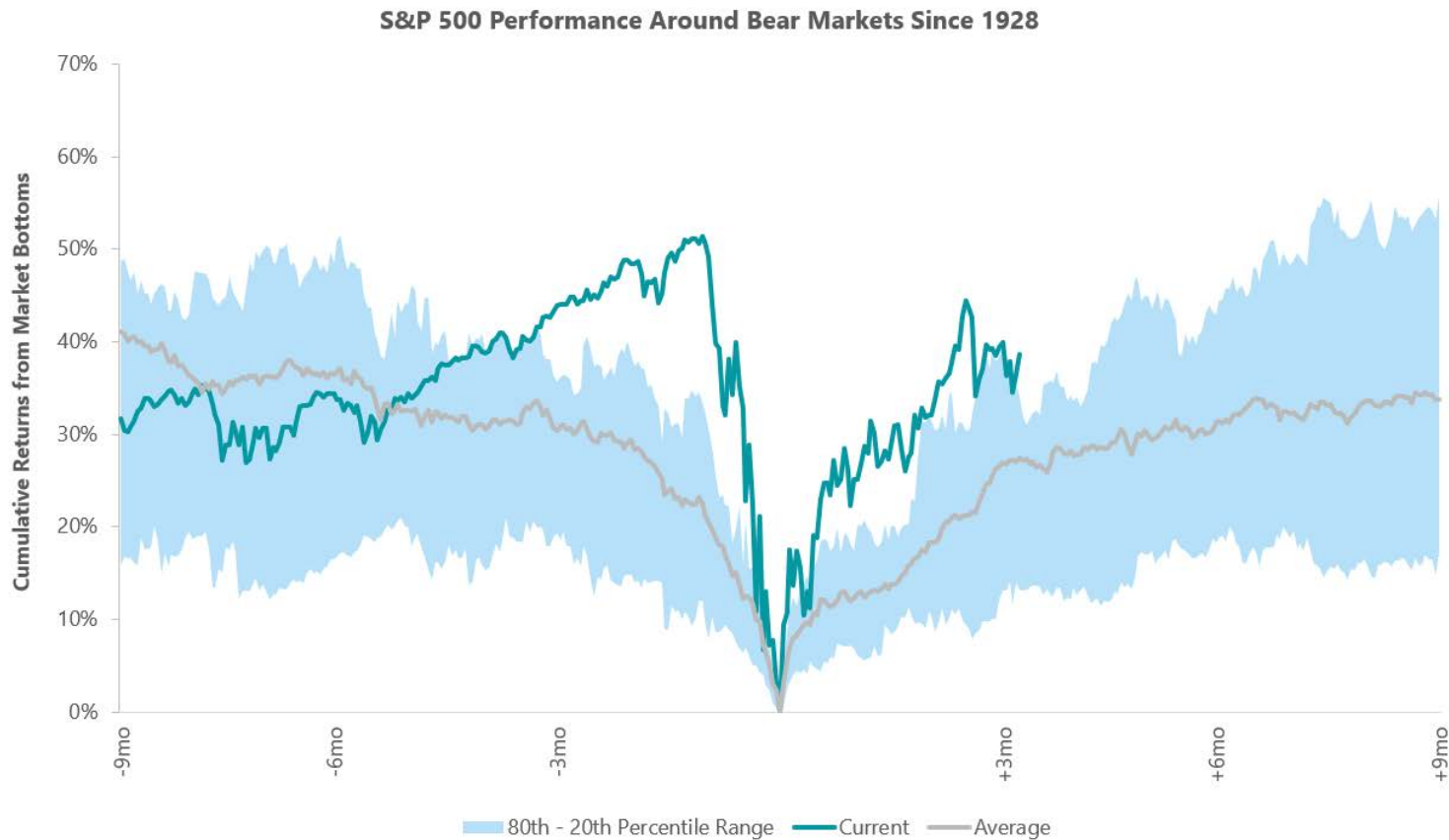
How to Interpret Economic Data in a Global Crisis

New method of evaluation needed

The world changed in a matter of weeks in March 2020

- Spread of coronavirus and containment response around the globe
- U.S. GDP growth tracked at ~2% into the second week of March; 1Q decline concentrated in the last three weeks
 - Three weeks of global lockdown enough to pull 1Q GDP growth down to -5% (annualized)
 - 2Q GDP declined 32.9% (annualized), not seen since the Great Depression
 - Unemployment rate spiked above 12%; consumption could fall by 40% in 2Q.
- Growth rates around a natural disaster lose meaning; levels of economic indicators may be more telling.
 - When do we get back to pre-disaster level of GDP, and employment, income, sales, revenue, and earnings?
 - % change is useful when the economy is gliding up or down through a growth cycle, not so useful when confronted with a shock and a recovery likely to feature false starts and sharp growth. A 35% drop in GDP is unprecedented and terrifying, but a 40% increase on the way back up is just as hard to fathom.
- Borrow a lesson from the Global Financial Crisis
 - Name the current situation, outline its boundaries when possible, and separate analysis to before, during, and after.

The COVID-19 Selloff vs. History



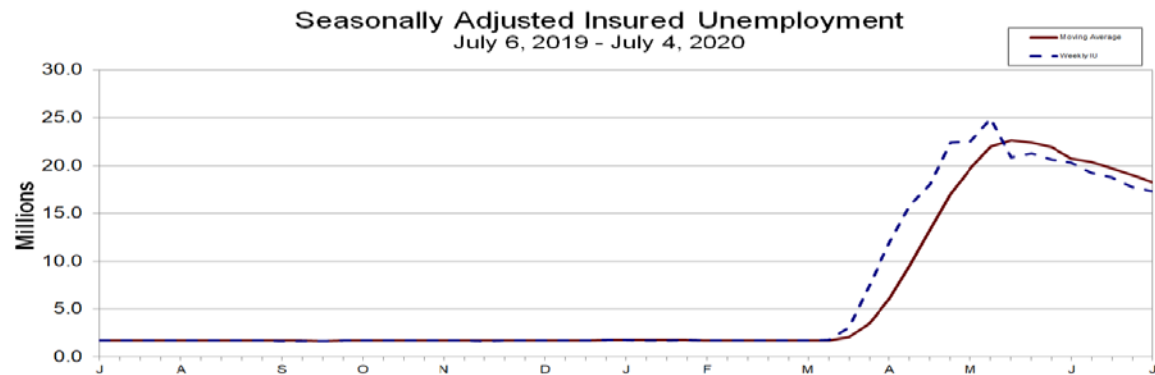
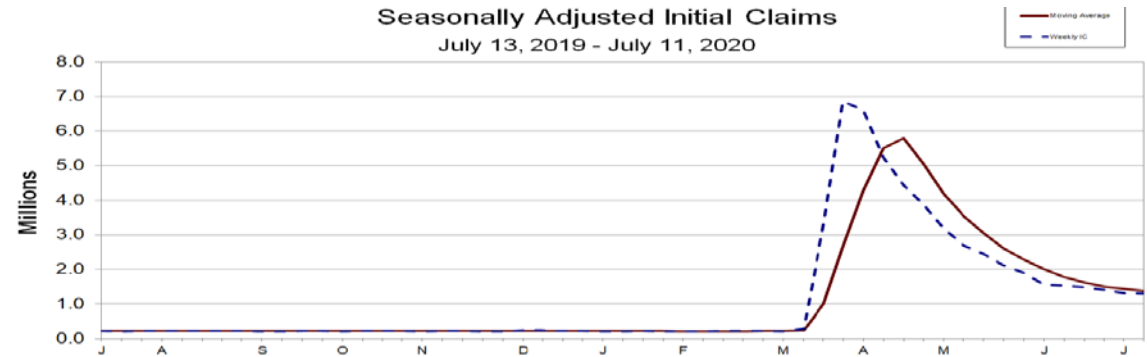
- The speed of the stock market's response to the COVID-19 shutdown, both on the way down and the way up, have been outliers compared to previous bear markets.

Data as of 6/30/20. Source: ClearBridge Investment, FactSet.

U.S. Job Market

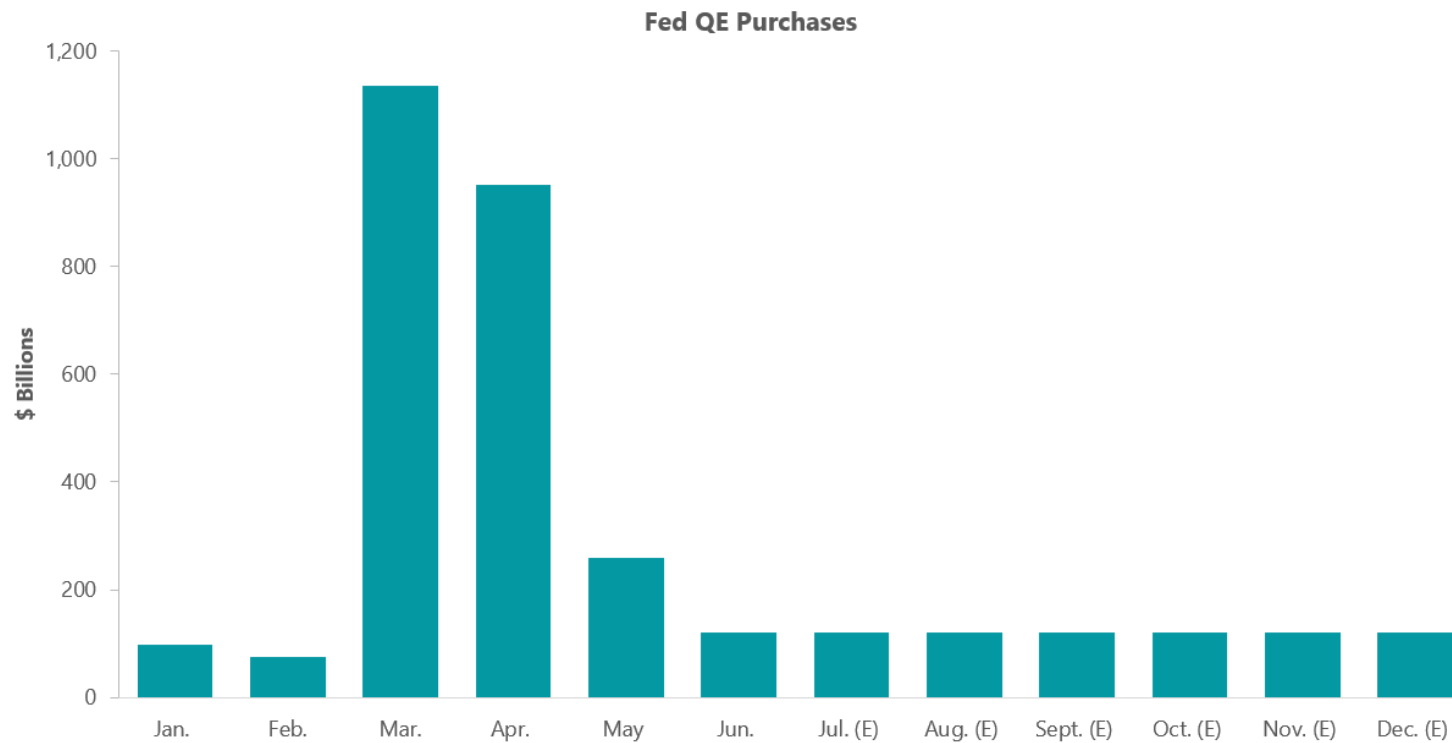
Initial claims and total unemployed

- Spike in initial claims to over 6 million per week in April
- Subsided into June and July
- Over 40 million thrown out of work, from a starting payroll count of 155 million in February
- Job increases (>4 million) surprised on the upside in June.
- Household finances sustained through 2Q20 by expanded unemployment benefits and extra payments



Source: Department of Labor, <https://www.dol.gov/sites/dolgov/files/OPA/newsreleases/ui-claims/20200551.pdf>

Fed Supplied a Tsunami of Liquidity

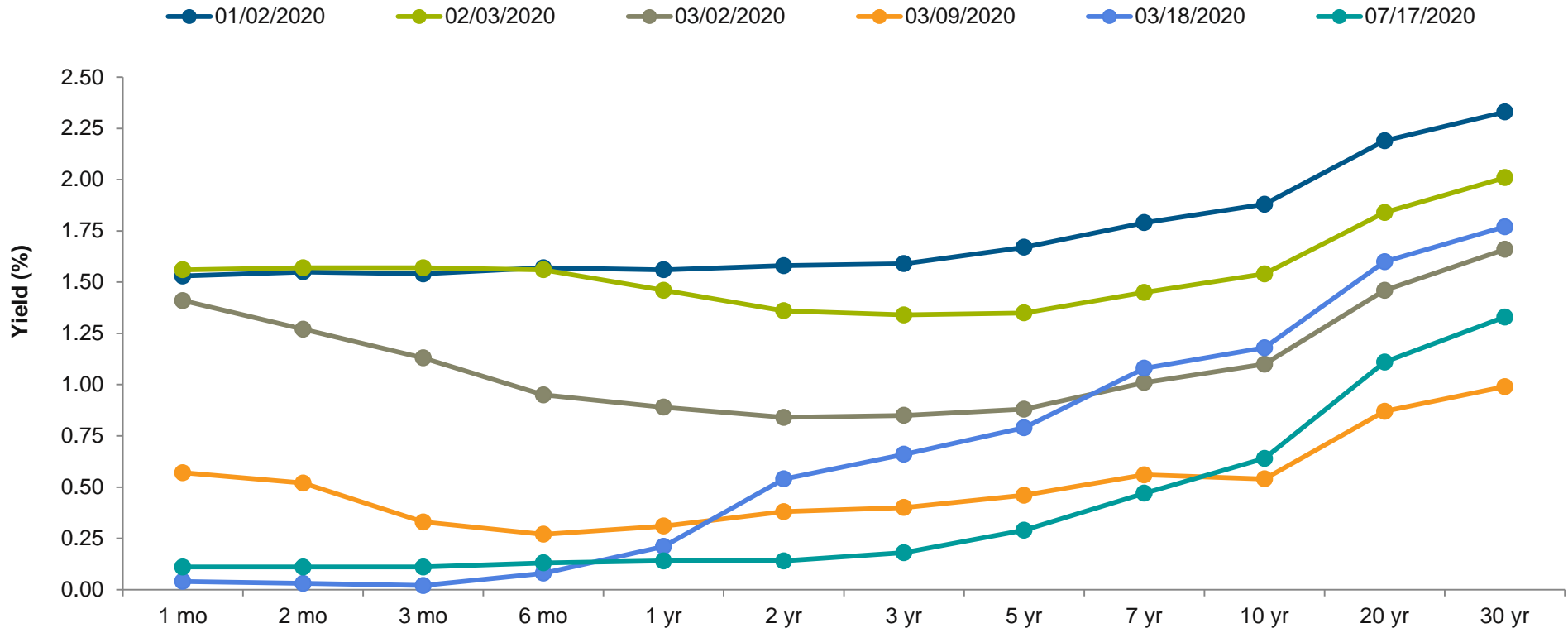


- The Fed's ~\$3T increase in its balance sheet has buoyed markets.
- Going forward, ~\$225B in monthly Treasury issuance will be a liquidity drag vs. \$120B in expected monthly QE.

Sources: ClearBridge Investments, Federal Reserve Bank of New York
(E) represents estimated Fed QE purchases, data as of 6/30/20.

Impact on Financial Markets

Treasury yield curve shape shifting: a moving target



The Treasury yield curve contains an implicit broad economic forecast

- Steeper yield curves (long-term rates higher than short-term rates) suggest stronger anticipated growth.

The shape of the Treasury yield curve has varied quickly and substantially since the beginning of 2020.

- Curve shifted down dramatically early in crisis.
- Current yield curve still low on the short end and upward sloping but not steep

Source: U.S. Department of Treasury

Diversification Remains Key Risk Control

Periodic Table of Investment Returns 2003 – 2Q2020

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2 Qtrs. 2020
U.S. Fixed	Non-U.S. Fixed	Emerging Markets	Emerging Markets	Emerging Markets	Emerging Markets	Emerging Markets	U.S. Fixed	Emerging Markets	Small Cap	Real Estate Funds	Emerging Markets	Small Cap	Large Cap	Real Estate Funds	Small Cap	Emerging Markets	Real Estate Funds	Large Cap	U.S. Fixed
8.43%	22.37%	55.82%	25.55%	34.00%	32.17%	39.38%	5.24%	78.51%	26.85%	14.96%	18.23%	38.82%	13.69%	13.95%	21.31%	37.28%	7.36%	31.49%	6.14%
High Yield	U.S. Fixed	Small Cap	Non-U.S. Equity	Real Estate Funds	Non-U.S. Equity	Real Estate Funds	Non-U.S. Fixed	High Yield	Emerging Markets	U.S. Fixed	Non-U.S. Equity	Large Cap	Real Estate Funds	Large Cap	High Yield	Non-U.S. Equity	Cash Equivalent	Small Cap	Non-U.S. Fixed
5.28%	10.26%	47.25%	20.38%	20.15%	25.71%	14.84%	4.39%	58.21%	18.88%	7.84%	16.41%	32.39%	11.46%	1.38%	17.13%	24.21%	1.87%	25.52%	0.61%
Real Estate Funds	Real Estate Funds	Non-U.S. Equity	Small Cap	Non-U.S. Equity	Small Cap	Hedge Funds	Cash Equivalent	Non-U.S. Equity	Real Estate Funds	High Yield	Small Cap	Non-U.S. Equity	U.S. Fixed	U.S. Fixed	Large Cap	Large Cap	U.S. Fixed	Non-U.S. Equity	Cash Equivalent
4.64%	4.57%	39.42%	18.33%	14.47%	18.37%	12.56%	2.06%	33.67%	15.26%	4.98%	16.35%	21.02%	5.97%	0.55%	11.96%	21.83%	0.01%	22.49%	0.60%
Cash Equivalent	Hedge Funds	High Yield	Non-U.S. Fixed	Hedge Funds	Large Cap	Non-U.S. Equity	Real Estate Funds	Small Cap	High Yield	Non-U.S. Fixed	Large Cap	Real Estate Funds	Small Cap	Cash Equivalent	Emerging Markets	Small Cap	High Yield	Emerging Markets	Real Estate Funds
4.42%	3.04%	28.97%	12.54%	7.61%	15.79%	12.44%	-10.70%	27.17%	15.12%	4.36%	16.00%	12.90%	4.89%	0.05%	11.19%	14.65%	-2.08%	18.44%	-1.01%
Hedge Funds	Cash Equivalent	Large Cap	Real Estate Funds	Large Cap	Real Estate Funds	Non-U.S. Fixed	Hedge Funds	Large Cap	Large Cap	Large Cap	High Yield	Hedge Funds	Hedge Funds	Hedge Funds	Real Estate Funds	Non-U.S. Fixed	Non-U.S. Fixed	High Yield	Large Cap
4.42%	1.78%	28.68%	12.00%	4.91%	15.27%	11.03%	-19.07%	26.47%	15.06%	2.11%	15.81%	9.73%	4.13%	-0.71%	7.79%	10.51%	-2.15%	14.32%	-3.08%
Small Cap	High Yield	Non-U.S. Fixed	High Yield	Small Cap	Hedge Funds	U.S. Fixed	High Yield	Hedge Funds	Hedge Funds	Cash Equivalent	Real Estate Funds	High Yield	High Yield	Non-U.S. Equity	Non-U.S. Equity	High Yield	Hedge Funds	Hedge Funds	Hedge Funds
2.49%	-1.37%	19.36%	11.13%	4.55%	13.86%	6.97%	-26.16%	18.57%	10.95%	0.10%	9.79%	7.44%	2.45%	-3.04%	2.75%	7.50%	-3.19%	9.31%	-3.34%
Emerging Markets	Emerging Markets	Hedge Funds	Large Cap	Cash Equivalent	High Yield	Large Cap	Small Cap	Non-U.S. Fixed	Non-U.S. Equity	Hedge Funds	Hedge Funds	Cash Equivalent	Cash Equivalent	Small Cap	U.S. Fixed	Hedge Funds	Large Cap	U.S. Fixed	High Yield
-2.61%	-6.16%	15.44%	10.88%	3.06%	11.85%	5.49%	-33.79%	7.53%	8.95%	-2.52%	7.67%	0.07%	0.04%	-4.41%	2.65%	7.12%	-4.38%	8.72%	-3.80%
Non-U.S. Fixed	Non-U.S. Equity	Real Estate Funds	Hedge Funds	High Yield	Non-U.S. Fixed	Cash Equivalent	Large Cap	U.S. Fixed	U.S. Fixed	Small Cap	U.S. Fixed	U.S. Fixed	Emerging Markets	High Yield	Non-U.S. Fixed	Real Estate Funds	Small Cap	Non-U.S. Fixed	Emerging Markets
-3.75%	-15.80%	8.28%	9.64%	2.74%	8.16%	5.00%	-37.00%	5.93%	6.54%	-4.18%	4.21%	-2.02%	-2.19%	-4.47%	1.49%	6.66%	-11.01%	5.09%	-9.78%
Large Cap	Small Cap	U.S. Fixed	U.S. Fixed	U.S. Fixed	Cash Equivalent	High Yield	Non-U.S. Equity	Cash Equivalent	Non-U.S. Fixed	Non-U.S. Equity	Non-U.S. Fixed	Emerging Markets	Non-U.S. Fixed	Non-U.S. Fixed	Hedge Funds	U.S. Fixed	Non-U.S. Equity	Real Estate Funds	Non-U.S. Equity
-11.89%	-20.48%	4.10%	4.34%	2.43%	4.86%	1.87%	-43.56%	0.21%	4.95%	-12.21%	4.09%	-2.60%	-3.09%	-6.02%	1.25%	3.54%	-14.09%	4.39%	-11.49%
		Cash Equivalent	Cash Equivalent	Non-U.S. Fixed	U.S. Fixed	Small Cap	Emerging Markets	Real Estate Funds	Cash Equivalent	Emerging Markets	Cash Equivalent	Non-U.S. Fixed	Non-U.S. Equity	Emerging Markets	Cash Equivalent	Cash Equivalent	Emerging Markets	Cash Equivalent	Small Cap
		1.15%	1.33%	-8.65%	4.33%	-1.57%	-53.33%	-30.40%	0.13%	-18.42%	0.11%	-3.08%	-4.32%	-14.92%	0.33%	0.86%	-14.57%	2.28%	-12.98%

- Bloomberg Barclays Corp High Yield ● Bloomberg Barclays Global Aggregate ex US ● Bloomberg Barclays US Aggregate
- Credit Suisse Hedge Fund ● ICE BofAML US 3-Month Treasury Bill ● MSCI Emerging Markets ● MSCI World ex USA
- NFI-ODCE (value-weighted net) ● Russell 2000 ● S&P 500

Department of Labor Guidance

DOL calls for stricter rules around ESG investing in retirement plans

Department of Labor ESG Guidance

- In June, 2020, the Department of Labor (DOL) proposed guidance for considering environmental, social, and governance (ESG) factors in the investment duties of fiduciaries for both defined benefit and defined contribution plans subject to ERISA. In general, the proposed DOL rule seems intended to create a larger hurdle to incorporating ESG factors into ERISA plan investments. The DOL previously provided guidance on ESG in 1994 (then called economically targeted investments), 2008, 2015, and 2018. The full proposal is here: <https://www.govinfo.gov/content/pkg/FR-2020-06-30/pdf/2020-13705.pdf>
- The Employee Benefit Security Administration (“EBSA”), a division of the DOL, has also issued letters to plan sponsors seeking information about the selection and review process for those options. The letter can be seen here: <https://www.napa-net.org/sites/napa-net.org/files/DOL%20ESG%20Enforcement%20Investigations%20-%20Redacted%20Info%20Request.pdf>

Department of Labor Guidance

DOL calls for stricter rules around ESG investing in retirement plans

Bottom Line

In its proposed rule, the DOL reiterates the duties of prudence and loyalty to beneficiaries in selecting and monitoring investments that will not be news to any fiduciaries.

Consideration of financially material ESG factors still appear to be deemed prudent, though the proposal narrowly defines what can be considered material ESG factors.

Moreover, this DOL guidance assigns a higher burden on plan sponsors to determine and document when investments are economically indistinguishable from one another and, thus, non-financial matters can be considered as tiebreakers, stating that these circumstances are “very rare.”

The proposal also provides new guidance on selecting and monitoring investment options for DC plans in which proposed options incorporate ESG considerations. The selection and monitoring should be based solely on objective risk and return characteristics, not any “non-pecuniary” objectives.

This proposed rule explicitly states that the QDIA in an ERISA DC plan should not incorporate ESG considerations, applying a higher standard to investments that serve as a default and stating that incorporating ESG factors in the QDIA could violate the duty of loyalty. The document states that this “is intended to help ensure that the financial interests of plan participants and beneficiaries in retirement benefits remain paramount by removing ESG considerations in cases in which participant’s retirement savings in individual accounts designed for participant direction are being automatically invested by a plan fiduciary.”

Of Note:

This rule was proposed during a presidential election year and is subject to a 30-day comment period that ended on July 30, 2020 and a revision process, which could impact its ultimate composition and enforcement. The DOL received over 8,000 comments (including form letters), which it is required to read and consider before finalizing a rule.

ESG Investment Options

Considerations and next steps

- Plan decisions related to investment options that incorporate ESG factors may differ based on whether or not the plan is subject to ERISA; plan sponsors should review how this proposed ERISA rule impacts their plan with their legal counsel.
- If a plan does offer a dedicated ESG option:
 - Callan’s view is that the plan can continue to offer the option, pending the outcome of the proposed DOL rule and legal review. The proposed rule indicates that a plan is on sound footing if the option is incorporating material ESG factors where the option was selected and is monitored strictly based on financial risk-reward objectives, as long as it is not the QDIA.
- If a plan does not offer a dedicated ESG option:
 - Consider reviewing and document whether and, if so, how the managers of the plan’s current investment options integrate material ESG factors into their investment process
 - Committee/Board to decide whether to explore offering an ESG integrated investment option in the plan
 - If there is an interest, then decide on parameters of a manager search, starting with:
 - *What Asset Class?*
 - *Active or Passive? Or, review both?*
 - If there is not an interest, participants may pursue options through the brokerage window, if offered

Defined Contribution Industry Developments: 2Q20

DOL Private Equity Letter

- The DOL issued a letter in response to an inquiry about the DOL's views on DC plans' employment of private equity (PE) within designated investment alternatives.
 - *The letter, issued on June 3, stated that DC plan sponsors considering the inclusion of PE in their plan (in a multi-asset framework) must adhere to the same standards and weigh the same considerations that they would for other asset classes.*
 - *The letter reminds plan sponsors that the inclusion of PE must stem from a prudent selection and monitoring process that considers all relevant facts, including liquidity/valuation, diversification, and capacity.*
- For participant-directed plans, the fiduciary must also determine whether participants will be provided adequate information regarding the characteristics and risks of the investment alternative to enable them to make an informed assessment regarding making or continuing an investment in the fund.

Trends and Best Practices

- The integration of PE within target date fund glidepaths has been very slow to occur: only 1% of custom target date funds employ PE, according to the Custom Target Date Fund Survey published by DCIIA in May 2020.
- Private equity poses various challenges for DC plan sponsors that could lead to additional litigation risk. Such challenges include: Fees, Illiquidity, and limited investment vehicles and track records.
- Private equity may one day play a prominent role in asset allocation options within DC plans. However, it will take additional time and evolution within the DC landscape for the asset class to gain broad acceptance and adoption given the mismatch between a daily valued plan environment with daily liquidity, and the illiquid nature of PE investments.

Defined Contribution Industry Developments: 2Q20

Legal Trends

- Callan reviewed 29 complaints filed during the first two quarters of 2020
 - *The median assets were \$1.6 billion and the average participant count was 19,000*
 - *85% of the lawsuits challenged fund selections, with 75% focused on target date funds*
 - *75% challenged recordkeeping fees*
 - *New trends included managed accounts, indirect compensation, and fraud/participant loss*
- There were 12 law firms representing the 29 new complaints
- Eight complaints were settled during the first two quarters of 2020
 - *The median settlement was \$10.6 million*
 - *The median plan size was \$1.9 billion and averaged 38,000 participants*
 - *The average time to settlement was 3.4 years*

Trends and Best Practices

The continued litigation in the face of the pandemic reinforces the need to continue managing and reviewing fees, funds, and services. Plan sponsors should continue to carefully monitor investment options, review plan fees, and follow any written governance documentation, including the investment policy statement (IPS). Additionally, plan fiduciaries should document the process and decisions made around vendor selection and fees to demonstrate their due diligence.

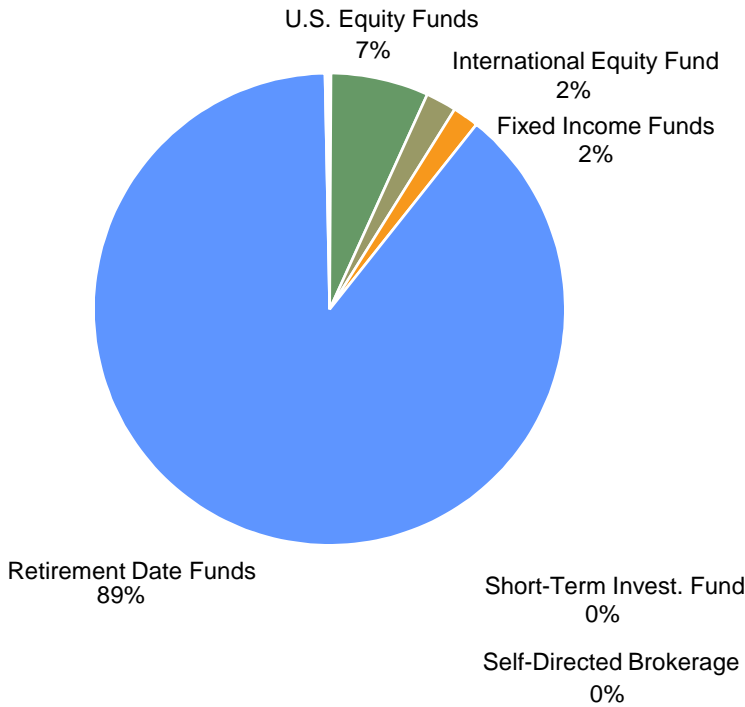
Callan

PA SERS 401(a) Plan Performance Review

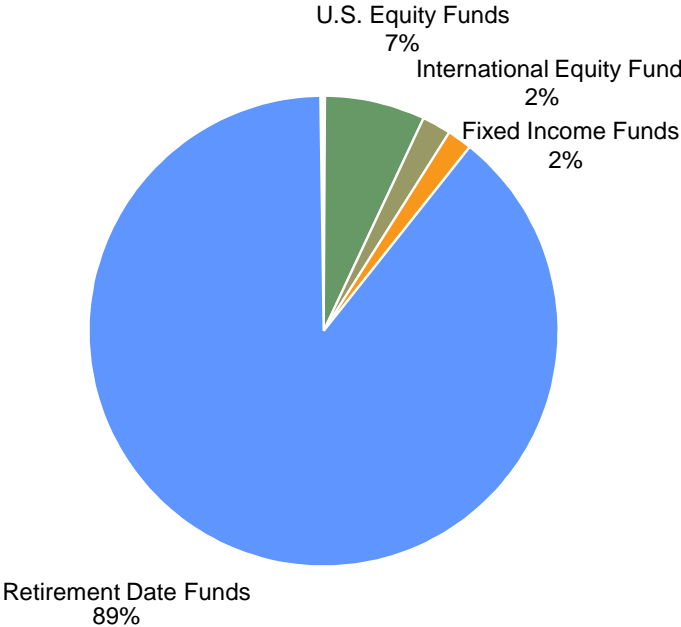
401(a) Plan Asset Allocation & Contributions

As of June 30, 2020

Asset Allocation



Contributions



Asset Allocation

As of June 30, 2020

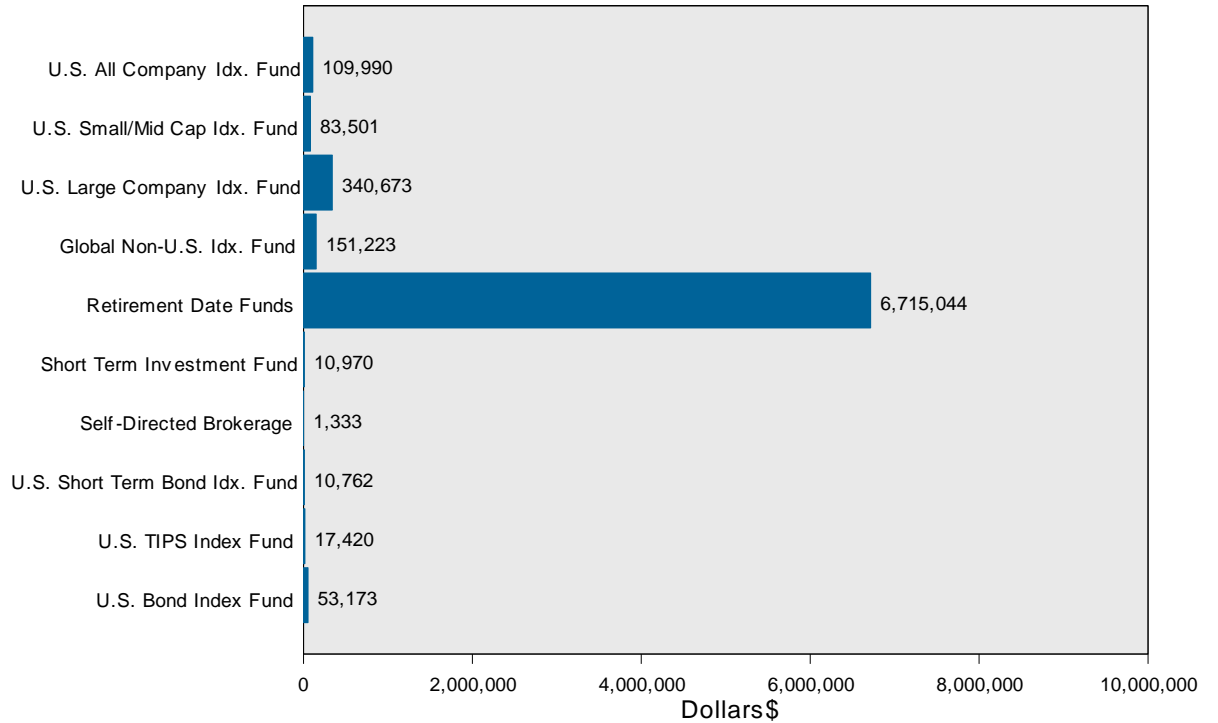
	June 30, 2020			March 31, 2020		
	Market Value	% of Total	Net New Inv.	Inv. Return	Market Value	% of Total
SERS Retirement Date Funds	\$16,461,764	89.17%	\$4,713,555	\$2,001,489	\$9,746,720	88.88%
SERS Post Retirement Fund	319,868	1.73%	84,435	23,857	211,576	1.93%
SERS 2025 Retirement Fund	802,818	4.35%	233,769	69,042	500,006	4.56%
SERS 2030 Retirement Fund	1,978,021	10.71%	669,240	175,157	1,133,624	10.34%
SERS 2035 Retirement Fund	1,550,344	8.40%	533,531	164,988	851,824	7.77%
SERS 2040 Retirement Fund	1,628,394	8.82%	465,655	198,866	963,873	8.79%
SERS 2045 Retirement Fund	2,318,563	12.56%	502,403	316,510	1,499,650	13.68%
SERS 2050 Retirement Fund	2,320,260	12.57%	631,325	314,284	1,374,651	12.54%
SERS 2055 Retirement Fund	2,154,528	11.67%	631,933	286,347	1,236,247	11.27%
SERS 2060 Retirement Fund	2,213,652	11.99%	630,833	296,286	1,286,534	11.73%
SERS 2065 Retirement Fund	1,175,318	6.37%	330,431	156,151	688,735	6.28%
SERS U.S. Equity	\$1,236,126	6.70%	\$361,539	\$172,625	\$701,962	6.40%
SERS U.S. Large Company Idx Fund	830,991	4.50%	228,469	112,204	490,317	4.47%
SERS U.S. All Company Idx Fund	261,411	1.42%	72,160	37,830	151,422	1.38%
SERS U.S. SMID Company Idx Fund	143,724	0.78%	60,910	22,591	60,223	0.55%
International Equity						
SERS Global Non-U.S. Index Fund	389,489	2.11%	103,946	47,277	238,265	2.17%
SERS Fixed Income	\$340,839	1.85%	\$85,345	\$6,981	\$248,514	2.27%
SERS Short Term Investment Fund	32,259	0.17%	10,932	38	21,289	0.19%
SERS U.S. Short Term Bond Idx Fund	43,293	0.23%	10,362	400	32,531	0.30%
SERS U.S. TIPS Index Fund	45,835	0.25%	16,031	1,389	28,415	0.26%
SERS U.S. Bond Index Fund	219,451	1.19%	48,020	5,153	166,278	1.52%
Self-Directed Brokerage						
SERS Self-Directed Brokerage	32,089	0.17%	0	1,333	30,756	0.28%
Total Fund	\$18,460,307	100.0%	\$5,264,385	\$2,229,704	\$10,966,218	100.0%

Changes in Market Values and Contributions

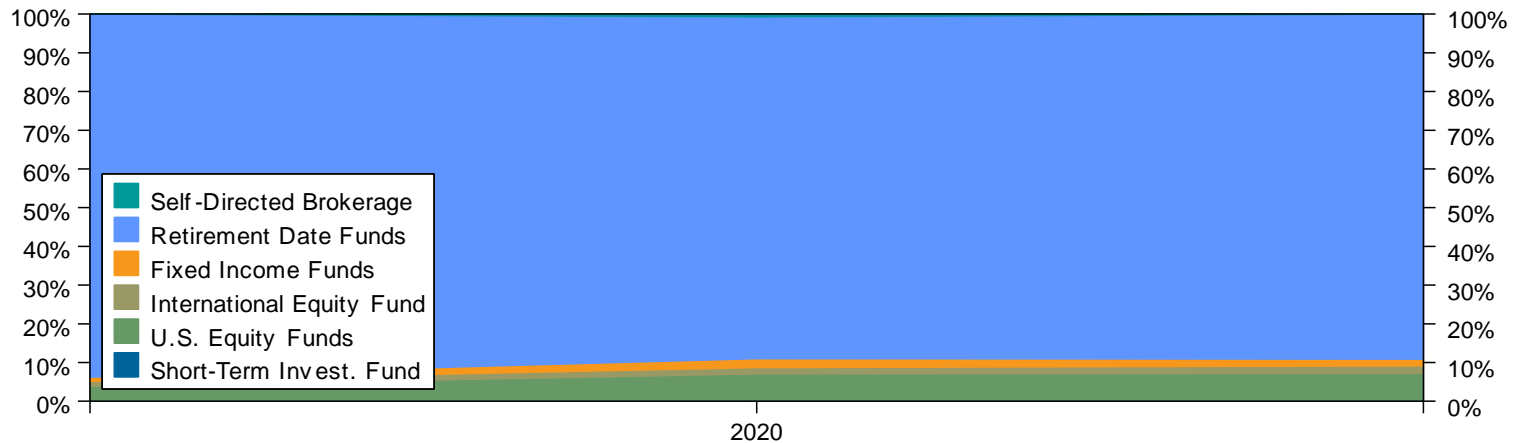
As of June 30, 2020

The chart to the right shows the net change in fund values across the various investment options for the quarter. The change in value for each fund is the result of:

1. Investment returns;
2. Participant contributions, employer match, distributions, withdrawals; and
3. Transfers between funds by participants.



Historical Allocation of Contributions



Cumulative Performance - Net of Fees

As of June 30, 2020

	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance					
Target Date Funds					
SERS Post Retirement Fund	9.54%	1.07%	6.15%	5.85%	5.23%
BlackRock Post Retirement Index	9.47%	0.96%	6.02%	5.80%	5.19%
Callan Tgt Date 2000-2010	8.97%	0.40%	4.95%	5.35%	5.11%
SERS 2025 Retirement Fund	11.57%	(1.06%)	4.88%	6.08%	5.77%
BlackRock 2025 Index	11.49%	(1.19%)	4.75%	5.99%	5.69%
Callan Target Date 2025	12.32%	(1.61%)	4.27%	5.72%	5.68%
SERS 2030 Retirement Fund	13.51%	(2.79%)	3.89%	6.10%	5.98%
BlackRock 2030 Index	13.44%	(2.91%)	3.73%	5.99%	5.87%
Callan Target Date 2030	13.82%	(2.73%)	3.88%	5.91%	5.98%
SERS 2035 Retirement Fund	15.37%	(4.37%)	2.93%	6.11%	6.19%
BlackRock 2035 Index	15.33%	(4.46%)	2.81%	6.00%	6.05%
Callan Target Date 2035	15.76%	(3.62%)	3.18%	5.94%	6.11%
SERS 2040 Retirement Fund	17.13%	(5.84%)	2.04%	6.09%	6.33%
BlackRock 2040 Index	17.08%	(5.93%)	1.93%	5.97%	6.18%
Callan Target Date 2040	17.14%	(4.75%)	2.48%	5.85%	6.22%
SERS 2045 Retirement Fund	18.48%	(6.74%)	1.50%	6.06%	6.41%
BlackRock 2045 Index	18.41%	(6.86%)	1.34%	5.90%	6.23%
Callan Target Date 2045	18.20%	(5.43%)	2.19%	5.85%	6.29%
SERS 2050 Retirement Fund	19.11%	(7.16%)	1.22%	6.02%	6.42%
BlackRock 2050 Index	19.05%	(7.24%)	1.13%	5.88%	6.25%
Callan Target Date 2050	18.46%	(5.79%)	1.89%	5.76%	6.28%
SERS 2055 Retirement Fund	19.20%	(7.16%)	1.24%	6.02%	6.41%
BlackRock 2055 Index	19.15%	(7.29%)	1.12%	5.88%	6.25%
Callan Target Date 2055	18.73%	(6.04%)	1.69%	5.78%	6.28%
SERS 2060 Retirement Fund	19.19%	(7.17%)	1.23%	6.00%	6.41%
BlackRock 2060 Index	19.15%	(7.28%)	1.13%	5.88%	6.28%
Callan Target Date 2060	18.71%	(6.07%)	1.71%	5.86%	6.58%
SERS 2065 Retirement Fund	19.08%	(7.26%)	-	-	-
BlackRock 2065 Index	19.15%	(7.28%)	-	-	-

Note: SERS Funds are the top fund in each grouping followed by each fund's respective benchmark and median peer.

Cumulative Performance - Net of Fees

As of June 30, 2020

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
Net Performance				
Target Date Funds				
SERS Post Retirement Fund	5.47%	6.19%	-	-
BlackRock Post Retirement Index	5.43%	6.15%	5.40%	5.50%
Callan Tgt Date 2000-2010	5.58%	6.52%	4.85%	-
SERS 2025 Retirement Fund	6.41%	7.72%	-	-
BlackRock 2025 Index	6.34%	7.63%	5.84%	4.69%
Callan Target Date 2025	6.67%	8.34%	5.82%	-
SERS 2030 Retirement Fund	6.76%	8.20%	-	-
BlackRock 2030 Index	6.65%	8.09%	6.00%	4.63%
Callan Target Date 2030	7.10%	8.83%	5.99%	4.12%
SERS 2035 Retirement Fund	7.06%	8.64%	-	-
BlackRock 2035 Index	6.95%	8.50%	6.12%	4.55%
Callan Target Date 2035	7.41%	9.16%	6.26%	-
SERS 2040 Retirement Fund	7.32%	9.01%	-	-
BlackRock 2040 Index	7.18%	8.85%	6.21%	4.44%
Callan Target Date 2040	7.58%	9.44%	6.37%	3.58%
SERS 2045 Retirement Fund	7.51%	9.32%	-	-
BlackRock 2045 Index	7.35%	9.15%	6.27%	4.38%
Callan Target Date 2045	7.63%	9.44%	6.85%	-
SERS 2050 Retirement Fund	7.62%	9.57%	-	-
BlackRock 2050 Index	7.47%	9.40%	6.46%	4.82%
Callan Target Date 2050	7.67%	9.62%	5.94%	-
SERS 2055 Retirement Fund	7.70%	9.70%	-	-
BlackRock 2055 Index	7.55%	9.53%	-	-
Callan Target Date 2055	7.79%	9.64%	-	-

Note: SERS Funds are the top fund in each grouping followed by each fund's respective benchmark and median peer.

Funds not listed do not have longer term history.

Cumulative Performance - Net of Fees

As of June 30, 2020

	Last Quarter	Year to Date	Last Year	Last 3 Years	Last 5 Years
Net Performance					
Domestic Equity					
SERS U.S. Large Company Index Fund	20.56%	(3.06%)	7.53%	10.75%	10.75%
S&P 500 Index	20.54%	(3.08%)	7.51%	10.73%	10.73%
Callan Lg Cap Broad MF	20.75%	(3.30%)	6.71%	10.00%	9.58%
SERS U.S. All Company Index Fund	21.94%	(3.15%)	6.49%	10.00%	10.00%
Russell 3000 Index	22.03%	(3.48%)	6.53%	10.04%	10.03%
Callan Multi Cap Brd MF	21.67%	(5.26%)	2.77%	7.41%	7.33%
SERS U.S. SMID Company Idx Fund	30.96%	(5.73%)	1.05%	6.45%	6.77%
Dow Jones US Completion	31.12%	(5.60%)	1.05%	6.31%	6.59%
Callan SMID Broad MFs	25.92%	(5.90%)	0.94%	8.13%	7.44%
International Equity					
SERS Global Non-U.S. Index Fund	17.31%	(10.53%)	(4.43%)	1.47%	2.58%
MSCI ACWI ex US	16.12%	(11.00%)	(4.80%)	1.14%	2.26%
Callan Non US Equity MFs	17.85%	(9.06%)	(2.32%)	1.04%	2.36%
Domestic Fixed Income					
SERS Short Term Investment Fund	0.15%	0.55%	1.63%	1.85%	1.34%
3-month Treasury Bill	0.02%	0.60%	1.63%	1.77%	1.19%
Callan Cash Database(1)	0.44%	0.78%	1.95%	2.05%	1.50%
SERS U.S. Short Term Bond Idx Fund	1.17%	2.93%	4.25%	-	-
Blmbg Gov/Cred 1-3 Yr	1.17%	2.88%	4.20%	2.87%	2.11%
Callan Short US Govt MFs	0.52%	3.17%	3.99%	2.58%	1.84%
SERS U.S. TIPS Index Fund	4.23%	6.01%	8.26%	-	-
Blmbg US TIPS	4.24%	6.01%	8.28%	5.05%	3.75%
Callan TIPS MFs	4.94%	5.06%	7.11%	4.61%	3.26%
SERS U.S. Bond Index Fund	2.89%	6.24%	8.82%	5.34%	4.29%
Blmbg Aggregate	2.90%	6.14%	8.74%	5.32%	4.30%
Callan Core Bond MFs	4.89%	6.02%	8.53%	5.31%	4.39%

(1) Callan Cash Database includes STIF, enhanced cash, and money market funds.

Cumulative Performance - Net of Fees

As of June 30, 2020

	Last 7 Years	Last 10 Years	Last 15 Years	Last 20 Years
Net Performance				
Domestic Equity				
SERS U.S. Large Company Index Fund	12.14%	14.01%	8.87%	5.97%
S&P 500 Index	12.13%	13.99%	8.83%	5.91%
Callan Lg Cap Broad MF	11.47%	13.12%	8.64%	5.88%
SERS U.S. All Company Index Fund	11.67%	-	-	-
Russell 3000 Index	11.68%	13.72%	8.78%	6.15%
Callan Multi Cap Brd MF	9.66%	11.76%	7.74%	6.27%
SERS U.S. SMID Company Idx Fund	9.37%	12.39%	8.78%	7.13%
Dow Jones US Completion	9.20%	12.18%	8.58%	6.80%
Callan SMID Broad MFs	9.18%	12.25%	8.76%	8.02%
International Equity				
SERS Global Non-U.S. Index Fund	3.98%	5.23%	-	-
MSCI ACWI ex US	3.71%	4.97%	4.44%	-
Callan Non US Equity MFs	4.15%	6.14%	4.53%	3.46%
Domestic Fixed Income				
SERS Short Term Investment Fund	1.00%	0.77%	1.52%	-
3-month Treasury Bill	0.86%	0.64%	1.34%	1.66%
Callan Cash Database(1)	1.18%	0.96%	1.74%	2.03%
Blmbg Gov/Cred 1-3 Yr	1.80%	1.63%	2.59%	3.19%
Callan Short US Govt MFs	1.56%	1.45%	2.47%	3.15%
Blmbg US TIPS	3.05%	3.52%	4.00%	5.47%
Callan TIPS MFs	2.62%	2.98%	3.67%	4.96%
SERS U.S. Bond Index Fund	3.94%	3.78%	4.36%	5.11%
Blmbg Aggregate	3.96%	3.82%	4.39%	5.14%
Callan Core Bond MFs	3.97%	4.08%	4.63%	5.17%

(1) Callan Cash Database includes STIF, enhanced cash, and money market funds.

*Funds not listed do not have longer term history.

Performance Summary & Expense Ratios as of June 30, 2020

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	10 Year Return	5 Year Return Consistency	5 Year Risk Quadrant	Expense Ratio
Net of Fee Performance									
Target Date Funds									
SERS Post Retirement Fund Callan Tgt Date Ret Inc	9.5 27	6.2 16	5.8 8	5.2 10	5.5 14	6.2 19			0.07 97
BlackRock Post Retirement Index	9.5 28	6.0 19	5.8 9	5.2 11	5.4 15	6.1 19			
SERS 2025 Retirement Fund Callan Target Date 2025	11.6 69	4.9 28	6.1 30	5.8 43	6.4 59	7.7 69			0.07 97
BlackRock 2025 Index	11.5 70	4.8 34	6.0 37	5.7 48	6.3 63	7.6 71			
SERS 2030 Retirement Fund Callan Target Date 2030	13.5 55	3.9 50	6.1 37	6.0 50	6.8 66	8.2 70			0.07 98
BlackRock 2030 Index	13.4 57	3.7 52	6.0 43	5.9 56	6.6 69	8.1 73			
SERS 2035 Retirement Fund Callan Target Date 2035	15.4 59	2.9 60	6.1 38	6.2 47	7.1 65	8.6 71			0.07 98
BlackRock 2035 Index	15.3 61	2.8 62	6.0 48	6.1 56	6.9 68	8.5 75			
SERS 2040 Retirement Fund Callan Target Date 2040	17.1 50	2.0 62	6.1 35	6.3 43	7.3 63	9.0 63			0.07 98
BlackRock 2040 Index	17.1 52	1.9 64	6.0 45	6.2 51	7.2 72	8.9 68			
SERS 2045 Retirement Fund Callan Target Date 2045	18.5 42	1.5 62	6.1 37	6.4 42	7.5 58	9.3 55			0.07 98
BlackRock 2045 Index	18.4 44	1.3 65	5.9 47	6.2 52	7.3 70	9.1 65			
SERS 2050 Retirement Fund Callan Target Date 2050	19.1 24	1.2 59	6.0 38	6.4 42	7.6 53	9.6 51			0.07 98
BlackRock 2050 Index	19.0 28	1.1 59	5.9 44	6.2 52	7.5 68	9.4 61			
SERS 2055 Retirement Fund Callan Target Date 2055	19.2 28	1.2 58	6.0 37	6.4 43	7.7 55	9.7 48			0.07 98
BlackRock 2055 Index	19.1 31	1.1 59	5.9 46	6.2 52	7.6 63	9.5 55			
SERS 2060 Retirement Fund Callan Target Date 2060	19.2 28	1.2 58	6.0 44	6.4 56					0.07 98
BlackRock 2060 Index	19.1 31	1.1 59	5.9 49	6.3 62					

Returns:
■ above median
■ third quartile
■ fourth quartile

Return Consistency:
■ above median
■ third quartile
■ fourth quartile

Risk Quadrant:

 Return
 Risk

Expense Ratio:
■ below median
■ second quartile
■ first quartile

Note: For returns, each SERS Fund and corresponding benchmark return are shown with their respective peer group rankings. For returns, lower peer group rankings are more desirable (e.g. 25th percentile equates to top quartile performance). Expense Ratio: Higher peer group rankings are more desirable (e.g. 75th percentile equates to bottom quartile/cheapest fees).

Performance Summary & Expense Ratios as of June 30, 2020

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	10 Year Return	5 Year Return Consistency	5 Year Risk Quadrant	Expense Ratio
SERS 2065 Retirement Fund Callan Target Date 2065	19.1 32								0.07 83
BlackRock 2065 Index	19.1 29								
Domestic Equity									
SERS U.S. Large Company Stock Index Fund Callan Lg Cap Broad MF	20.6 52	7.5 47	10.7 47	10.7 44	12.1 43	14.0 41			0.02 99
S&P 500 Index	20.5 52	7.5 47	10.7 47	10.7 44	12.1 43	14.0 42			
SERS U.S. All Company Index Fund Callan Multi Cap Brd MF	21.9 48	6.5 38	10.0 39	10.0 31	11.7 33				0.03 99
Russell 3000 Index	22.0 47	6.5 38	10.0 39	10.0 31	11.7 33	13.7 29			
U.S. Small/Mid Company Stock Index Fund Callan SMID Broad MFs	31.0 34	1.1 50	6.4 57	6.8 52	9.4 49	12.4 47			0.03 100
Dow Jones US Completion	31.1 34	1.0 50	6.3 57	6.6 52	9.2 50	12.2 50			
International Equity									
SERS Global Non-U.S. Index Fund Callan Non US Equity MFs	17.3 59	-4.4 58	1.5 49	2.6 48	4.0 53	5.2 63			0.06 99
MSCI ACWI ex US	16.1 70	-4.8 59	1.1 50	2.3 52	3.7 60	5.0 70			
Domestic Fixed Income									
SERS Short Term Investment Fund Callan Cash Database	0.1 82	1.6 80	1.8 81	1.3 80	1.0 82	0.8 82			0.00 100
3-month Treasury Bill	0.0 98	1.6 80	1.8 82	1.2 92	0.9 93	0.6 96			
Comments: Callan Cash Database includes STIF, enhanced cash, and money market funds.									
SERS U.S. Short Term Bond Idx Fund Callan Short US Govt MFs	1.2 19	4.2 44							0.03 99
Blmbg Gov/Cred 1-3 Yr	1.2 19	4.2 44	2.9 26	2.1 15	1.8 31	1.6 35			
SERS U.S. TIPS Index Fund Callan TIPS MFs	4.2 70	8.3 25							0.03 97
Blmbg US TIPS	4.2 70	8.3 24	5.0 19	3.7 23	3.0 20	3.5 17			

Returns:
■ above median
■ third quartile
■ fourth quartile

Return Consistency:
■ above median
■ third quartile
■ fourth quartile

Risk Quadrant:

 Return
 Risk

Expense Ratio:
■ below median
■ second quartile
■ first quartile

Note: For returns, each SERS Fund and corresponding benchmark return are shown with their respective peer group rankings. For returns, lower peer group rankings are more desirable (e.g. 25th percentile equates to top quartile performance). Expense Ratio: Higher peer group rankings are more desirable (e.g. 75th percentile equates to bottom quartile/cheapest fees).

Performance Summary & Expense Ratios as of June 30, 2020

Investment Manager	Last Quarter Return	Last Year Return	3 Year Return	5 Year Return	7 Year Return	10 Year Return	5 Year Return Consistency	5 Year Risk Quadrant	Expense Ratio
SERS U.S. Bond Index Fund	2.9 ⁹³	8.8 ⁴¹	5.3 ⁴⁷	4.3 ⁵⁸	3.9 ⁵⁴	3.8 ⁸⁶			0.03 ⁹⁸
Callan Core Bond MFs									
Bimbg Aggregate	2.9 ⁹³	8.7 ⁴²	5.3 ⁴⁸	4.3 ⁵⁷	4.0 ⁵²	3.8 ⁸⁰			

Returns:
 above median
 third quartile
 fourth quartile

Return Consistency:
 above median
 third quartile
 fourth quartile

Risk Quadrant:
 above median
 third quartile
 fourth quartile

Expense Ratio:
 below median
 second quartile
 first quartile

Note: For returns, each SERS Fund and corresponding benchmark return are shown with their respective peer group rankings. For returns, lower peer group rankings are more desirable (e.g. 25th percentile equates to top quartile performance). Expense Ratio: Higher peer group rankings are more desirable (e.g. 75th percentile equates to bottom quartile/cheapest fees).

401(a) Plan Investment Structure

Lineup Mapped to Callan's Clean Sheet



Defined Contribution and Deferred Compensation Projects for 2020

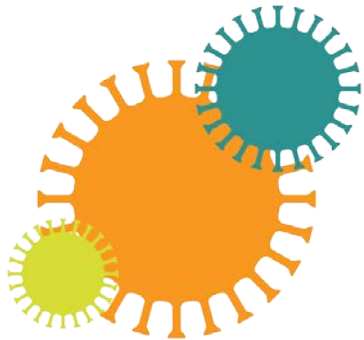
- Plan Administration and Investment Management Fee Evaluation Study
- Target Date Fund Suitability Analysis
- Investment Policy Statement Review

Callan

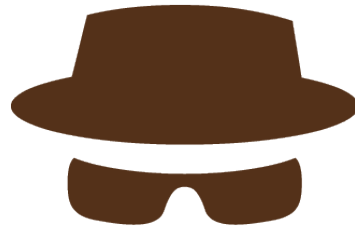
Appendix – Callan Update

Published Research Highlights from 2Q20

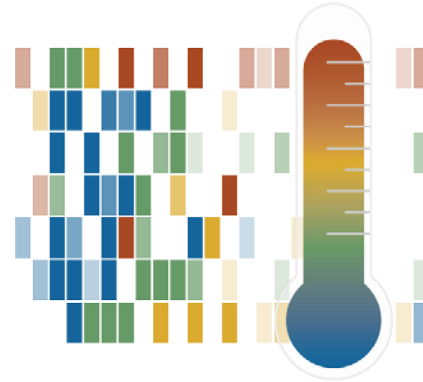
Coping with
COVID-19: Investment
Manager Survey



Breaking Bad: Better Call
Hedge Funds?



Real Estate Indicators: Too
Hot to Touch or Cool
Enough to Handle?



Pandemic Reshapes the
Outlook for Farmland
Investments



Recent Blog Posts

Callan Survey:
DC Plan
Response to
CARES Act
Varied

Jana Steele

'Social Washing'
and How
COVID-19 Has
Emphasized the
'S' in ESG

Aaron Quach

Plus our [blog](#)
contains a wide
array of other
posts related to
the pandemic

Additional Reading

Private Equity Trends quarterly newsletter

Active vs. Passive quarterly charts

Capital Market Review quarterly newsletter

Monthly Updates to the Periodic Table

Market Pulse Flipbook quarterly markets update

Callan Institute Events

Upcoming conferences, workshops, and webinars

“Callan College”

Introduction to Investments—Virtual

This program familiarizes institutional investor trustees and staff and asset management advisers with basic investment theory, terminology, and practices. It is held over three days with virtual modules of 2.5-3 hours. This course is designed for individuals with less than two years of experience with asset-management oversight and/or support responsibilities. Tuition is \$950 per person and includes instruction and digital materials.

Next Session: October 13-15, 2020

Additional information can be found at:
www.callan.com/cc-introduction-virtual/

“Research, education, and dialogue are more important than ever in these extraordinary times, which is why I’m pleased to announce that we are adding more webinars, and we plan to expand our events to include roundtables and other interactive digital offerings.”

Barb Gerraty
Director, Callan Institute



Upcoming Webinars

Demystifying China

July 29, 2020

In this webinar, Callan’s China specialists will discuss:

- The key factors driving China’s economic growth
- China’s capital markets and where they fit in a global equity structure
- Characteristics of the China manager universe and product offerings
- Strategies for investing in future opportunities

Opportunities in Private Credit

August 20, 2020

Register at www.callan.com/callan-institute-events

On-Demand Webinars

Visit our website for On-Demand webinar options at
www.callan.com/on-demand-webinars/

Our most recent webinar covered strategies in alternatives.

Callan Updates

Firm updates by the numbers, as of June 30, 2020

Total Associates: 199

Ownership

- 100% employees
- Broadly distributed across more than 95 shareholders

Leadership Changes

- No executive additions or departures
- No leadership changes this quarter

Total General and Fund Sponsor Consultants: more than 45

Total Specialty and Research Consultants: more than 60

Total CFA/CAIA/FRMs: more than 55

Total Fund Sponsor Clients: more than 400

AUA: more than \$2.5 trillion

“We’ve been taking precautions to combat the spread of the virus and to safeguard the health of our employees, our clients, and the community at large. Our hearts go out to those directly affected by the virus, and to those whose lives are being disrupted by the downstream social and economic effects.”

- CEO & Chief Research Officer Greg Allen on Callan's COVID-19 Response

