

UNIVERSITY OF CALIFORNIA

Office of the Chief Investment Officer

UC Retirement Savings Program Investment Performance Review as of June 30, 2016

Growing Portfolios Building Partnerships

UC Investments



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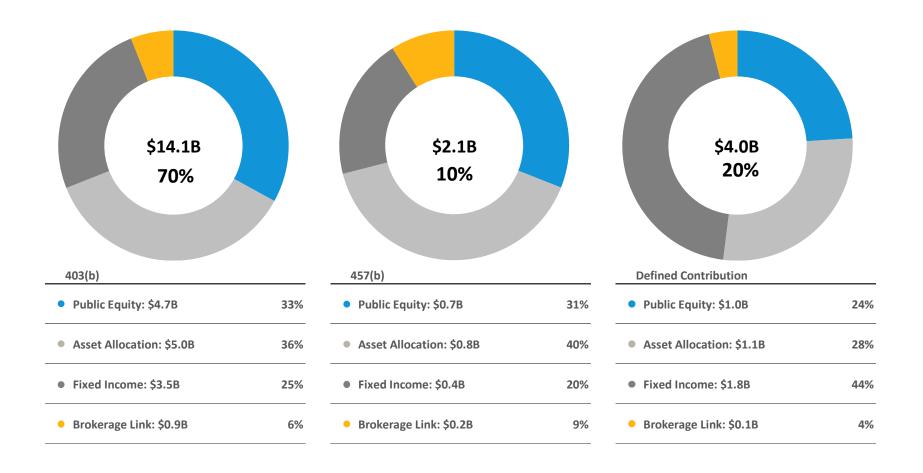


Key Observations

- Total Assets: \$20.2 billion as of June 30, 2016
- Total Participants: 297,109 as of June 30, 2016
- Assets in Target Date Funds: \$5.5 billion
- Assets in UC Savings: \$4.2 billion; UC Global Equity Fund: \$4.1 billion
- 2014 Target Date Funds become default option from UC Savings
- 2015 Updated Target Date Fund Asset Allocation
- 2016 Outsourced rebalancing to State Street
- Recruited Marco Merz, Director, Defined Contribution Products, from BlackRock with 10 years of experience



Total Assets: \$20.2 billion as of June 30, 2016



Participants: 130,897

Participants: 30,557

Participants: 272,720



Key Statistics as of June 30, 2016

	Asset Class	403b	DCP	457b	Same-size Peers	Unique Total
Number of Participants						
Total Participants	N/A	130,897	272,720	30,557	N/A	297,109
Active Participants	N/A	81,186	134,546	22,705	N/A	149,114
Inactive Participants	N/A	49,711	138,174	7,852	N/A	147,995
Total Plan Assets	N/A	\$14.1 billion	\$4.0 billion	\$2.1 billion	N/A	\$20.2 billion
Number of Funds Held by Participants						
How many participants hold:						
1 Fund (Target Date Fund)	N/A	24.1%	21.5%	19.9%	34.0%	N/A
1 Fund (Non Target Date Fund)	N/A	19.6%	49.2%	20.1%	9.3%	N/A
2 Funds	N/A	20.2%	21.6%	19.9%	14.6%	N/A
3 Funds	N/A	13.0%	3.9%	11.8%	8.1%	N/A
4 Funds	N/A	8.8%	1.7%	9.6%	6.6%	N/A
5 or more Funds	N/A	14.3%	2.1%	18.7%	27.4%	N/A
Average # of Funds Held	N/A	2.6 funds	1.5 funds	2.9 funds	3.1 funds	N/A
Funds held as a single investment						
UC SAVINGS FUND	Money Market / Short-Term	13,278	118,979	2,008	N/A	134,265
UC GLOBAL EQUITY FD	Domestic Equity	5,260	6,018	847	N/A	12,125
UC BALANCED GROWTH	Balanced/Hybrid	3,075	2,263	896	N/A	6,234
FID GROWTH CO K	Domestic Equity	473	1,194	194	N/A	1,861
UC BOND FUND	Bond	740	786	276	N/A	1,802
Plus 10 other funds	-	1,445	3,073	1,169	N/A	5,687
Target Date Funds	-	31,525	58,690	6,091	N/A	96,306
BrokerageLink	-	1,431	1,804	737	N/A	3,972
Total		57,227	192,807	12,218	N/A	262,252

For plans that offer Fidelity BrokerageLink, it will appear as a fund (rather than a product offering) for purposes of providing plan data.



Investment Options - Summary

	June 30 th 2016	June 30 th 2015
11 " Pathway" Target Date Funds	\$5.5 billion	\$5.0 billion
15 Core Investment Options	\$13.5 billion	\$13.9 billion
Brokerage Window	\$ 1.2 billion	\$1.3 billion
Total Plan	\$20.2 billion	\$20.1 billion



Investment Options - Details

Pre-Defined Asset Allocation	Asset Allocation	n Building Blocks	Build My Own Portfolio
		Capital Preservation UC Savings Fund - \$4,230	
		Inflation Sensitive UC Short-Term TIPS Fund - \$25 UC TIPS Fund - \$204	
Target Date Funds UC Pathway Funds - \$5,484		Diversified Fixed Income UC Bond Fund - \$1,180	
Balanced Fund UC Balanced Growth - \$1,504	US Large Equity UC Domestic Equity Fund - \$495 Vanguard Social Index - \$193	Large Equity Fidelity Growth Company Fund - \$477	
	US Small/Mid Cap Equity Vanguard Small Cap Fund - \$335	US Small/Mid Cap Equity Calvert Capital Accumulation Fund - \$66	
	Global Equity UC Global Fund -\$4,069	World ex-US Equity Fidelity Diversified Intl. Fund - \$112 DFA Emerging Markets Fund - \$138	Brokerage Window - \$1,220
	World ex-US Equity UC International Equity Fund - \$203		
Market Value In \$ Millions	Vanguard REIT	l Estate Index Fund - \$228	
Signifies funds with over \$1 Billion			







Target Date Funds Performance - Summary

		% of		Ann	ualized Total Ret	urn(%)		
Target Date Funds	Market Value (\$M)	Total Plan	3 Months	One Year	Three Year	Five Year	Seven Year	Ten Year
UC Pathway Income Fund	\$578	2.86%	1.32	1.49	1.84	2.20	4.26	3.82
UC Pathway Fund 2015	\$515	2.55%	1.43	1.69	2.49	2. 9 8	5. 9 4	-
UC Pathway Fund 2020	\$1,015	5.03%	2.02	2.10	3.79	3.97	6.87	4.21
UC Pathway Fund 2025	\$833	4.13%	1.96	1.17	3. 99	4.17	7.28	-
UC Pathway Fund 2030	\$863	4.28%	1.92	0.48	4.21	4.37	7.60	4.08
UC Pathway Fund 2035	\$563	2.79%	1.86	-0.20	4.44	4.5 9	7.96	-
UC Pathway Fund 2040	\$491	2.43%	1.80	-0.88	4.65	4.76	8.15	4.22
UC Pathway Fund 2045	\$260	1.29%	1.74	-1.61	4.84	4.92	8.42	-
UC Pathway Fund 2050	\$188	0.93%	1.70	-2.19	5.04	5.07	8.85	4.27
UC Pathway Fund 2055	\$70	0.35%	1.70	-2.16	5.38	5.30	9.38	_
UC Pathway Fund 2060	\$109	0.54%	1.70	-2.14	5.70	5.51	9.80	-
Total	\$5,484	27%						



Target Date Funds Performance - Details

		Annualized Total Return (%)						
Target Date Funds	Market Value (\$M)	Total Plan	3 Months	One Year	Three Year	Five Year	Seven Year	Ten Year
UC Pathway Income Fund	\$578	2.86%	1.32	1.49	1.84	2.20	4.26	3.82
Policy Benchmark			1.26	1.23	1.47	1.76	3.62	3.21
Value Added			0.06	0.26	0.37	0.44	0.64	0.61
UC Pathway Fund 2015	\$515	2.55%	1.43	1.69	2.49	2.98	5.94	-
Policy Benchmark			1.36	1.42	2.14	2.64	5.49	-
Value Added			0.07	0.27	0.35	0.34	0.45	-
UC Pathway Fund 2020	\$1,015	5.03%	2.02	2.10	3.79	3.97	6.87	4.21
Policy Benchmark			1.94	1.80	3.49	3.71	6.57	3.82
Value Added			0.08	0.30	0.30	0.26	0.30	0.39
UC Pathway Fund 2025	\$833	4.13%	1.96	1.17	3.99	4.17	7.28	-
Policy Benchmark			1.88	0.80	3.71	3.94	6.97	-
Value Added			0.08	0.37	0.28	0.23	0.31	-
UC Pathway Fund 2030	\$863	4.28%	1.92	0.48	4.21	4.37	7.60	4.08
Policy Benchmark			1.83	0.05	3.94	4.15	7.33	3.70
Value Added			0.09	0.43	0.27	0.22	0.27	0.38
UC Pathway Fund 2035	\$563	2.79%	1.86	-0.20	4.44	4.59	7.96	-
Policy Benchmark			1.76	-0.69	4.16	4.36	7.66	-
Value Added			0.10	0.49	0.28	0.23	0.30	-



Target Date Funds Performance - Details

			Annualized Total Return (%)					
Target Date Funds	Market Value (\$M)	Total Plan	3 Months	One Year	Three Year	Five Year	Seven Year	Ten Year
UC Pathway Fund 2040	\$491	2.43%	1.80	-0.88	4.65	4.76	8.15	4.22
Policy Benchmark			1.69	-1.43	4.37	4.53	7.88	3.84
Value Added			0.11	0.55	0.28	0.23	0.27	0.38
UC Pathway Fund 2045	\$260	1.29%	1.74	-1.61	4.84	4.92	8.42	-
Policy Benchmark			1.61	-2.22	4.56	4.68	8.13	-
Value Added			0.13	0.61	0.28	0.24	0.29	-
UC Pathway Fund 2050	\$188	0.93%	1.70	-2.19	5.04	5.07	8.85	4.27
Policy Benchmark			1.55	-2.86	4.74	4.82	8.59	3.92
Value Added			0.15	0.67	0.30	0.25	0.26	0.35
UC Pathway Fund 2055	\$70	0.35%	1.70	-2.16	5.38	5.30	9.38	-
Policy Benchmark			1.55	-2.86	5.08	5.04	9.08	-
Value Added			0.15	0.70	0.30	0.26	0.30	-
UC Pathway Fund 2060	\$109	0.54%	1.70	-2.14	5.70	5.51	9.80	-
Policy Benchmark			1.55	-2.86	5.42	5.25	9.51	-
Value Added			0.15	0.72	0.28	0.26	0.29	-



Core Line-Up Performance - Summary

		% of		Annu	alized Total R	eturn (%)		
	Market Value (\$M)	Total Plan	3 Months	One Year	Three Year	Five Year	Seven Year	Ten Year
UC Savings Fund	\$4,230	20.98%	0.36	1.22	1.07	1.16	1.46	2.29
UC Global Equity Fund	\$4,069	20.18%	1.83	0.00	9.65	10.00	13.54	6.66
UC Balanced Growth Fund	\$1,504	7.46%	1.81	0.28	5.61	5.95	9.14	5.70
UC Bond Fund	\$1,180	5.85%	2.41	6.12	4.25	4.15	5.08	5.37
UC Domestic Equity Index Fund	\$495	2.45%	2.52	1.88	11.08	11.59	14.94	7.38
Fidelity Growth Company Fund	\$477	2.36%	0.89	-3.45	12.74	11.82	14.17	9.72
Vanguard Small Cap Index Fund	\$335	1.66%	3.99	-2.86	8.96	9.92	-	-
Vanguard REITS Index Fund	\$228	1.13%	6.78	23.94	13.44	12.47	-	-
UC TIPS Fund	\$204	1.01%	1.58	4.16	2.48	2.76	4.51	5.03
UCInternational Equity Index Fund	\$203	1.01%	-1.10	-10.18	1.93	1.37	5.96	1.85
Vanguard FTSE Social Index Fund	\$193	0.96%	1.56	-0.20	11.44	12.70	15.39	6.38
DFA Emerging Markets Portfolio	\$138	0.68%	1.73	-8.97	-0.68	-3.14	-	-
Fidelity Diversified Intl. Fund	\$112	0.55%	-2.26	-9.98	4.16	3.40	3.46	2.41
Calvert Cap. Accum. Fund	\$66	0.33%	-3.13	-11.39	6.71	7.28	10.59	7.30
UC Short Term TIPS Fund	\$25	0.12%	0.79	1.23	0.60	-	-	-
Total	\$13,457	67%						



Core Line-Up Performance - Details

		% of			Annualized Total Return					
Balanced Fund	Market Value (\$M)	Total Plan	3 Months	One Year	Three Year	Five Year	Seven Year	Ten Year		
UC Balanced Growth Fund	\$1,504	7.46%	1.81	0.28	5.61	5.95	9.14	5.70		
Policy Benchmark			1.76	-0.12	5.48	5.72	8.93	5.23		
Value Added			0.05	0.40	0.13	0.23	0.21	0.47		
US Large Equity										
UC Domestic Equity Index Fund	\$495	2.45%	2.52	1.88	11.08	11.59	14.94	7.38		
Russell 3000 TF Index			2.56	1.71	11.00	11.48	14.83	7.25		
Value Added			-0.04	0.17	0.08	0.11	0.11	0.13		
Vanguard FTSE Social Index Fund	\$193	0.96%	1.56	-0.20	11.44	12.70	15.39	6.38		
Spliced Social Index			1.54	-0.11	11.54	12.81	15.50	6.50		
Value Added			0.02	-0.09	-0.10	-0.11	-0.11	-0.12		
US Small/Mid Cap Equity										
Vanguard Small Cap Index Fund	\$335	1.66%	3.99	-2.86	8.96	9.92	-	-		
CRSP Small Cap Index			3.97	-2.91	8.93	9.87	-	-		
Value Added			0.02	0.05	0.03	0.05	-	-		
Global/World ex-US Equity										
UC Global Equity Fund	\$4,069	20.18%	1.83	0.00	9.65	10.00	13.54	6.66		
Policy Benchmark			1.84	-0.20	9.58	9.84	13.36	6.41		
Value Added			-0.01	0.20	0.07	0.16	0.18	0.25		
UC International Equity Index Fund	\$203	1.01%	-1.10	-10.11	1.93	1.37	5.96	1.85		
MSCI World ex-US TF Index			-1.05	-9.94	1.88	1.23	5.79	1.63		
Value Added			-0.05	-0.17	0.05	0.14	0.17	0.22		



Core Line-Up Performance - Details

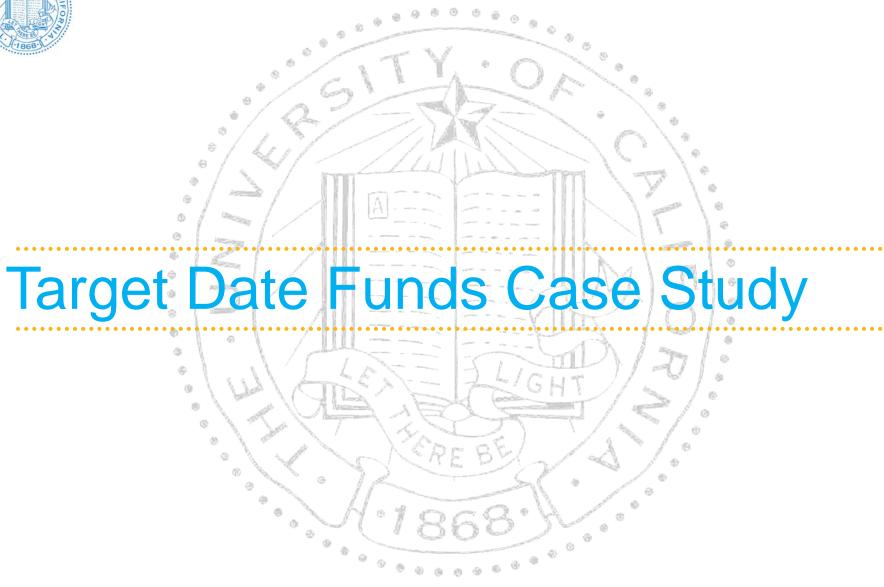
	% of				Annualized Total Return (%)					
Capital Preservation	Market Value (\$M)	Total Plan	3 Months	One Year	Three Year	Five Year	Seven Year	Ten Year		
UC Savings Fund	\$4,230	20.98%	0.36	1.22	1.07	1.16	1.46	2.29		
Two-Year U.S. Treasury Notes Income R	leturn		0.22	0.78	0.52	0.41	0.51	1.32		
Value Added			0.14	0.44	0.55	0.75	0.95	0.97		
Inflation Sensitive										
UC Short Term TIPS Fund	\$25	0.12%	0.79	1.23	0.60	-	-	-		
Barclays 1-3 Year U.S. TIPS Index			0.74	1.08	0.24	-	-	-		
Value Added			0.05	0.15	0.36	-	-	-		
UC TIPS Fund	\$204	1.01%	1.58	4.16	2.48	2.76	4.51	5.03		
Barclays US TIPS Index			1.71	4.35	2.31	2.63	4.31	4.75		
Value Added			-0.13	-0.19	0.17	0.13	0.20	0.28		
Diversified Fixed Income										
UC Bond Fund	\$1,180	5.85%	2.41	6.12	4.25	4.15	5.08	5.37		
Barclays Aggregate Fixed Income Bench	nmark		2.21	6.00	4.06	3.76	4.58	5.13		
Value Added			0.20	0.12	0.19	0.39	0.50	0.24		
New Large Equity										
Fidelity Growth Company Fund	\$477	2.36%	0.89	-3.45	12.74	11.82	14.17	9.72		
S&P 500 TF Index			2.36	3.49	11.51	11.97	14.78	7.25		
Value Added			-1.47	-6.94	1.23	-0.15	-0.61	2.47		



Core Line-Up Performance - Details

	% of				Annualized Total Return (%)					
US Small/Mid Cap Equity	Market Value (\$M)	Total Plan	3 Months	One Year	Three Year	Five Year	Seven Year	Ten Year		
Calvert Cap. Accum. Fund	\$66	0.33%	-3.13	-11.39	6.71	7.28	10.59	7.30		
Russell 2500 TF Index			3.57	-3.67	8.61	9.48	15.35	7.32		
Value Added			-6.70	-7.72	-1.90	-2.20	-4.76	-0.02		
World ex-US Equity										
Fidelity Diversified Intl. Fund	\$112	0.55%	-2.26	-9.98	4.16	3.40	3.46	2.41		
MSCI World ex-US TF Index			-1.05	-9.84	1.88	1.23	5.79	1.63		
Value Added			-1.21	-0.14	2.28	2.17	-2.33	0.78		
DFA Emerging Markets Portfolio	\$138	0.68%	1.73	-8.97	-0.68	-3.14	-	-		
MSCI Emerging Markets Index			0.66	-12.05	-1.56	-3.78	-	-		
Value Added			1.07	3.08	0.88	0.64	-	-		
Real Estate										
Vanguard REITS Index Fund	\$228	1.13%	6.78	23.94	13.44	12.47	-	-		
REIT Spliced Index			6.81	24.10	13.51	12.53	-	-		
Value Added			-0.03	-0.16	-0.07	-0.06	-	-		







Summary

- 100% internally managed by OCIO since inception
- OCIO manages the Asset Allocation Glidepath; reviewed FY2015/2016 with Mercer
- OCIO manages Asset Allocation reviewed FY 2015/2016 with Mercer
- Use both Active and Passive funds in Target Date Funds
- Benchmark for Target Date Funds is a composite of its building blocks



Target Date Funds Asset Class Building Blocks

US Equities

UC Domestic Equity Index Fund

Russell 3000 Tobacco Free Index

International Equities

UC International Equity Index Fund

World ex US Tobacco Free Index

DFA Emerging Markets Portfolio (Active)

MSCI Emerging Markets

Fixed Income

UC Bond Fund (Active)

 Core vs. Barclays US Aggregate Bond Index (Intermediate Bonds)

US Small Cap Equities

Vanguard Small Cap Index Fund

CRSP US Small Cap Index

Real Estate

Vanguard REITs Index Fund

MSCI US REIT Index

US Inflation-linked Bonds

UC Short TIPS Fund

Barclays US Short TIPs Index

Money Market/Short Duration

UC Savings Fund (Active)



Pathway 2020 - Performance Attribution

2020 Allocation (%)

Target Date 2020 Performance Attribution

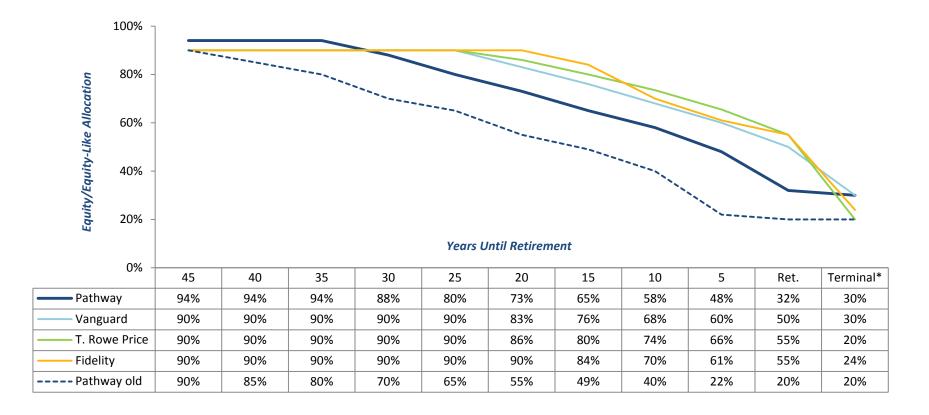
100% —— 90% ——	Fund	Weight (A)	Fund Return (%)	Benchmark Return (%)	Net (%) (B)	2020 (%) (A)*(B)
80%	UC Domestic Fund	21.70%	1.88%	1.71%	0.17%	0.04%
70% —— —— —— —— —— —— —— —— —— —— —— —— ——	Vanguard Small Cap Fund	1.33%	-2.86%	-2.91%	0.05%	0.00%
50%	UC International Fund	13.70%	-10.18%	-9.94%	-0.24%	-0.03%
40% ———— 30% ——	DFA Emerging Markets	9.20%	-8.97%	-12.05%	3.08%	0.28%
20%	Vanguard REITs	2.46%	23.94%	24.10%	-0.16%	0.00%
	UC Bond Fund	51.62%	6.12%	6.00%	0.12%	0.06%
US Large-Cap Equities					Total	0.34

Strong performance of the DFA Emerging Markets and UC Bond Fund led to an outperformance of the 2020 vintage



Target Date Funds Glidepath

Pathway Target Date Fund vs. Top 3 TDF providers





Asset Allocation – Target Date Funds

Pathway Strategic Asset Allocations (%)



Effective target weights for Q2 2016

REITs



Key considerations of internal management

Fiduciary

- OCIO is Fiduciary for Asset Allocation Glidepath
- Outsourcing would lead to 3rd party manager 'taking on' Fiduciary status with significant market experience in constructing Glidepaths

Operational

- OCIO is responsible for Asset Allocation Rebalancing and trading
- Outsourcing would shift responsibility to 3rd party manager that would have additional trade crossing opportunities

Cost

- Fees for Pathway range from 11-18 basis points
- 3rd party passive manager would charge approximately 5-10 bps

Recommendation:

- We should consider outsourcing our Target Date Fund series.
- We have started socializing with key stakeholders within the University of California.
- Outsourcing will reduce the fiduciary and operational risks for the University of California and could lead to better performance outcomes for our Participants.



Pathway Income

Pathway Relative Performance vs. Target Date Fund Universe

Fee compare

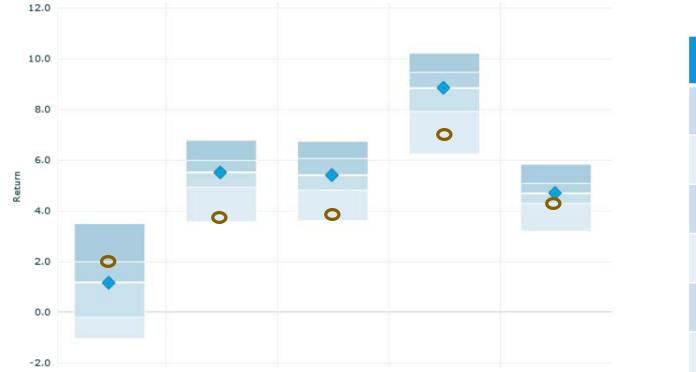


O Pathway



Pathway Relative Performance vs. Target Date Fund Universe

Fee compare



	1 Year	3 Year	5 Year	7 Year	10 Year
Median	1.0%	5.9%	5.9%	9.4%	4.8%
Pathway	2.1%	3.8%	4.0%	6.9%	4.2%
Number of Funds	21	21	19	15	12
Pathway Rank	4	21	19	13	8

Fee (bps) Manager Pathway 13 Vanguard 5 (passive) BlackRock 12 (passive) JP Morgan 21 (blend) JP Morgan 47 (active) T Rowe 38 (active)





	1 Year	3 Year	5 Year	7 Year	10 Year
Median	-0.4%	6.6%	6.4%	10.5%	4.9%
Pathway	0.5%	4.2%	4.4%	7.6%	4.1%
Number of Funds	21	21	19	15	12
Pathway Rank	8	21	18	15	11



Pathway Relative Performance vs. Target Date Fund Universe

Fee compare



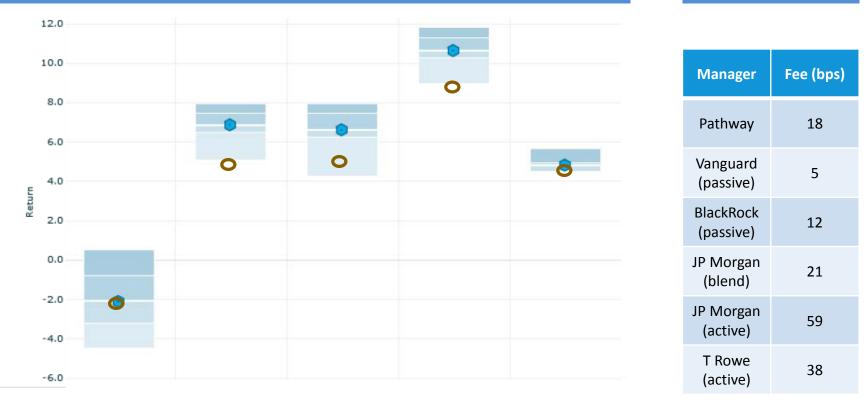
	1 Year	3 Year	5 Year	7 Year	10 Year
Median	-1.7%	7.0%	7.1%	11.1%	5.2%
Pathway	-0.9%	4.7%	4.8%	8.2%	4.2%
Number of Funds	21	21	19	15	12
Pathway Rank	8	21	16	15	11

O Pathway



Pathway Relative Performance vs. Target Date Fund Universe

Fee compare



	1 Year	3 Year	5 Year	7 Year	10 Year
Median	-1.8%	7.2%	7.3%	11.3%	4.9%
Pathway	-2.2%	5.0%	5.1%	8.9%	4.3%
Number of Funds	21	21	17	11	11
Pathway Rank	12	21	16	11	10

O Pathway