

NDPERS
401(a) Defined
Contribution Plan
Quarterly Report
2nd Quarter
4/1/2021 – 6/30/2021



North Dakota Public Employees Retirement System
1600 East Century Ave, Suite 2
Box 1657
Bismarck, ND 58502

March 13, 2018 – The NDPERS Board put the **Prudential Mid Cap Growth fund (PEGZX)** on Formal Fund Review.

March 12, 2019 - The NDPERS Board approved the following actions for the 457 Companion plan:

Close the **Allianz NFJ Small Cap fund (PVADX)** and replace it with the **Northern Small Cap Value fund (NOSGX)**.

Close the **Franklin Mutual Discovery fund (MDISX)** and replace it with the **American Funds New Perspective (RNPEX)**.

Close the **PIMCO Real Return fund (PARRX)** and replace it with the **MassMutual Premier Inflation Protection fund (MIPYX)**.

September 10, 2019 – The NDPERS Board approved the following actions for the 457 Companion plan:

The NDPERS Board approved removing the **Wells Fargo Growth fund (SGRKX)** from Formal Fund Review.

The NDPERS Board put the **PIMCO Total Return fund (PTRAX)** on Formal Fund Review.

The NDPERS Board put the **AMG/Fairpointe Mid Cap fund (ABMIX)** on Formal Fund Review.

December 10, 2019 – The NDPERS Board approved the following actions for the 457 Companion plan:

The NDPERS Board put the **Templeton Global Bond fund (TGBAX)** on Formal Fund Review.

Close the **AMG/Fairpointe Mid Cap fund (ABMIX)**.

March 10, 2020 - The NDPERS Board approved the following actions for the 401(a) Defined Contribution plan and 457 Companion plan:

Close the **PIMCO Total Return Bond fund (PTRAX)** and replace it with the **Baird Core Plus Bond fund (BCOSX)**.

401(a)	Assets	Pct
TIAA-CREF Lifecycle 2030 Fund Retirement	\$2,324,194	11.8%
TIAA-CREF Lifecycle 2025 Fund Retirement	\$2,164,962	11.0%
TIAA-CREF Lifecycle 2035 Fund Retirement	\$1,845,278	9.4%
Vanguard Institutional Index Fund Institutional	\$1,415,028	7.2%
TIAA-CREF Lifecycle 2020 Fund Retirement	\$1,207,617	6.1%
TIAA-CREF Lifecycle 2045 Fund Retirement	\$1,054,976	5.4%
TIAA-CREF Lifecycle 2050 Fund Retirement	\$1,039,485	5.3%
Brown Capital Management Small Company Fund Investor	\$821,287	4.2%
TIAA-CREF Lifecycle 2040 Fund Retirement	\$795,226	4.0%
TIAA-CREF Lifecycle 2055 Fund Retirement	\$629,650	3.2%
PGIM High Yield Fund Z	\$622,065	3.2%
Wells Fargo Growth Fund Administrator	\$619,253	3.2%
Franklin Growth Fund Advisor	\$582,439	3.0%
Vanguard Total International Stock Index Fund Admiral	\$443,667	2.3%
TIAA-CREF Lifecycle 2010 Fund Retirement	\$398,891	2.0%
T. Rowe Price Capital Appreciation Fund Advisor	\$389,228	2.0%
American Funds New Perspective Fund R4	\$370,010	1.9%
Hartford Dividend and Growth Fund R5	\$339,603	1.7%
Invesco Developing Markets Fund Y	\$310,257	1.6%
Cohen & Steers Realty Shares	\$262,839	1.3%
Vanguard Admiral Treasury Money Market Fund Investor	\$242,473	1.2%
Vanguard Dividend Growth Fund Investor	\$226,670	1.2%
Baird Core Plus Bond Fund Investor	\$214,875	1.1%
Columbia Mid Cap Index Fund A	\$198,756	1.0%
DFA U.S. Small Cap Portfolio Institutional	\$161,645	0.8%
Wells Fargo Stable Value Fund - J	\$142,880	0.7%
Self Directed Brokerage Account	\$136,502	0.7%
Northern Small Cap Value Fund	\$111,546	0.6%
Templeton Global Bond Fund Advisor	\$99,551	0.5%
T. Rowe Price Equity Income Fund	\$88,836	0.5%
MassMutual Inflation-Protected and Income Fund Service Class	\$86,420	0.4%
Prudential Jennison Mid-Cap Growth Fund Z	\$85,458	0.4%
Vanguard Total Bond Market Index Fund Admiral	\$84,002	0.4%
Virtus Ceredex Mid-Cap Value Equity Fund I	\$74,022	0.4%
TIAA-CREF Lifecycle 2015 Fund Retirement	\$47,386	0.2%
TIAA-CREF Lifecycle 2060 Fund Retirement	\$8,319	0.0%
TIAA-CREF Lifecycle Retirement Income Fund Retirement	\$0	0.0%
Total	\$19,645,296	100.0%

Global economic overview

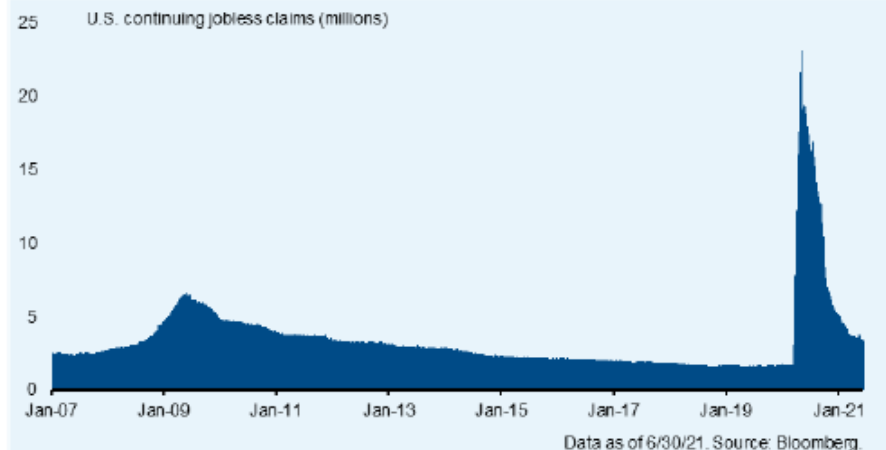


- The global economy has taken off, led by the U.S., as pent-up demand explodes into the reopening economy.
- Financial conditions remain quite loose thanks to global central banks, and private sector balance sheets are solid thanks to fiscal stimulus.
- The global recovery will be sequential rather than synchronous. Europe will peak in Q3 and Asia and most of EM in Q4.
- U.S. jobs are returning and unemployment claims have fallen, but there is still a long way to go to return to full employment.
- Global manufacturing activity has staged a V-shaped recovery, with some producers struggling to keep up with surging demand.

U.S. handing off the “peak growth” baton to Europe



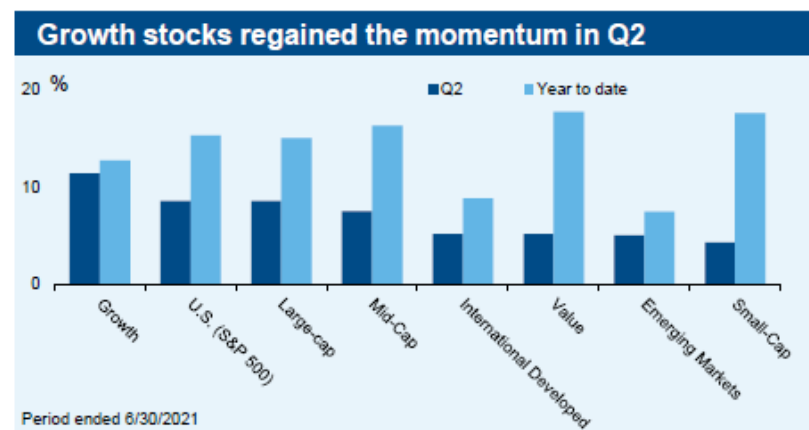
The U.S. labor market recovery slowed in Q2



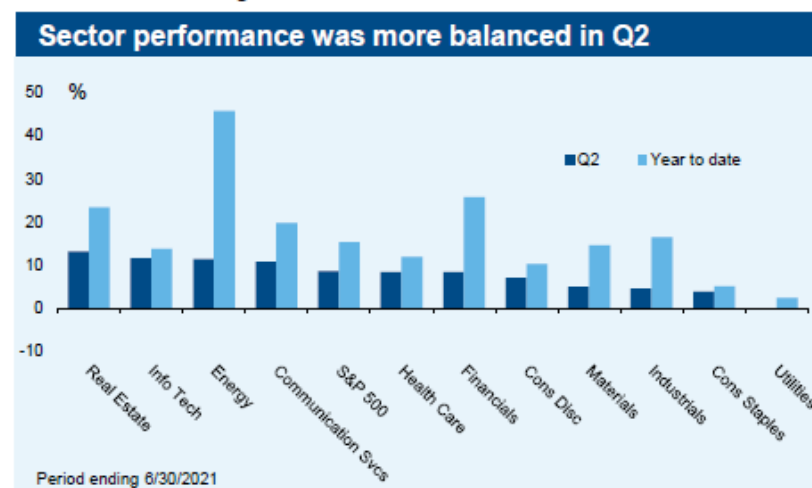
Equity markets review & outlook



- Global equity markets made impressive gains in the first half of the year, and the rally has been broad-based.
- Stock valuations are starting to fall from very high levels as investors revise up their earnings expectations for 2021 and 2022.
- S&P 500 profits should grow by 30-40% in 2021, while parts of Europe and EM could exceed that increase.
- Energy and financials have been on top in 2021 so far on the backs of the strongest economy growth in decades.
- Our portfolios have rotated somewhat toward more cyclical parts of the equity market after growth sectors outperformed in the second quarter.



Past Performance is no guarantee of future results.



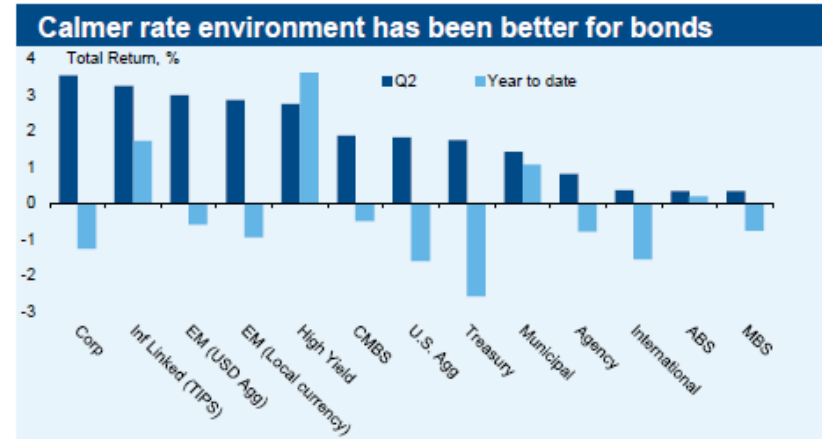
Past Performance is no guarantee of future results.

* Growth returns represented by the Russell 3000 Growth Index, emerging-markets returns represented by MSCI Emerging Markets Index, U.S. returns represented by S&P 500 Index, large-cap returns represented by Russell 1000 Index, mid-cap returns represented by Russell Midcap Index, value returns represented by Russell 3000 Value Index, international developed-markets returns represented by MSCI EAFE Index, small-cap returns represented by Russell 2000 Index. All returns are stated in U.S. dollar terms unless noted otherwise. Indices are unmanaged and unavailable for direct investment.

Fixed-income markets review & outlook



- Corporate bonds spreads are at their lowest levels since before the 2008 financial crisis, as investors continue to pay up for yield.
- TIPS performed well in the first half of the year as inflation expectations rose.
- Municipal bonds rallied relative to their taxable counterparts on the passage of more aid to state and local governments.
- EM credit should continue to be helped by global stimulus and demand for yield.
- We expect interest rates to remain contained even as economic growth stays strong.



Past Performance is no guarantee of future results.



Data source: Bloomberg, as of 6/30/21

* Sources: Emerging-markets (EM) returns (local currency) represented by Bloomberg Barclays Emerging Markets Local Currency Government Index, Inflation-Linked (TIPS) returns represented by Bloomberg Barclays US Treasury Inflation-Linked Bond Index (Series-L), Corporate returns represented by Bloomberg Barclays US Corporate Bond Index, International returns represented by Bloomberg Barclays Global Aggregate ex-US Index, Municipal bond returns represented by Bloomberg Barclays U.S. Municipal Index, EM bond (USD Agg) returns represented by Bloomberg Barclays Emerging Markets USD Aggregate Index, High Yield returns represented by Bloomberg Barclays US Corporate High-Yield Bond Index, U.S. Agg returns represented by Bloomberg Barclays US Aggregate Bond Index, CMBS returns represented by Bloomberg Barclays US Aggregate Securitized – CMBS Index, MBS returns represented by Bloomberg Barclays US Aggregate Securitized – MBS Index, Treasury returns represented by Bloomberg Barclays US Aggregate Government – Treasury Index, ABS returns represented by Bloomberg Barclays US Aggregate Securitized – ABS Index, Agency returns represented by Bloomberg Barclays US Agency Index.

Benchmark yearly returns



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021 YTD
HIGHEST RETURN	EM Equity 78.51	Global REIT 27.95	TIPs 13.56	Global REIT 19.70	Small Cap 38.82	Global REIT 28.03	Global REIT 2.83	Small Cap 21.31	EM Equity 37.28	Short Bonds 1.38	S&P 500 31.49	Small Cap 19.96	Global REIT 21.35
	Int'l Small Cap 62.91	Small Cap 26.85	Global REIT 8.28	Int'l Small Cap 18.52	Mid Cap 34.76	S&P 500 13.69	Int'l Small Cap 2.60	High Yield 17.13	Int'l Small Cap 31.65	Bonds 0.01	Mid Cap 30.54	S&P 500 18.4	Small Cap 17.54
	High Yield 58.21	Mid Cap 25.48	Bonds 7.84	EM Equity 18.22	S&P 500 32.39	Mid Cap 13.22	S&P 500 1.38	Mid Cap 13.80	Int'l Equity 25.03	TIPs -1.26	Global REIT 28.66	EM Equity 18.31	Mid Cap 16.25
	Mid Cap 40.48	Int'l Small Cap 25.21	Int'l Bond 5.17	Int'l Equity 17.32	Int'l Equity 22.78	Bonds 5.97	Short Bonds 0.97	S&P 500 11.96	S&P 500 21.83	Int'l Bond -1.82	Small Cap 25.52	Mid Cap 17.1	S&P 500 15.25
	Target Date 32.71	EM Equity 18.88	High Yield 4.98	Mid Cap 17.28	Target Date 19.90	Target Date 5.80	Bonds 0.55	EM Equity 11.19	Mid Cap 18.52	High Yield -2.08	Int'l Small Cap 22.42	Int'l Small Cap 14.24	Int'l Small Cap 12.24
	Int'l Equity 31.78	Target Date 16.89	Short Bonds 3.14	Small Cap 16.35	Int'l Small Cap 19.73	Small Cap 4.89	Int'l Equity -0.81	Global REIT 8.63	Target Date 16.99	Global REIT -4.04	Int'l Equity 22.01	Target Date 12.15	Int'l Equity 8.83
	Global REIT 27.99	High Yield 15.12	S&P 500 2.11	S&P 500 16.00	High Yield 7.44	TIPs 3.64	TIPs -1.44	Target Date 8.49	Small Cap 14.65	S&P 500 -4.38	Target Date 19.70	TIPs 10.99	EM Equity 7.45
	Small Cap 27.17	S&P 500 15.06	Mid Cap -1.55	High Yield 15.81	Global REIT 2.86	High Yield 2.45	Target Date -1.61	TIPs 4.68	Int'l Bond 10.33	Target Date -5.80	EM Equity 18.42	Int'l Bond 10.78	Target Date 7.3
	S&P 500 26.46	Int'l Equity 7.75	Target Date 2.62	Target Date 13.92	Short Bonds 0.28	Short Bonds 1.42	Mid Cap -2.44	Int'l Small Cap 3.91	Global REIT 8.67	Mid Cap -9.06	High Yield 14.32	Int'l Equity 7.82	High Yield 3.62
	TIPs 11.41	Bonds 6.54	Small Cap -4.18	TIPs 6.98	Bonds -2.02	EM Equity -2.19	Small Cap -4.41	Bonds 2.65	High Yield 7.5	Small Cap -11.01	Bonds 8.72	Bonds 7.51	TIPs 1.73
	Bonds 5.93	TIPs 6.31	Int'l Equity -12.14	Bonds 4.21	EM Equity -2.60	Int'l Bond -2.68	High Yield -4.47	Int'l Bond 1.81	Bonds 3.54	Int'l Equity -13.79	TIPs 8.43	High Yield 7.11	Short Bonds -0.30
	Short Bonds 4.62	Int'l Bond 5.21	EM Equity -18.42	Short Bonds 2.24	Int'l Bond -4.56	Int'l Small Cap -4.03	Int'l Bond -5.54	Short Bonds 1.56	TIPs 3.01	EM Equity -14.58	Int'l Bond 5.32	Short Bonds 4.71	Bonds -1.60
LOWEST RETURN	Int'l Bond 4.39	Short Bonds 4.08	Int'l Small Cap -18.50	Int'l Bond 1.51	TIPs -8.61	Int'l Equity -4.90	EM Equity -14.92	Int'l Equity 1.00	Short Bonds 1.27	Int'l Small Cap -18.2	Short Bonds 5.01	Global REIT -5.12	Int'l Bond -6.00

Asset categories' returns could vary widely from year to year which will change annualized returns for 3-, 5-, and 10-year returns accordingly.

Sources: Morningstar Direct

Past performance is no guarantee of future results. You cannot directly invest in an index.

Category	Proxy Index
Bonds	BBgBarc US Agg Bond TR USD
High Yield	BBgBarc US Corporate High Yield TR USD
TIPs	BBgBarc US Treasury US TIPs TR USD
Target Date	DJ Target 2035 TR USD
Global REIT	FTSE NAREIT All Equity REITs TR USD
Int'l Equity	MSCI EAFE NR USD
EM Equity	MSCI EM NR USD
Small Cap	Russell 2000 TR USD
Mid Cap	Russell Mid Cap TR USD
S&P 500	S&P 500 TR USD
Int'l Bond	Citi WGBI NonUSD USD
Short Bonds	BBgBarc US Govt/Credit 1-5 Yr TR USD
Int'l Small Cap	MSCI ACWI Ex USA Small NR USD

Sources: Morningstar Direct

Unless noted YTD, returns are as of year end listed.

As of 06/30/2021

NDPERS 401(a) Defined Contribution Plan & 457 Companion Plan - TIAA-CREF

INITIAL OFFERING:

Hartford Dividend & Growth	Vanguard 500 Index	Franklin Growth Adv	LARGE
T.Rowe Price Equity Income	Vanguard Dividend Growth	Wells Fargo Adv Growth Adm	
Virtus Mid Cap Value Equity I	Columbia Mid Cap Index	Prudential Jennison Mid Cap Growth Z	MEDIUM
Northern Small Cap Value	DFA US Small Cap	Brown Capital Mgmt Small Co Inv	SMALL

VALUE

BLEND

GROWTH

BALANCED FUND:

INCOME FUNDS:

BOND FUNDS:

REAL ESTATE:

INTERNATIONAL FUNDS:

LIFESTYLE FUNDS:

T.Rowe Price Capital Appreciation		
Wells Fargo Stable Value Fund J	Vanguard Prime Money Market	
Baird Core Plus Bond Fund	Vanguard Total Bond Index Fund	Templeton Global Bond
Mass Mutual Inflation Protected Bond Fund	Prudential High Yield Z	
Cohen & Steers Realty Shares		
American Funds New Perspective	Vanguard Total Intl Stock Index	Oppenheimer Developing Markets Y
TIAA-CREF Lifecycle Ret Income	TIAA-CREF Lifecycle 2025	TIAA-CREF Lifecycle 2045
TIAA-CREF Lifecycle 2010	TIAA-CREF Lifecycle 2030	TIAA-CREF Lifecycle 2050
TIAA-CREF Lifecycle 2015	TIAA-CREF Lifecycle 2035	TIAA-CREF Lifecycle 2055
TIAA-CREF Lifecycle 2020	TIAA-CREF Lifecycle 2040	TIAA-CREF Lifecycle 2060

FUND STYLE CHANGES:

←			LARGE
→			
↑		Virtus Mid Cap Value Equity I	MEDIUM
↓	→		
		Brown Capital Mgmt Small Co Inv	
			SMALL

VALUE

BLEND

GROWTH

OTHER FUNDS:

CURRENT LINEUP:

Hartford Dividend & Growth	Vanguard 500 Index	Franklin Growth Adv	LARGE
T.Rowe Price Equity Income	Vanguard Dividend Growth	Wells Fargo Adv Growth Adm	
	Columbia Mid Cap Index	Prudential Jennison Mid Cap Growth Z	MEDIUM
	Virtus Mid Cap Value Equity I		
		Brown Capital Mgmt Small Co Inv	
Northern Small Cap Value	DFA US Small Cap		SMALL

VALUE

BLEND

GROWTH

BALANCED FUND:

INCOME FUNDS:

BOND FUNDS:

REAL ESTATE:

INTERNATIONAL FUNDS:

LIFESTYLE FUNDS:

T.Rowe Price Capital Appreciation		
Wells Fargo Stable Value Fund J	Vanguard Treasury Money Market	
Baird Core Plus Bond Fund	Vanguard Total Bond Index Fund	Templeton Global Bond
Mass Mutual Inflation Protected Bond Fund	Prudential High Yield Z	
Cohen & Steers Realty Shares		
American Funds New Perspective	Vanguard Total Intl Stock Index	Oppenheimer Developing Markets Y
TIAA-CREF Lifecycle Ret Income	TIAA-CREF Lifecycle 2025	TIAA-CREF Lifecycle 2045
TIAA-CREF Lifecycle 2010	TIAA-CREF Lifecycle 2030	TIAA-CREF Lifecycle 2050
TIAA-CREF Lifecycle 2015	TIAA-CREF Lifecycle 2035	TIAA-CREF Lifecycle 2055
TIAA-CREF Lifecycle 2020	TIAA-CREF Lifecycle 2040	TIAA-CREF Lifecycle 2060

NDPERS Investment Benchmarks - 2nd Quarter 2021					
	<u>Quarter</u>	<u>Y-T-D</u>	<u>1-Year</u>	<u>3-Year</u>	<u>5-Year</u>
<u>Stable Value / Money Market Fund</u>					
Vanguard Treasury Money Market - VUSXX	0.00%	0.01%	0.04%	1.21%	1.06%
Wells Fargo Stable Return Fund J - WFSJ#	0.30%	0.63%	1.41%	1.54%	1.37%
3 Month T-Bill Index	0.01%	0.03%	0.08%	1.31%	1.14%
<u>Fixed Income Fund</u>					
Mass Mutual Income Bond Fund - MIPYX	3.41%	2.09%	8.17%	6.53%	4.26%
Baird Core Plus Bond Fund - BCOSX	2.06%	-1.19%	1.52%	5.99%	3.76%
Vanguard Total Bond Market Index Fund - VBTXX	2.00%	-1.69%	-0.42%	5.38%	2.99%
US Aggregate Bond Index	1.96%	-1.67%	-0.33%	5.44%	3.07%
Taxable Corporate Bond Fund Universe	3.14%	-0.67%	4.42%	7.37%	4.80%
Prudential High Yield Z - PHYZX	2.85%	4.51%	16.20%	7.89%	7.80%
BofA High Yield Bond Fund Index	2.77%	3.70%	15.62%	7.15%	7.30%
High Yield Bond Fund Universe	2.50%	3.62%	14.69%	6.16%	6.21%
Templeton Global Bond Adv - TGBAX <ON WATCH>	0.30%	-2.48%	-2.33%	-1.07%	0.96%
World Govt Bond Index	0.98%	-4.75%	0.76%	3.59%	1.66%
World Bond Fund Universe	1.24%	-2.30%	4.82%	3.59%	2.35%
<u>Real Estate Fund</u>					
Cohen & Steers Realty Shares - CSRSX	12.01%	21.62%	35.75%	14.05%	9.18%
FTSE NAREIT Equity REITs Index	12.03%	21.35%	32.80%	11.97%	8.10%
Real Estate Fund Universe	11.34%	20.43%	36.79%	10.81%	7.03%
<u>Balanced Fund</u>					
T.Rowe Price Capital Appreciation - PACLX	5.53%	9.79%	29.33%	16.33%	13.75%
60% Large Cap Value Univ & 40% Taxable Bond Universe	4.56%	10.24%	27.50%	10.11%	9.16%
60% Russell 1000 Value & 40% Agg Bond Index	3.91%	9.56%	26.08%	9.63%	8.35%
<u>Large Cap Equities - Value</u>					
Hartford Dividend & Growth - HDGTX	6.06%	17.16%	41.90%	15.59%	14.86%
T.Rowe Price Equity Income - PRFDX	4.48%	18.46%	47.77%	11.46%	12.33%
Russell 1000 Value Index	5.21%	17.05%	43.68%	12.42%	11.87%
Large Cap Value Fund Universe	5.51%	17.52%	42.88%	11.93%	12.07%
<u>Large Cap Equities - Blend</u>					
Vanguard Institutional Index - VINIX	8.54%	15.24%	40.77%	18.65%	17.62%
Vanguard Dividend Growth Fund - VDIGX	6.56%	11.10%	33.04%	17.04%	14.69%
S&P 500 Index	8.55%	15.25%	40.79%	18.67%	17.65%
Large Cap Blend Fund Universe	7.55%	14.84%	40.47%	16.77%	16.15%
<u>Large Cap Equities - Growth</u>					
Wells Fargo Adv Growth Adm - SGRKX	10.64%	8.01%	42.87%	25.25%	24.95%
Russell 3000 Growth Index	11.38%	12.71%	42.99%	24.47%	23.31%
Franklin Growth Adv - FCGAX	9.48%	11.66%	40.64%	21.49%	20.66%
Russell 1000 Growth Index	11.93%	12.99%	42.50%	25.14%	23.66%
Large Cap Growth Fund Universe	10.28%	12.38%	41.70%	22.56%	21.98%
<u>Mid Cap Equities - Value</u>					
Virtus Mid Cap Value Equity I - SMVTX	7.25%	19.56%	49.24%	12.09%	13.15%
Russell Mid Cap Value	5.66%	19.45%	53.06%	11.86%	11.79%
Mid Cap Value Fund Universe	4.90%	21.28%	55.83%	11.08%	11.93%
<u>Mid Cap Equities - Blend</u>					
Columbia Mid Cap Index A - NTIAX	3.51%	17.31%	52.49%	12.62%	13.74%
S&P Mid Cap 400	3.64%	17.59%	53.24%	13.17%	14.29%
Mid Cap Blend Fund Universe	5.47%	17.04%	50.44%	13.15%	13.75%
<u>Mid Cap Equities - Growth</u>					
Prudential Jennison Mid Cap Growth - PEGZX <ON WATCH>	7.16%	8.33%	48.79%	23.70%	19.88%
Russell Mid Cap Growth	11.07%	10.44%	43.77%	22.39%	20.52%
Mid Cap Growth Fund Universe	7.00%	10.80%	48.17%	21.26%	20.18%
Fund Returns in RED do not meet both benchmarks. Fund Returns in BLACK meet both benchmarks.					

NDPERS Investment Benchmarks - 2nd Quarter 2021					
	Quarter	Y-T-D	1-Year	3-Year	5-Year
<u>Small Cap Equities - Value</u>					
Northern Small Cap Value Fund - NOSGX	1.71%	20.93%	57.06%	6.51%	9.81%
Russell 2000 Value Index	4.56%	26.69%	73.28%	10.27%	13.62%
Small Value Fund Universe	4.45%	26.79%	71.02%	9.35%	12.17%
<u>Small Cap Equities - Blend</u>					
DFA US Small Cap - DFSTX	4.21%	23.34%	65.00%	11.23%	14.04%
Russell 2000 Index	4.29%	17.54%	62.03%	13.52%	16.47%
Small Blend Fund Universe	4.36%	20.19%	60.18%	11.32%	13.88%
<u>Small Cap Equities - Growth</u>					
Brown Capital Mgmt Small Co Inv - BCSIX	3.97%	-2.40%	22.89%	15.70%	20.15%
Russell 2000 Growth Index	3.92%	8.98%	51.36%	15.94%	18.76%
Small Growth Fund Universe	4.88%	12.40%	55.69%	19.34%	20.72%
<u>International Equity Funds</u>					
American Funds New Perspective Fund - RNPEX	8.20%	10.57%	45.76%	19.98%	19.22%
Vanguard Total Intl Stock Index Inv - VTIAH	5.52%	9.68%	36.51%	9.60%	11.10%
MSCI ACWI Index	5.48%	9.16%	35.72%	9.38%	11.08%
International Stock Fund Universe	5.12%	9.07%	33.76%	8.50%	10.08%
Invesco Developing Markets Y - ODVYX	5.62%	6.49%	37.16%	11.49%	13.82%
MSCI Emerging Markets Index	5.05%	7.45%	40.90%	11.27%	13.03%
Diversified Emerging Mkts Universe	5.47%	8.73%	41.79%	11.48%	12.18%
<u>Asset Allocation Funds:</u>					
TIAA-CREF Lifecycle Ret Income - TLIRX	3.90%	4.86%	16.29%	8.65%	7.97%
Income Benchmark	4.22%	4.98%	16.07%	9.06%	7.62%
TIAA-CREF Lifecycle 2010 - TCLEX	3.83%	4.78%	16.33%	8.67%	8.20%
2010 Benchmark	4.14%	4.79%	15.70%	8.98%	7.53%
TIAA-CREF Lifecycle 2015 - TCLIX	4.11%	5.37%	18.14%	9.17%	8.83%
2015 Benchmark	4.48%	5.56%	17.75%	9.55%	8.16%
TIAA-CREF Lifecycle 2020 - TCLTX	4.48%	6.04%	20.07%	9.66%	9.58%
2020 Benchmark	4.79%	6.29%	19.84%	10.16%	8.84%
TIAA-CREF Lifecycle 2025 - TCLFX	4.92%	7.05%	23.29%	10.44%	10.61%
2025 Benchmark	5.29%	7.51%	23.28%	11.12%	9.93%
TIAA-CREF Lifecycle 2030 - TCLNX	5.48%	8.24%	26.80%	11.28%	11.64%
2030 Benchmark	5.83%	8.84%	27.05%	12.15%	11.12%
TIAA-CREF Lifecycle 2035 - TCLRX	5.94%	9.39%	30.25%	12.04%	12.64%
2035 Benchmark	6.37%	10.18%	30.82%	13.19%	12.32%
TIAA-CREF Lifecycle 2040 - TCLOX	6.41%	10.59%	33.89%	12.78%	13.62%
2040 Benchmark	6.88%	11.54%	34.58%	14.15%	13.47%
TIAA-CREF Lifecycle 2045 - TTFRX	6.90%	11.87%	37.57%	13.54%	14.34%
2045 Benchmark	7.38%	12.92%	38.38%	15.11%	14.63%
TIAA-CREF Lifecycle 2050 - TLFrx	7.00%	12.14%	38.33%	13.71%	14.51%
2050 Benchmark	7.54%	13.34%	39.56%	15.41%	14.99%
TIAA-CREF Lifecycle 2055 - TTRLX	7.05%	12.30%	38.80%	13.78%	14.64%
2055 Benchmark	7.61%	13.53%	40.08%	15.54%	15.15%
TIAA-CREF Lifecycle 2060 - TLXRX	7.19%	12.55%	39.31%	13.92%	14.76%
2060 Benchmark	7.68%	13.72%	40.61%	15.67%	15.31%
Income Benchmark is comprised of 24.5% Wilshire 5000, 10.5% MSCI ACWI, 50.0% Ag Bond, 5.0% REIT Index, 10.0% 3 Month T-Bill					
2010 Benchmark is comprised of 24.15% Wilshire 5000, 10.35% MSCI ACWI, 51.0% Ag Bond, 4.5% REIT Index, 10.0% 3 Month T-Bill					
2015 Benchmark is comprised of 27.3% Wilshire 5000, 11.7% MSCI ACWI, 47.6% Ag Bond, 5.0% REIT Index, 8.4% 3 Month T-Bill					
2020 Benchmark is comprised of 30.8% Wilshire 5000, 13.2% MSCI ACWI, 44.6% Ag Bond, 5.0% REIT Index, 6.4% 3 Month T-Bill					
2025 Benchmark is comprised of 36.54% Wilshire 5000, 15.66% MSCI ACWI, 38.4% Ag Bond, 5.0% REIT Index, 4.4% 3 Month T-Bill					
2030 Benchmark is comprised of 42.84% Wilshire 5000, 18.36% MSCI ACWI, 31.4% Ag Bond, 5.0% REIT Index, 2.4% 3 Month T-Bill					
2035 Benchmark is comprised of 49.14% Wilshire 5000, 21.06% MSCI ACWI, 24.4% Ag Bond, 5.0% REIT Index, 0.4% 3 Month T-Bill					
2040 Benchmark is comprised of 55.4% Wilshire 5000, 23.76% MSCI ACWI, 15.8% Ag Bond, 5.0% REIT Index, 0% 3 Month T-Bill					
2045 Benchmark is comprised of 61.74% Wilshire 5000, 26.46% MSCI ACWI, 6.8% Ag Bond, 5.0% REIT Index, 0% 3 Month T-Bill					
2050 Benchmark is comprised of 63.7% Wilshire 5000, 27.3% MSCI ACWI, 4.0% Ag Bond, 5.0% REIT Index, 0% 3 Month T-Bill					
2055 Benchmark is comprised of 64.58% Wilshire 5000, 27.67% MSCI ACWI, 2.75% Ag Bond, 5.0% REIT Index, 0% 3 Month T-Bill					
2060 Benchmark is comprised of 65.45% Wilshire 5000, 28.05% MSCI ACWI, 1.5% Ag Bond, 5.0% REIT Index, 0% 3 Month T-Bill					
Wilshire 5000 Index	8.42%	15.45%	44.24%	18.89%	17.96%
FTSE NAREIT Equity REITs Index	12.03%	21.35%	32.80%	11.97%	8.10%
MSCI ACWI Index	5.48%	9.16%	35.72%	9.38%	11.08%
US Aggregate Bond Index	1.96%	-1.67%	-0.33%	5.44%	3.07%
3 Month T-Bill Index	0.01%	0.03%	0.08%	1.31%	1.14%
Fund Returns in RED do not meet both benchmarks. Fund Returns in BLACK meet both benchmarks.					

NDPERS Mutual Fund Research - Q2 2021

Large Value

Fund	Symbol	Assets	Inception	Tenure	Ratio	Yield	Turnover	P/E	Rating	3 - Year	5 - Year	3-month	1-Year	3-Year	5-Year	10-Year	R-Squared	Beta	Alpha	Deviation	Ratio
Hartford Dividend & Growth	HDGTX	13.4 Billion	12/22/2006	Team	0.75%	1.23	28%	17.3	5-Stars	12	9	6.06%	41.90%	15.59%	14.86%	12.69%	94	0.96	-1.97	18.33	0.82
T.Rowe Price Equity Income	PRFDX	18.7 Billion	10/31/1985	5 years	0.65%	1.70	24%	15.2	3-Stars	61	52	4.48%	47.77%	11.46%	12.33%	10.70%	87	1.06	-6.87	21.05	0.56

Large Blend

Fund	Symbol	Assets	Inception	Tenure	Ratio	Yield	Turnover	P/E	Rating	3 - Year	5 - Year	3-month	1-Year	3-Year	5-Year	10-Year	R-Squared	Beta	Alpha	Deviation	Ratio	
T.Rowe Price Capital Appreciation (Balanced)	PACLX	51.3 Billion	3/6/1990	14 Years	0.99%	0.76	87%	23.8	5-Stars	3	5	5.53%	29.33%	16.33%	13.75%	12.33%					12.60	1.17
Vanguard 500 Index	VINIX	287.8 Billion	9/29/2006	20 Years	0.04%	1.34	4%	21.6	5-Stars	25	24	8.54%	40.77%	18.65%	17.62%	14.81%	100	1.00	-0.02	18.52	0.95	
Vanguard Dividend Growth	VDIGX	51.2 Billion	2/1/2006	15 Years	0.26%	1.51	15%	24.4	3-Stars	55	80	6.56%	33.04%	17.04%	14.69%	13.45%	89	0.81	1.50	15.97	0.99	

Large Growth

Fund	Symbol	Assets	Inception	Tenure	Ratio	Yield	Turnover	P/E	Rating	3 - Year	5 - Year	3-month	1-Year	3-Year	5-Year	10-Year	R-Squared	Beta	Alpha	Deviation	Ratio
Wells Fargo Adv Growth Adm	SGRKX	6.4 Billion	8/30/2002	Team	0.96%	0.00	37%	39.9	3-Stars	22	16	10.64%	42.87%	25.25%	24.95%	16.67%	83	1.13	4.05	23.06	1.04
Franklin Growth Adv	FCGAX	21.8 Billion	12/31/1996	Team	0.57%	0.24	9%	30.6	3-Stars	57	60	9.48%	40.64%	21.49%	20.66%	15.68%	96	1.00	2.43	18.93	1.06

Medium Value

Fund	Symbol	Assets	Inception	Manager	Expense Ratio	Yield	Turnover	P/E	Rating	Mom-Star	Category Rank	3 - Year	5 - Year	3-month	1-Year	3-Year	5-Year	10-Year	Standard Deviation	R-Squared	Beta	Alpha	Deviation	Sharpe Ratio
Virtus Mid Cap Value Equity I	SMVTX	3.6 Billion	11/30/2001	19 Years	1.04%	0.66	179%	18.7	3-Stars			33	27	7.25%	49.24%	12.09%	13.15%	11.01%	87	1.18	-7.82	23.56	0.56	

Medium Blend

Fund	Symbol	Assets	Inception	Manager	Expense Ratio	Yield	Turnover	P/E	Rating	Mom-Star	Category Rank	3 - Year	5 - Year	3-month	1-Year	3-Year	5-Year	10-Year	Standard=R-Squared	S&P 500 Index	Beta	Alpha	Deviation	Sharpe Ratio
Columbia Mid Cap Index A	NTIAX	3.3 Billion	5/31/2000	Team	0.45%	0.76	14%	18.7	3-Stars			59	51	3.51%	52.49%	12.62%	13.74%	11.89%	90	1.22	-8.00	23.80	0.57	

Medium Growth

Fund	Symbol	Assets	Inception	Manager	Expense Ratio	Yield	Turnover	P/E	Rating	Mom-Star	Category Rank	3 - Year	5 - Year	3-month	1-Year	3-Year	5-Year	10-Year	Standard=R-Squared	S&P 500 Index	Beta	Alpha	Deviation	Sharpe Ratio
Prudential Jennison Mid Cap Growth (WATCH)	PEGZX	3.0 Billion	12/31/1996	Team	0.74%	0.00	58%	37.7	3-Stars			27	45	7.16%	48.79%	23.70%	19.88%	14.00%	84	1.06	3.69	21.38	1.05	

Small Value

Fund	Symbol	Assets	Inception	Manager	Expense Ratio	Yield	Turnover	P/E	Rating	Mom-Star	Category Rank	3 - Year	5 - Year	3-month	1-Year	3-Year	5-Year	10-Year	Standard-R	S&P 500 Index	Beta	Alpha	Deviation	Sharpe Ratio
Northern Small Cap Value	NOSGX	2.8 Billion	3/31/1994	19 Years	1.00%	0.93	28%	13.2	3-Stars		81	82		1.71%	57.06%	6.51%	9.81%	9.79%	81	1.22	-13.31	25.19	0.33	

Small Blend

Fund	Symbol	Assets	Inception	Tenure	Ratio	Yield	Turnover	P/E	Rating	3 - Year	5 - Year	3-month	1-Year	3-Year	5-Year	10-Year	R-Squared	Beta	Alpha	Deviation	Ratio
DFA Small Cap	DFSTX	16.3 Billion	3/19/1992	Team	0.33%	0.95	3%	15.0	3-Stars	58	53	4.21%	65.00%	11.23%	14.04%	11.86%	85	1.30	-9.79	25.73	0.50

Small Growth

Fund	Symbol	Assets	Inception	Manager	Expense Ratio	Yield	Turnover	P/E	Rating	Mom-Star	Category Rank	3 - Year	5 - Year	3-month	1-Year	3-Year	5-Year	10-Year	Standard-Dev	S&P 500 Index	Beta	Alpha	Deviation	Sharpe
Brown Capital Mgmt Small Co Inv	BCSIX	7.1 Billion	1/2/1996	Team	1.24%	0.00	9%	54.3	3-Stars		70	50		3.97%	22.89%	15.70%	20.15%	15.93%	64	1.11	-2.94		25.74	0.65

International					Manager	Expense				Morn-Star	Category	Rank		Average Return					Standard=ACWI Index				Standard	Sharpe
Fund	Symbol	Assets	Inception	Tenure	Ratio	Yield	Turnover	P/E	Rating	3 - Year	5 - Year		3-month	1-Year	3-Year	5-Year	10-Year	R-Squared	Beta	Alpha	Deviation	Ratio		
American Funds New Perspective	RNPEX	143.6 Billion	5/28/2002		0.77%	0.10	26%	29.9	4-Stars	36	35		8.20%	45.76%	19.98%	19.22%	13.30%	97	1.04	4.33	18.90	1.00		
Vanguard Total Intl Stock Index Inv	VTIAX	48.6 Billion	4/29/1996	12 Years	0.11%	2.41	7%	16.1	4-Stars	28	26		5.52%	36.51%	9.60%	11.10%	5.71%	99	1.02	0.11	18.06	0.53		
Invesco Developing Markets Y	ODVYX	50.1 Billion	9/7/2005	13 Years	0.97%	0.21	30%	23.2	4-Stars	40	28		5.62%	37.16%	11.49%	13.82%	5.99%	92	1.00	2.10	18.35	0.62		
Target Date / Others					Manager	Expense				Morn-Star	Category	Rank		Average Return					Standard=S&P 500 Index				Standard	Sharpe
Fund	Symbol	Assets	Inception	Tenure	Ratio	Yield	Turnover	P/E	Rating	3 - Year	5 - Year		3-month	1-Year	3-Year	5-Year	10-Year	R-Squared	Beta	Alpha	Deviation	Ratio		
Vanguard Treasury Money Market	VUSXX	26.9 Billion		1 Year	0.09%								0.01%	0.01%	1.21%	1.06%	0.55%				N/A	N/A		
Wells Fargo Stable Return Fund J	WFSJ	30.3 Billion	10/1/1985		0.90%								0.30%	1.41%	1.54%	1.37%	1.17%	N/A	N/A	N/A	N/A	N/A		
Mass Mutual Premier Bond Fund	MIPYX	0.37 Billion	12/31/2003	12 Years	0.67%	0.84	N/A		4-Stars	20	21		3.41%	8.17%	6.53%	4.26%	3.36%	N/A	N/A	N/A	4.95	1.05		
Baird Core Plus Bond Fund	BCOSX	31.9 Billion	9/29/2000	20 Years	0.55%	2.06	N/A		3-Stars	40	46		2.06%	1.52%	5.99%	3.76%	4.08%	N/A	N/A	N/A	4.23	1.12		
Vanguard Total Bond Market Index Fund	VBTLX	80.0 Billion	11/12/2001	8 Years	0.05%	2.00	N/A		3-Stars	43	53		2.00%	-0.42%	5.38%	2.99%	3.36%	N/A	N/A	N/A	3.63	1.15		
Prudential High Yield Z	PHYZZ	22.9 Billion	3/1/1996	Team	0.54%	5.67	N/A		5-Stars	12	8		2.85%	16.20%	7.89%	7.80%	6.85%	N/A	N/A	N/A	9.89	0.70		
Templeton Global Bond Adv (WATCH)	TGBAX	11.5 Billion	12/31/1996	Team	0.67%	2.71	N/A		2-Stars	94	93		0.30%	-2.33%	-1.07%	0.96%	1.28%	N/A	N/A	N/A	5.93	-0.36		
Cohen & Steers Realty Shares	CSRSX	7.5 Billion	7/2/1991	Team	88.00%	1.91	62%	45.6	4-Stars	15	13		12.01%	35.75%	14.05%	9.18%	10.27%	N/A	N/A	N/A	17.89	0.76		
TIAA-CREF Lifecycle Ret Income	TLIRX	615 Million	11/30/2007	Team	0.62%	2.19	30%	20.0	4-Stars	48	34		3.90%	16.29%	8.65%	7.97%	6.61%	N/A	N/A	N/A	8.43	0.88		
TIAA-CREF Lifecycle 2010	TCLEX	1.3 Billion	10/15/2004	Team	0.62%	1.94	28%	20.0	4-Stars	52	21		3.83%	16.33%	8.67%	8.20%	6.89%	N/A	N/A	N/A	8.55	0.87		
TIAA-CREF Lifecycle 2015	TCLIX	1.8 Billion	10/15/2004	Team	0.63%	1.87	26%	20.0	4-Stars	49	22		4.11%	18.14%	9.17%	8.83%	7.35%	N/A	N/A	N/A	9.45	0.84		
TIAA-CREF Lifecycle 2020	TCLTX	4.0 Billion	10/15/2004	Team	0.64%	1.84	26%	20.0	4-Stars	55	26		4.48%	20.07%	9.66%	9.58%	7.90%	N/A	N/A	N/A	10.34	0.82		
TIAA-CREF Lifecycle 2025	TCLFX	5.5 Billion	10/15/2004	Team	0.66%	1.69	28%	20.0	4-Stars	52	25		4.92%	23.29%	10.44%	10.61%	8.57%	N/A	N/A	N/A	11.85	0.79		
TIAA-CREF Lifecycle 2030	TCNLX	5.9 Billion	10/15/2004	Team	0.67%	1.68	26%	20.0	4-Stars	58	24		5.48%	26.80%	11.28%	11.64%	9.21%	N/A	N/A	N/A	13.34	0.78		
TIAA-CREF Lifecycle 2035	TCLRX	6.1 Billion	10/15/2004	Team	0.68%	1.57	23%	20.0	4-Stars	62	27		5.94%	30.25%	12.04%	12.64%	9.81%	N/A	N/A	N/A	14.85	0.76		
TIAA-CREF Lifecycle 2040	TCLOX	7.3 Billion	10/15/2004	Team	0.69%	1.54	23%	20.0	3-Stars	62	24		6.41%	33.89%	12.78%	13.62%	10.36%	N/A	N/A	N/A	16.35	0.74		
TIAA-CREF Lifecycle 2045	TTFRX	4.7 Billion	11/30/2007	Team	0.70%	1.99	19%	20.0	4-Stars	52	15		6.90%	37.57%	13.54%	14.34%	10.70%	N/A	N/A	N/A	17.63	0.74		
TIAA-CREF Lifecycle 2050	TLFRX	3.5 Billion	11/30/2007	Team	0.70%	1.97	18%	20.0	4-Stars	55	14		7.00%	38.33%	13.71%	14.51%	10.79%	N/A	N/A	N/A	17.83	0.74		
TIAA-CREF Lifecycle 2055	TTRLX	1.5 Billion	4/29/2011	Team	0.70%	1.94	18%	20.0	4-Stars	55	18		7.05%	38.80%	13.78%	14.64%	10.86%	N/A	N/A	N/A	18.02	0.74		
TIAA-CREF Lifecycle 2060	TLRXR	424 Million	9/26/2014	Team	0.70%	1.86	22%	20.0	4-Stars	56	18		7.19%	39.31%	13.92%	14.76%	N/A	N/A	N/A	N/A	18.18	0.74		
R-squared - This compares a fund's performance to a given index. If R-squared is 100, the fund moves in lockstep with the index to which it is being compared. Generally, a higher R-squared will indicate a more useful beta figure. If the R-squared is lower, then the beta is less relevant to the fund's performance.																								
Beta - This compares a fund's volatility to a given index. If beta is greater than 1, the fund is more volatile than the index to which it is being compared. If beta is lower than 1, the fund is less volatile than the index. If a fund's R-squared is low, beta is less reliable as a predictor of volatility.																								
Alpha - This is a measure of risk-adjusted performance. The higher a fund's alpha, the better it has done. A fund's alpha is only reliable when its R-squared is relatively high.																								
Standard Deviation - The higher this number is, the more volatile the fund's returns have been. It indicates how much the fund has deviated from its mean total return over the past three years.																								
Sharpe Ratio - This measure combines standard deviation and mean total return to show a risk-adjusted measure of the fund's performance. The higher this number is, the better. As a rule of thumb, a Sharpe ratio of more than 1.00 is very good.																								

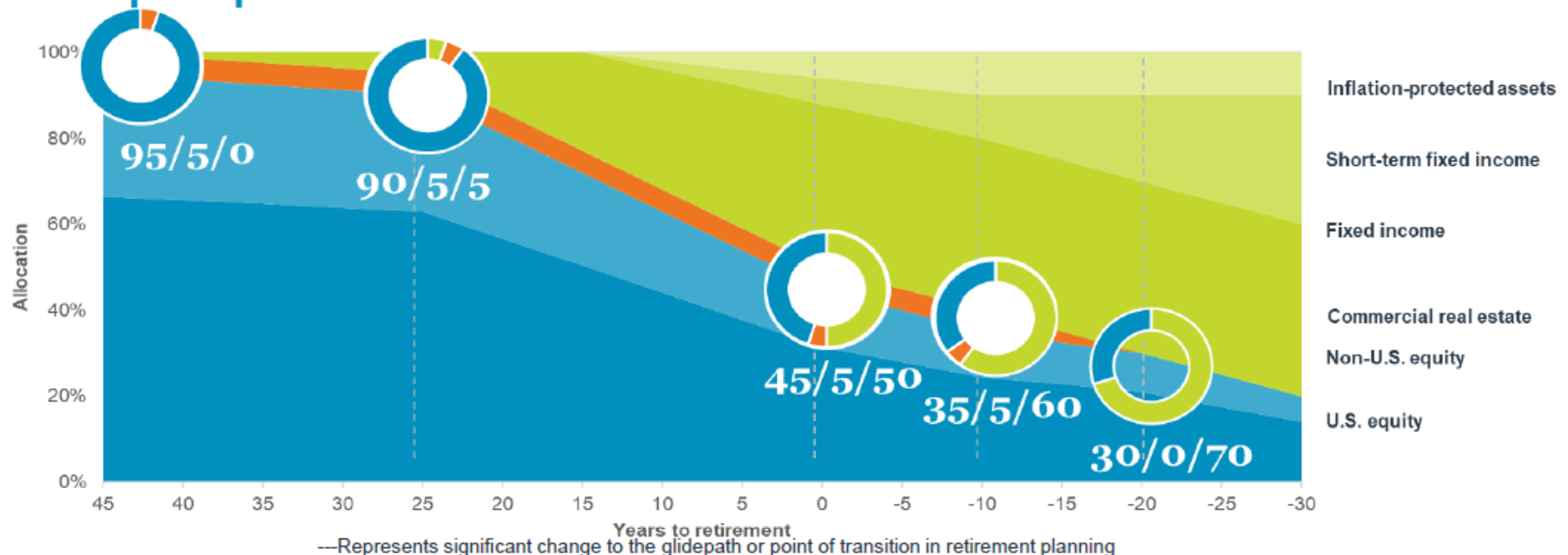
TIAA-CREF Lifecycle Funds

Glidepath profile



Hypothetical changes as you move towards retirement

Glidepath profile allocations



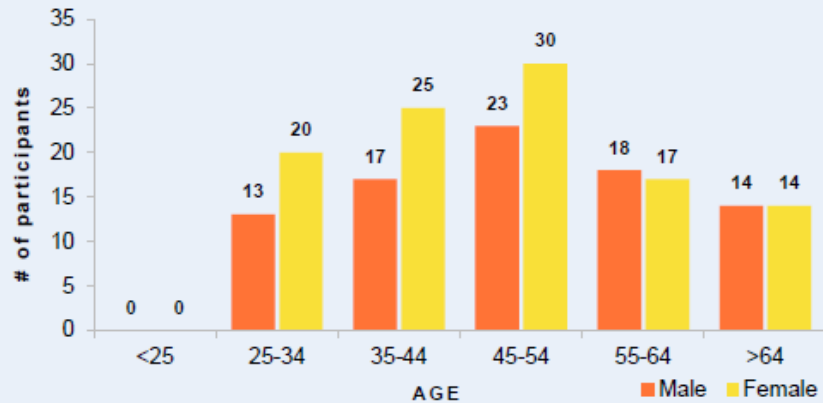
Glidepath allocation	Equity	Fixed income	Real estate
Starting Allocation	95.0%	0.0%	5.0%
25 yrs. to Retirement	90.0%	5.0%	5.0%
15 yrs. to Retirement	72.0%	23.0%	5.0%
At Retirement	45.0%	50.0%	5.0%
10 yrs. post Retirement	35.0%	60.0%	5.0%
15 yrs. post Retirement	32.5%	65.0%	2.5%
20 yrs. post Retirement	30.0%	70.0%	0.0%
30 yrs. post Retirement	20.0%	80.0%	0.0%

Source: Nuveen as of December 31, 2020

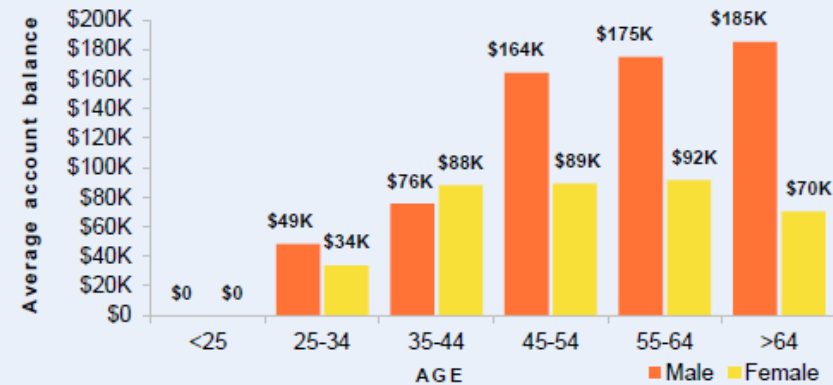
* The above chart represents strategic asset allocation progression of one of a series of balanced funds with target retirement dates at 5-year intervals. Asset allocations represent the exposures sought at the given number of years before the maturity of the fund and are not actual mutual fund exposures. Allocations are presented for information only and may not represent the actual allocation at the time of investment.

Employee summary: Gender and age¹

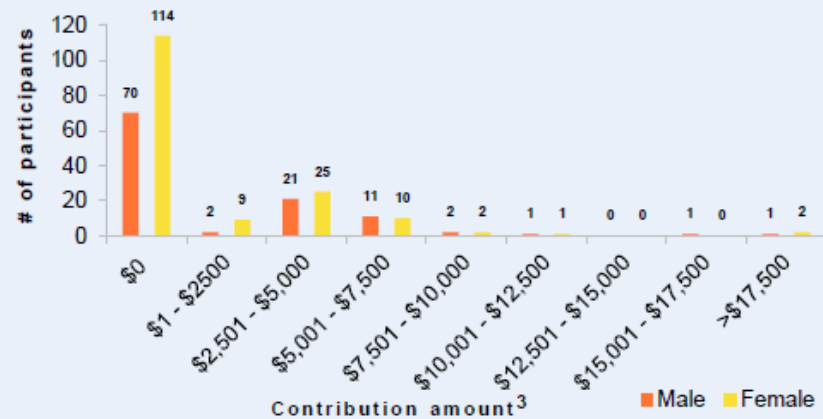
Demographics by Age and Gender



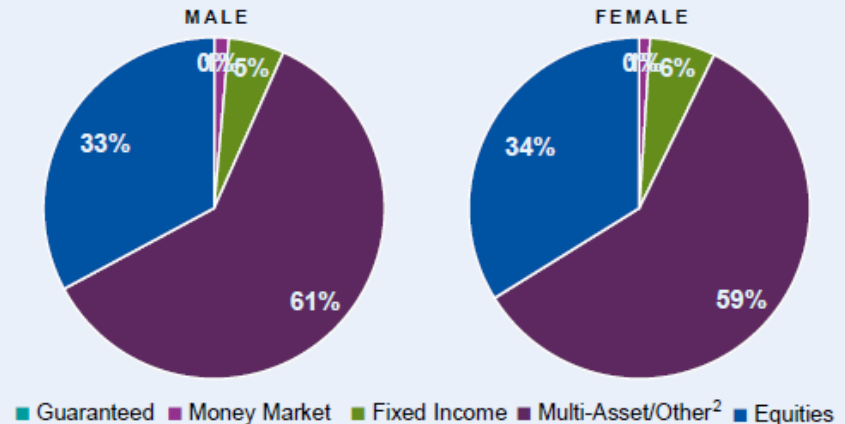
Average Account Balance by Age and Gender



Employee Contribution Amounts by Gender

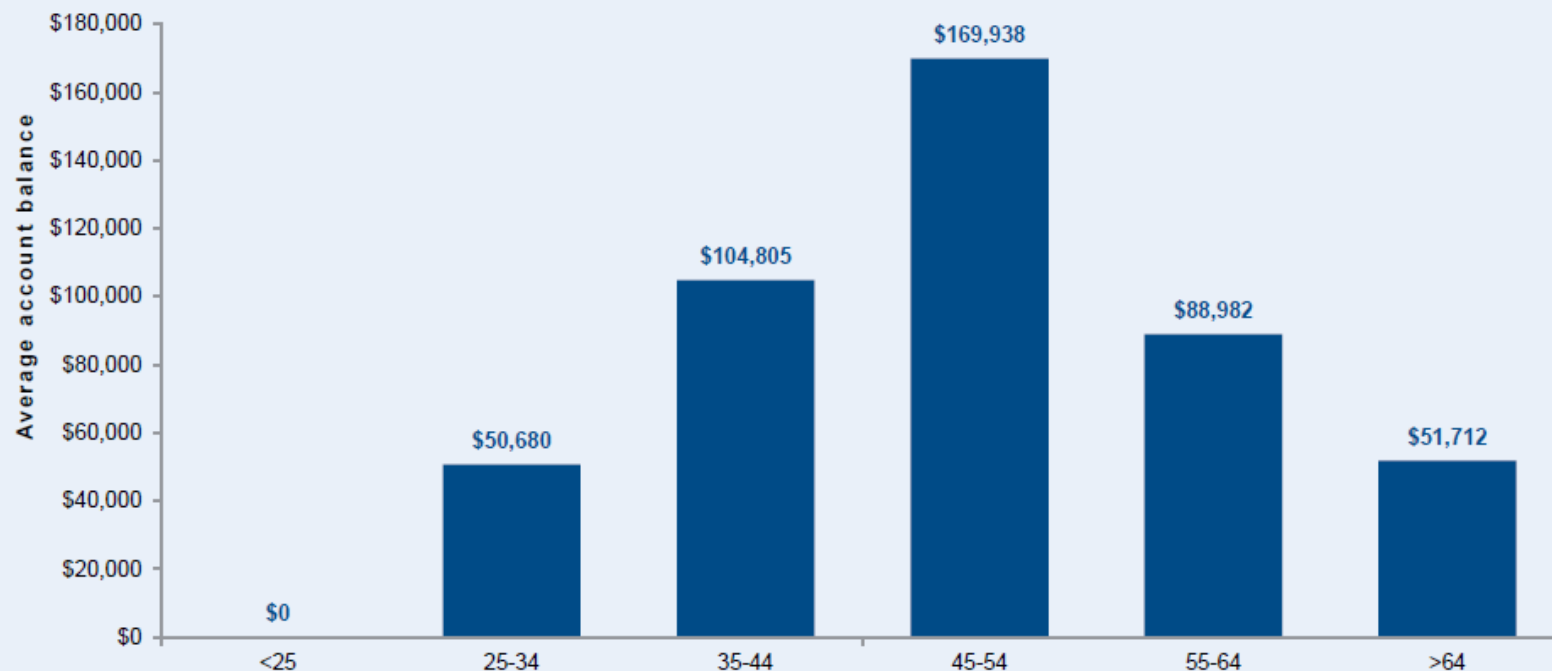


Diversification by Gender



This report is as of the period ending 06/30/2021 and reflects the trailing 12 months of activity unless otherwise noted. The report includes all TIAA plans except 457(f), 457(b) Private, Nonqualified Deferred Compensation, and Retirement Healthcare plans. 1. Data reflected is for all participant statuses except Employee Contribution Amounts by Gender which includes only active or leave status. Does not include 2 participants with no age or gender on file. 2. Multi-Asset/Other includes Lifecycle, Real Estate, and Brokerage. 3. Contribution data reflects the trailing 12 months of data.

Active participants: Average account balance by age



	<25	25-34	35-44	45-54	55-64	>64	Total
# of Active Participants	0	18	28	26	15	3	90
% of Total Active Participants	0%	20%	31%	29%	17%	3%	100%
Total Active Assets	\$0	\$912,248	\$2,934,545	\$4,418,385	\$1,334,734	\$155,136	\$9,755,049
% of Total Active Assets	0%	9%	30%	45%	14%	2%	100%

This report is as of the period ending 06/30/2021 and reflects the trailing 12 months of activity unless otherwise noted. The report includes all TIAA plans except 457(f), 457(b) Private, Nonqualified Deferred Compensation, and Retirement Healthcare plans.