



North Dakota PERS Defined Contribution Plans

Fourth Quarter 2023
Executive Summary

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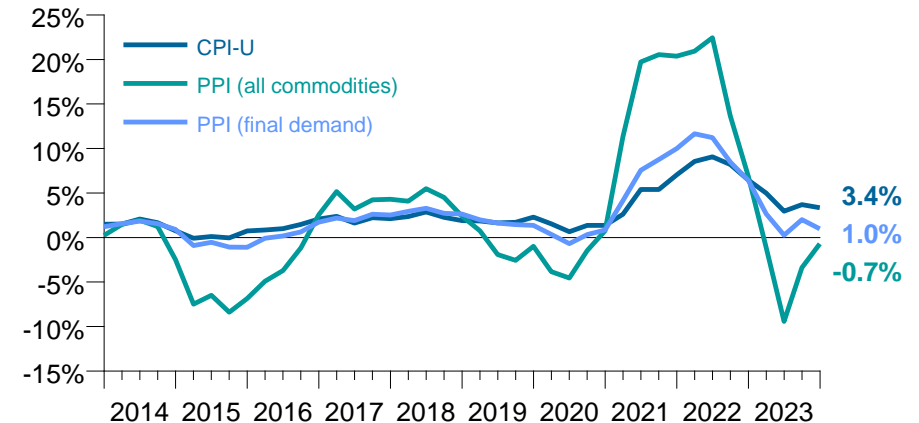
Market Update

U.S. Economy—Summary

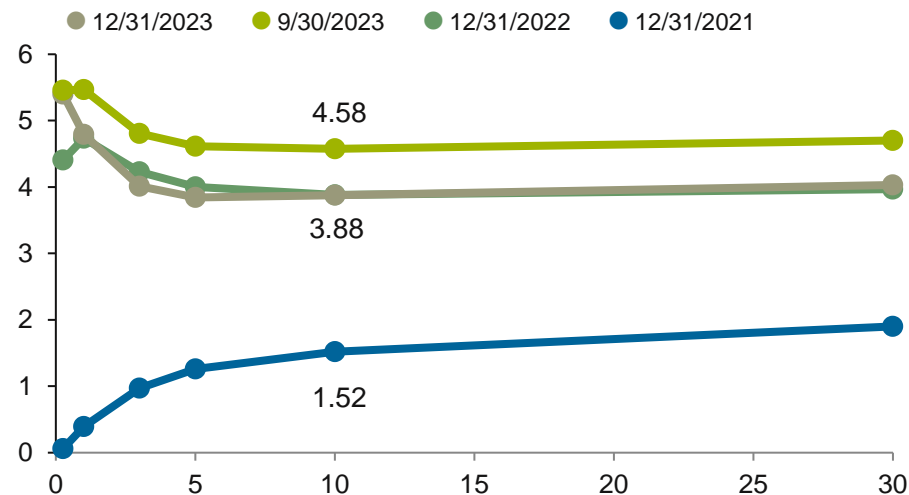
For periods ended 12/31/23

- U.S. real GDP increased at an annualized rate of 3.3% in the fourth quarter, according to the “advance” estimate. In the third quarter, real GDP increased at an annualized rate of 4.9%.
- Headline CPI increased 3.4% year-over-year in December, while core CPI (ex food and energy) increased 3.9% over the same period.
- The Fed held short-term rates steady at both the November and December FOMC meetings, with a current target range of 5.25-5.50%.
- The unemployment rate was unchanged at 3.7% in December.

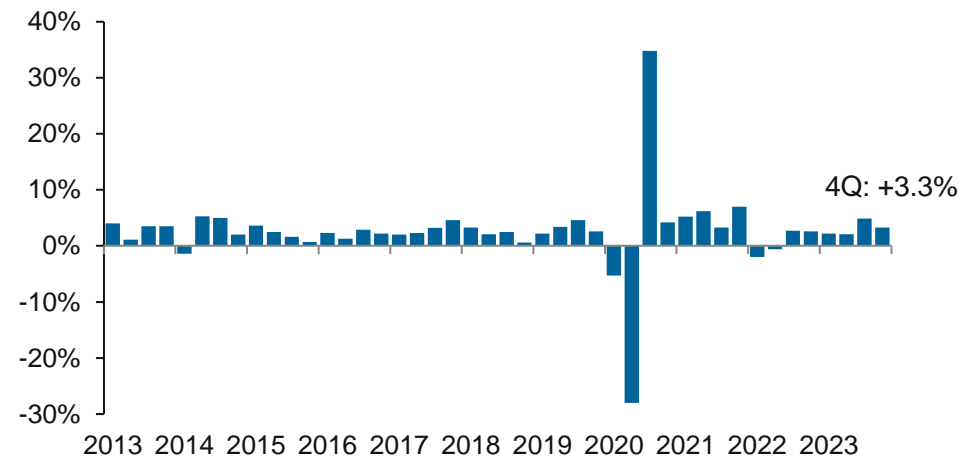
Inflation Year-Over-Year



U.S. Treasury Yield Curves



Quarterly Real GDP Growth



Sources: Bloomberg, Bureau of Labor Statistics, Callan

Callan Periodic Table of Investment Returns

Annual Returns				Last Four Quarters				Monthly Returns		
2020	2021	2022	2023	Q1 '23	Q2 '23	Q3 '23	Q4 '23	Oct 23	Nov 23	Dec 23
Small Cap Equity	Large Cap Equity	Private Real Estate	Large Cap Equity	Dev Non-U.S. Equity	Large Cap Equity	High Yield	REITS	Interm. Fixed Income	REITS	Small Cap Equity
19.96%	28.71%	7.56%	26.29%	8.47%	8.74%	0.46%	15.29%	-0.46%	10.63%	12.22%
Large Cap Equity	REITS	Interm. Fixed Income	Dev Non-U.S. Equity	Large Cap Equity	Small Cap Equity	Interm. Fixed Income	Small Cap Equity	Private Real Estate	Dev Non-U.S. Equity	REITS
18.40%	26.09%	-8.23%	18.24%	7.50%	5.21%	-0.83%	14.03%	-0.71%	9.28%	9.46%
EM Equity	Private Real Estate	High Yield	Small Cap Equity	EM Equity	Dev Non-U.S. Equity	Private Real Estate	Large Cap Equity	High Yield	Large Cap Equity	Dev Non-U.S. Equity
18.31%	21.88%	-11.19%	16.93%	3.96%	2.95%	-2.12%	11.69%	-1.16%	9.13%	5.31%
Dev Non-U.S. Equity	Small Cap Equity	U.S. Fixed Income	High Yield	High Yield	High Yield	EM Equity	Dev Non-U.S. Equity	U.S. Fixed Income	Small Cap Equity	Large Cap Equity
7.82%	14.82%	-13.01%	13.44%	3.57%	1.75%	-2.93%	10.42%	-1.58%	9.05%	4.54%
U.S. Fixed Income	Dev Non-U.S. Equity	Dev Non-U.S. Equity	EM Equity	U.S. Fixed Income	EM Equity	U.S. Fixed Income	EM Equity	Large Cap Equity	EM Equity	EM Equity
7.51%	11.26%	-14.45%	9.83%	2.96%	0.90%	-3.23%	7.86%	-2.10%	8.00%	3.91%
High Yield	High Yield	Large Cap Equity	REITS	Small Cap Equity	REITS	Large Cap Equity	High Yield	EM Equity	High Yield	U.S. Fixed Income
7.11%	5.28%	-18.11%	9.67%	2.74%	0.27%	-3.27%	7.16%	-3.89%	4.53%	3.83%
Interm. Fixed Income	Interm. Fixed Income	EM Equity	U.S. Fixed Income	Interm. Fixed Income	Interm. Fixed Income	Dev Non-U.S. Equity	U.S. Fixed Income	Dev Non-U.S. Equity	U.S. Fixed Income	High Yield
6.43%	-1.44%	-20.09%	5.53%	2.33%	-0.81%	-4.11%	6.82%	-4.05%	4.53%	3.73%
Private Real Estate	U.S. Fixed Income	Small Cap Equity	Interm. Fixed Income	REITS	U.S. Fixed Income	Small Cap Equity	Interm. Fixed Income	REITS	Interm. Fixed Income	Interm. Fixed Income
0.75%	-1.54%	-20.44%	5.24%	0.78%	-0.84%	-5.13%	4.56%	-4.79%	2.67%	2.32%
REITS	EM Equity	REITS	Private Real Estate	Private Real Estate	Private Real Estate	REITS	Private Real Estate	Small Cap Equity	Private Real Estate	Private Real Estate
-9.04%	-2.54%	-25.10%	-10.36%	-3.50%	-3.05%	-5.86%	-2.12%	-6.82%	-0.71%	-0.71%

Sources: ● Bloomberg Aggregate ● Bloomberg Corp High Yield ● Bloomberg Int. Gov/Credit ● NCREIF ODCE Equal Weight Net

● EPRA/NAREIT Developed ● MSCI EAFE ● MSCI Emerging Markets ● Russell 2000 ● S&P 500

Callan

North Dakota PERS DC Plans

457 & 401(a) Investment Structure

Tier I: Asset Allocation	Tier II: Core	Tier III: Specialty
Target Date TIAA-CREF Lifecycle Retirement 5-Year Increments	Capital Preservation Galliard Stable Value Vanguard Treasury MM	
Balanced TRP Capital Appreciation	Domestic Fixed Income Vanguard Total Bond Index Baird Core Plus Bond	Specialty Fixed Income MassMutual Inflation Protected PGIM High Yield Templeton Global Bond
	Large Cap U.S. Equity Franklin Growth Fund Allspring Growth Vanguard Dividend and Income Vanguard Institutional Index Hartford Dividend and Growth T. Rowe Price Equity Income	
	Mid Cap U.S. Equity PGIM Jennison Mid-Cap Growth Columbia Mid Cap Index Fund Virtus Ceredex Mid Cap Value	
	Small Cap U.S. Equity Brown Small Company Fund DFA U.S. Small Cap Northern Small Cap Value Fund	
	International Equity AF New Perspective Vanguard Total Intn'l Stock	Specialty International Equity Invesco Developing Markets
		Specialty Sector Fund Cohen & Steers Realty Shares
		Brokerage Window

Plan Performance Monitoring

As of December 31, 2023

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years
Asset Allocation Funds					
TIAA-CREF Lifecycle Ret. Inc	7.17%	10.55%	1.04%	5.62%	5.03%
LifeCycle Ret Income CB	7.62%	11.60%	1.30%	6.15%	5.42%
Callan Tgt Dt Idx 2010	7.61%	10.90%	1.18%	5.66%	5.05%
TIAA-CREF Lifecycle Ret. 2010	7.02%	10.64%	1.03%	5.66%	5.13%
LifeCycle 2010 CB	7.62%	11.39%	1.27%	6.16%	5.49%
Callan Tgt Dt Idx 2010	7.61%	10.90%	1.18%	5.66%	5.05%
TIAA-CREF Lifecycle Ret. 2015	7.26%	10.90%	1.16%	6.08%	5.49%
LifeCycle 2015 Cust Bnch	8.03%	12.26%	1.59%	6.68%	5.94%
CAI Tgt Dt Idx 2015	7.79%	11.30%	1.37%	6.00%	5.35%
TIAA-CREF Lifecycle Ret. 2020	7.60%	11.68%	1.40%	6.55%	5.93%
LifeCycle 2020 Cust Bnchm	8.39%	13.13%	1.93%	7.25%	6.46%
CAI Tgt Dt Idx 2020	8.07%	11.95%	1.71%	6.57%	5.89%
TIAA-CREF Lifecycle Ret. 2025	8.04%	12.83%	1.83%	7.34%	6.58%
LifeCycle 2025 Cust Bnch	8.80%	14.22%	2.42%	8.00%	7.11%
CAI Tgt Dt Idx 2025	8.57%	13.21%	2.36%	7.51%	6.69%
TIAA-CREF Lifecycle Ret. 2030	8.62%	14.39%	2.40%	8.20%	7.28%
LifeCycle 2030 Cust Bnch	9.29%	15.60%	3.02%	8.85%	7.82%
CAI Tgt Dt Idx 2030	9.19%	14.88%	3.16%	8.53%	7.53%
TIAA-CREF Lifecycle Ret. 2035	9.25%	16.13%	3.06%	9.11%	8.00%
LifeCycle 2035 Cust Bnch	9.85%	17.28%	3.76%	9.77%	8.58%
CAI Tgt Dt Idx 2035	9.76%	16.59%	4.08%	9.54%	8.33%
TIAA-CREF Lifecycle Ret. 2040	9.83%	18.04%	3.83%	10.07%	8.74%
LifeCycle 2040 Cust Bnch	10.42%	19.06%	4.63%	10.73%	9.36%
CAI Tgt Dt Idx 2040	10.21%	18.04%	4.81%	10.30%	8.92%
TIAA-CREF Lifecycle Ret. 2045	10.26%	19.18%	4.37%	10.83%	9.26%
LifeCycle 2045 Cust Bnch	10.71%	20.15%	5.24%	11.49%	9.91%
CAI Tgt Dt Idx 2045	10.54%	19.07%	5.32%	10.82%	9.29%
TIAA-CREF Lifecycle Ret. 2050	10.34%	19.67%	4.51%	10.98%	9.38%
LifeCycle 2050 Cust Bnch	10.85%	20.64%	5.41%	11.68%	10.06%
CAI Tgt Dt Idx 2050	10.72%	19.66%	5.57%	11.05%	9.46%
TIAA-CREF Lifecycle Ret. 2055	10.45%	19.98%	4.62%	11.11%	9.48%
LifeCycle 2055 Cust Bnch	10.91%	20.86%	5.53%	11.82%	10.17%
CAI Tgt Dt Idx 2055	10.80%	19.92%	5.68%	11.14%	9.53%
TIAA-CREF Lifecycle Ret. 2060	10.49%	20.08%	4.71%	11.23%	9.58%
LifeCycle 2060 Cust Bnch	10.96%	21.08%	5.64%	11.95%	10.28%
Callan Tgt Dt Idx 2055	10.80%	19.92%	5.68%	11.14%	9.53%
T. Rowe Capital Appreciation Adv	8.21%	18.52%	7.16%	12.48%	11.01%
S&P 500 Index	11.69%	26.29%	10.00%	15.69%	13.42%

Plan Performance Monitoring

As of December 31, 2023

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years
Large Cap U.S. Equity					
Franklin Growth Fund Advisor	13.43%	27.99%	5.48%	15.29%	14.04%
S&P 500 Index	11.69%	26.29%	10.00%	15.69%	13.42%
AlIspring Growth Adm	13.77%	33.78%	(3.22%)	13.18%	14.07%
Russell 3000 Growth Index	14.09%	41.21%	8.08%	18.85%	17.03%
Vanguard Dividend Growth Inv	10.38%	8.10%	8.68%	13.50%	12.30%
S&P 500 Index	11.69%	26.29%	10.00%	15.69%	13.42%
Vanguard Institutional Index	11.68%	26.24%	9.96%	15.66%	13.38%
S&P 500 Index	11.69%	26.29%	10.00%	15.69%	13.42%
Hartford Dividend and Growth R5	10.18%	14.09%	10.96%	13.58%	11.29%
S&P 500 Index	11.69%	26.29%	10.00%	15.69%	13.42%
T. Rowe Price Equity Income	10.42%	9.65%	10.05%	11.32%	8.77%
Russell 1000 Value Index	9.50%	11.46%	8.86%	10.91%	8.32%
Mid Cap U.S. Equity					
PGIM Jennison Mid-Cap Growth Z	11.02%	20.60%	0.87%	15.03%	12.41%
Russell MidCap Growth Idx	14.55%	25.87%	1.31%	13.81%	12.49%
Columbia Mid Cap Index Fund A	11.57%	15.97%	7.61%	12.11%	8.86%
S&P Mid Cap 400 Index	11.67%	16.44%	8.09%	12.62%	9.37%
Virtus Ceredex Mid-Cap Value I	11.80%	10.97%	7.20%	10.13%	7.58%
Russell MidCap Value Idx	12.11%	12.71%	8.36%	11.16%	7.76%
Small Cap U.S. Equity					
Brown Small Company Fund Investor	8.74%	19.12%	(10.88%)	5.85%	7.89%
Russell 2000 Growth Index	12.75%	18.66%	(3.50%)	9.22%	8.08%
DFA U.S. Small Cap Inst'l	13.67%	17.64%	9.93%	12.45%	8.25%
Russell 2000 Index	14.03%	16.93%	2.22%	9.97%	7.33%
Northern Small Cap Value Fund	14.29%	15.55%	9.37%	9.34%	5.30%
Russell 2000 Value Index	15.26%	14.65%	7.94%	10.00%	6.10%
Non-U.S. Equity					
AF New Perspective R4	11.37%	24.57%	2.82%	13.51%	12.53%
MSCI ACWI	11.03%	22.20%	5.75%	11.72%	10.05%
Vanguard Total Int'l Stock Adm	9.97%	15.52%	1.77%	7.34%	6.51%
FTSE GI All Cap ex US Idx	9.77%	15.79%	1.87%	7.45%	6.55%
Invesco Developing Markets Y	6.99%	11.40%	(8.14%)	2.52%	4.35%
MSCI EM	7.86%	9.83%	(5.08%)	3.69%	4.98%

Plan Performance Monitoring

As of December 31, 2023

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years
Fixed Income					
Vanguard Total Bond Index Adm	6.69%	5.70%	(3.36%)	1.11%	1.30%
Blmbg:Aggregate Flt Adj	6.72%	5.60%	(3.33%)	1.17%	1.34%
Baird Core Plus Bond Investor	7.01%	6.60%	(2.92%)	1.74%	1.76%
Blmbg:Universal	6.83%	6.17%	(2.97%)	1.44%	1.57%
MM Premier Infl-Pr and Inc Svc	4.97%	5.43%	(1.07%)	3.07%	2.43%
Blmbg:TIPS	4.71%	3.90%	(1.00%)	3.15%	2.49%
PGIM High Yield Fund Z	6.87%	12.16%	1.77%	5.25%	4.64%
Blmbg HY Corp 1% Iss Cap	7.14%	13.46%	1.98%	5.25%	4.47%
Templeton Global Bond Advisor	9.58%	2.71%	(2.74%)	(2.32%)	(1.09%)
FTSE WGBI	8.08%	5.19%	(7.18%)	(1.39%)	(0.09%)
Capital Preservation					
Galliard Stable Value J	0.56%	2.13%	1.59%	1.80%	1.65%
3-month Treasury Bill	1.37%	5.01%	2.15%	1.88%	1.73%
Vanguard Treasury MM Inv	1.34%	5.05%	2.17%	1.82%	1.67%
3-month Treasury Bill	1.37%	5.01%	2.15%	1.88%	1.73%
Sector Funds					
Cohen & Steers Realty Shares	17.10%	12.67%	6.43%	9.25%	6.91%
FTSE NAREIT All Eq Index	17.98%	11.36%	5.70%	7.59%	6.00%

Plan Investment Fees

As of December 31, 2023

Asset Class and Strategy	Ticker/Vehicle	Total Annual Operating Expense Ratio (Peer Ranking*)	Revenue Sharing %	Callan Peer Group Median**
Asset Allocation Funds				
TIAA-CREF Lifecycle Ret. Inc	TLIRX	0.62% (34)	0.25%	0.51%
TIAA-CREF Lifecycle Ret. 2010	TCLEX	0.62% (19)	0.25%	0.37%
TIAA-CREF Lifecycle Ret. 2015	TCLIX	0.63% (22)	0.25%	0.46%
TIAA-CREF Lifecycle Ret. 2020	TCLTX	0.64% (25)	0.25%	0.48%
TIAA-CREF Lifecycle Ret. 2025	TCLFX	0.66% (28)	0.25%	0.50%
TIAA-CREF Lifecycle Ret. 2030	TCLNX	0.67% (26)	0.25%	0.52%
TIAA-CREF Lifecycle Ret. 2035	TCLRX	0.68% (26)	0.25%	0.53%
TIAA-CREF Lifecycle Ret. 2040	TCLOX	0.69% (26)	0.25%	0.50%
TIAA-CREF Lifecycle Ret. 2045	TTFRX	0.70% (26)	0.25%	0.53%
TIAA-CREF Lifecycle Ret. 2050	TLFRX	0.70% (27)	0.25%	0.53%
TIAA-CREF Lifecycle Ret. 2055	TTRLX	0.70% (26)	0.25%	0.53%
TIAA-CREF Lifecycle Ret. 2060	TLXRX	0.70% (26)	0.25%	0.54%
TIAA-CREF Lifecycle Ret. 2065	TSFRX	0.70%	0.25%	-
T. Rowe Capital Appreciation Adv	PACLX	0.98% (7)	0.40%	0.70%
U.S. Equity				
Large Cap U.S. Equity				
Franklin Growth Fund Advisor	FCGAX	0.55% (88)	0.25%	0.73%
Allspring Growth Adm	SGRKX	0.96% (9)	0.35%	0.73%
Vanguard Dividend Growth Inv	VDIGX	0.30% (94)	0.00%	0.62%
Vanguard Institutional Index	VINIX	0.04% (99)	0.00%	0.62%
Hartford Dividend and Growth R5	HDGTX	0.73% (44)	0.10%	0.70%
T. Rowe Price Equity Income	PRFDX	0.67% (55)	0.15%	0.70%
Mid Cap U.S. Equity				
PGIM Jennison Mid-Cap Growth Z	PEGZX	0.71% (84)	0.25%	0.83%
Columbia Mid Cap Index Fund A	NTIAX	0.45% (97)	0.35%	0.83%
Virtus Ceredex Mid-Cap Value I	SMVTX	1.01% (7)	0.35%	0.84%
Small Cap U.S. Equity				
Brown Small Compay Fund Investor	BCSIX	1.28% (6)	0.20%	0.96%
DFA U.S. Small Cap Inst'l	DFSTX	0.27% (100)	0.00%	0.93%
Northern Small Cap Value Fund	NOSGX	1.00% (20)	0.25%	0.92%
Non-U.S. Equity				
AF New Perspective R4	RNPEX	0.76% (68)	0.35%	0.85%
Vanguard Total Int'l Stock Adm	VTIAX	0.11% (99)	0.00%	0.84%
Invesco Developing Markets Y	ODVYX	0.99% (68)	0.25%	1.11%
Fixed Income				
Vanguard Total Bond Index Adm	VBTLX	0.05% (98)	0.00%	0.44%
Baird Core Plus Bond Investor	BCOSX	0.55% (28)	0.28%	0.47%
MM Premier Infl-Pr and Inc Svc	MIPYX	0.67% (35)	0.25%	0.41%
PGIM High Yield Fund Z	PHYZX	0.51% (92)	0.25%	0.68%
Templeton Global Bond Advisor	TGBAX	0.72% (24)	0.25%	0.61%
Capital Preservation				
Galliard Stable Value J	CIT	0.87% (17)	0.50%	0.63%
Vanguard Treasury MM Inv	VUSXX	0.09% (95)	0.00%	0.15%
Sector Funds				
Cohen & Steers Realty Shares	CSRSX	0.88% (39)	0.25%	0.82%

Fees for Stable Value funds are supplied by the manager. Fee information is provided by the recordkeeper. This data is not audited by Callan.

* A higher peer group ranking is more favorable.

** The peer group median is for the total annual operating expense ratio. Funds in the peer group may or may not contain revenue sharing.

Summary Updates

- Templeton Global Bond Plus and Allspring Growth remain on the watch list
 - **Templeton:**
 - Templeton has experienced a decline in assets that is worth monitoring
 - The manager has mixed performance relative to the benchmark over trailing periods, although shorter term returns have improved
 - The fund has experienced turnover at the analyst level
 - Global Fixed Income is a strategy in the fixed income line-up being reviewed as part of the investment structure analysis
 - **Allspring:**
 - Allspring Growth was added to the watch list in 4Q21 as a result of the organizational structure change
 - Wells Fargo announced the sale of Wells Fargo Asset Management to private equity firms GTCR and Reverence Capital in 2021
 - The change in firm ownership warrants monitoring as the investment team assimilates to the new ownership structure
 - Additionally, performance has struggled relative to the benchmark and peer median
 - Large Cap Growth is a strategy in the equity line-up being reviewed as part of the investment structure analysis

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