



North Dakota PERS Defined Contribution Plans

Third Quarter 2023
Executive Summary

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Callan

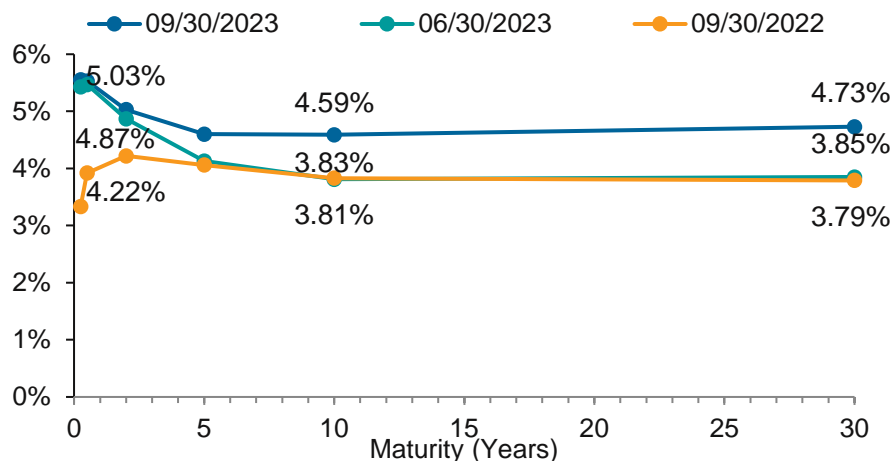
Market Update

U.S. Economy

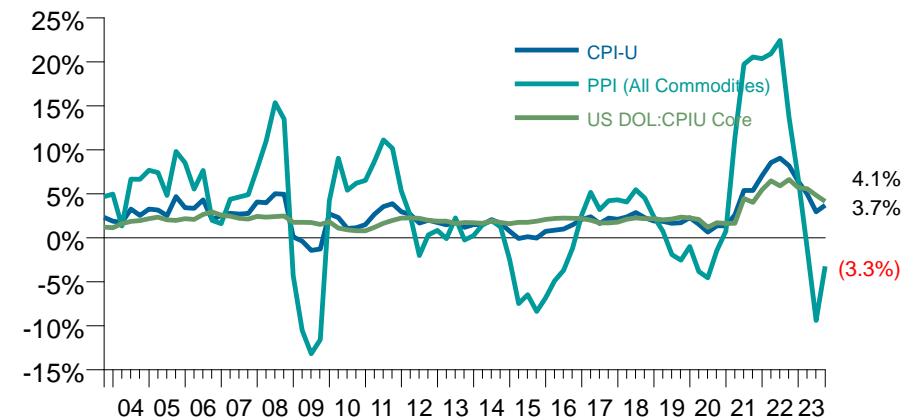
Third Quarter 2023

- U.S. economy grew 4.9% in Q3 driven by consumer spending on both services and goods.
- Headline inflation increased to 3.7% year-over-year at the end of September, up from 3.0% at the end of June.
- Following a 25 bp rate hike in July, the Federal Reserve held rates steady at their September meeting (target range 5.25-5.50%).
- Unemployment increased slightly to 3.8% in the third quarter. There was a gain in the labor force of more than 700,000 workers.

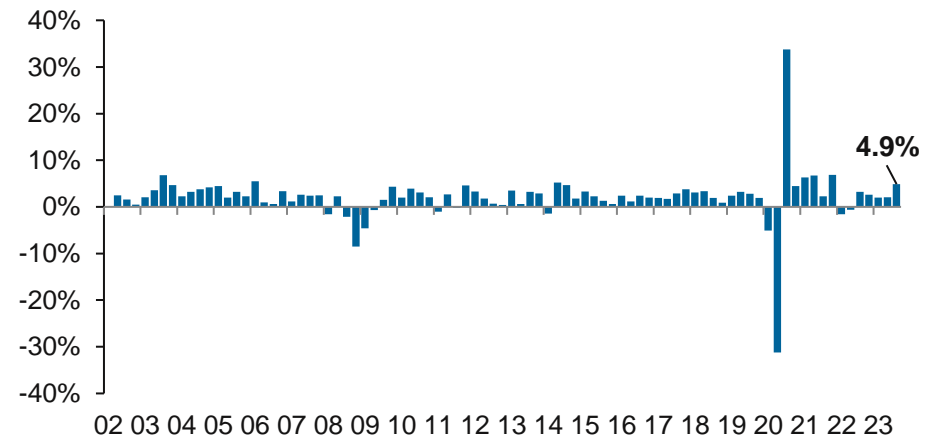
U.S. Treasury Yield Curves



Inflation Year-Over-Year



Quarterly Real GDP Growth



Callan Periodic Table of Investment Returns

Annual Returns					Cumulative Returns					
2018	2019	2020	2021	2022	15 Years	10 Years	5 Years	3 Years	1 Year	1 Quarter
NCREIF:NFI-ODCE Val Wt Nt	Large Cap Equity	Small Cap Equity	Large Cap Equity	NCREIF:NFI-ODCE Val Wt Nt	Large Cap Equity	Large Cap Equity	Large Cap Equity	Large Cap Equity	Dev ex-U.S. Equity	High Yield
7.36%	31.49%	19.96%	28.71%	6.55%	11.28%	11.91%	9.92%	10.15%	24.00%	0.46%
U.S. Fixed Income	Small Cap Equity	Large Cap Equity	NCREIF:NFI-ODCE Val Wt Nt	High Yield	Small Cap Equity	NCREIF:NFI-ODCE Val Wt Nt	NCREIF:NFI-ODCE Val Wt Nt	Small Cap Equity	Large Cap Equity	NCREIF:NFI-ODCE Val Wt Nt
0.01%	25.52%	18.40%	21.02%	-11.19%	8.13%	7.19%	4.72%	7.16%	21.62%	-2.10%
High Yield	Dev ex-U.S. Equity	Emerging Market Equity	Small Cap Equity	U.S. Fixed Income	High Yield	Small Cap Equity	Dev ex-U.S. Equity	NCREIF:NFI-ODCE Val Wt Nt	Emerging Market Equity	Emerging Market Equity
-2.08%	22.49%	18.31%	14.82%	-13.01%	7.25%	6.65%	3.44%	6.19%	11.70%	-2.93%
Global ex-U.S. Fixed Income	Emerging Market Equity	Global ex-U.S. Fixed Income	Dev ex-U.S. Equity	Dev ex-U.S. Equity	NCREIF:NFI-ODCE Val Wt Nt	High Yield	High Yield	Dev ex-U.S. Equity	High Yield	U.S. Fixed Income
-2.15%	18.44%	10.11%	12.62%	-14.29%	4.65%	4.24%	2.96%	6.07%	10.28%	-3.23%
Large Cap Equity	High Yield	Dev ex-U.S. Equity	High Yield	Large Cap Equity	Dev ex-U.S. Equity	Dev ex-U.S. Equity	Small Cap Equity	High Yield	Small Cap Equity	Large Cap Equity
-4.38%	14.32%	7.59%	5.28%	-18.11%	4.59%	3.84%	2.40%	1.76%	8.93%	-3.27%
Small Cap Equity	U.S. Fixed Income	U.S. Fixed Income	U.S. Fixed Income	Global ex-U.S. Fixed Income	Emerging Market Equity	Emerging Market Equity	Emerging Market Equity	Emerging Market Equity	Global ex-U.S. Fixed Income	Global ex-U.S. Fixed Income
-11.01%	8.72%	7.51%	-1.54%	-18.70%	3.76%	2.07%	0.56%	-1.73%	3.39%	-4.00%
Dev ex-U.S. Equity	Global ex-U.S. Fixed Income	High Yield	Emerging Market Equity	Emerging Market Equity	U.S. Fixed Income	U.S. Fixed Income	U.S. Fixed Income	U.S. Fixed Income	U.S. Fixed Income	Dev ex-U.S. Equity
-14.09%	5.09%	7.11%	-2.54%	-20.09%	2.53%	1.13%	0.10%	-5.21%	0.64%	-4.10%
Emerging Market Equity	NCREIF:NFI-ODCE Val Wt Nt	NCREIF:NFI-ODCE Val Wt Nt	Global ex-U.S. Fixed Income	Small Cap Equity	Global ex-U.S. Fixed Income	Global ex-U.S. Fixed Income	Global ex-U.S. Fixed Income	Global ex-U.S. Fixed Income	NCREIF:NFI-ODCE Val Wt Nt	Small Cap Equity
-14.57%	4.39%	0.34%	-7.05%	-20.44%	0.40%	-1.73%	-3.10%	-8.39%	-12.88%	-5.13%

Sources: ● Bloomberg U.S. Aggregate Bond ● Bloomberg Corp High Yield ● Bloomberg Global Aggregate ex U.S.
 ● NCREIF ODCE Val Wtd ● MSCI World ex USA ● 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 September 30, 2023

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years
Asset Allocation Funds					
TIAA-CREF Lifecycle Ret. Inc	(2.42%)	7.87%	0.85%	2.99%	3.91%
LifeCycle Ret Income CB	(2.63%)	8.79%	0.97%	3.59%	4.27%
Callan Tgt Dt Idx 2010	(2.64%)	7.95%	0.69%	3.26%	3.83%
TIAA-CREF Lifecycle Ret. 2010	(2.29%)	8.03%	0.92%	3.02%	4.05%
LifeCycle 2010 CB	(2.50%)	8.39%	0.93%	3.54%	4.36%
Callan Tgt Dt Idx 2010	(2.64%)	7.95%	0.69%	3.26%	3.83%
TIAA-CREF Lifecycle Ret. 2015	(2.51%)	8.38%	1.22%	3.19%	4.39%
LifeCycle 2015 Cust Bnch	(2.67%)	9.26%	1.34%	3.81%	4.77%
CAI Tgt Dt Idx 2015	(2.72%)	8.42%	0.99%	3.44%	4.13%
TIAA-CREF Lifecycle Ret. 2020	(2.67%)	9.22%	1.56%	3.36%	4.82%
LifeCycle 2020 Cust Bnchm	(2.80%)	10.17%	1.85%	4.11%	5.29%
CAI Tgt Dt Idx 2020	(2.83%)	9.15%	1.50%	3.72%	4.70%
TIAA-CREF Lifecycle Ret. 2025	(2.83%)	10.56%	2.23%	3.73%	5.44%
LifeCycle 2025 Cust Bnch	(2.92%)	11.39%	2.52%	4.49%	5.93%
CAI Tgt Dt Idx 2025	(3.00%)	10.60%	2.45%	4.23%	5.49%
TIAA-CREF Lifecycle Ret. 2030	(2.99%)	12.23%	2.97%	4.13%	6.09%
LifeCycle 2030 Cust Bnch	(3.06%)	12.91%	3.33%	4.95%	6.62%
CAI Tgt Dt Idx 2030	(3.20%)	12.47%	3.53%	4.76%	6.33%
TIAA-CREF Lifecycle Ret. 2035	(3.18%)	14.30%	3.81%	4.56%	6.77%
LifeCycle 2035 Cust Bnch	(3.19%)	14.84%	4.26%	5.46%	7.35%
CAI Tgt Dt Idx 2035	(3.33%)	14.51%	4.73%	5.33%	7.09%
TIAA-CREF Lifecycle Ret. 2040	(3.36%)	16.36%	4.77%	5.02%	7.48%
LifeCycle 2040 Cust Bnch	(3.28%)	16.82%	5.33%	5.99%	8.12%
CAI Tgt Dt Idx 2040	(3.42%)	16.26%	5.68%	5.74%	7.65%
TIAA-CREF Lifecycle Ret. 2045	(3.53%)	17.74%	5.54%	5.41%	7.93%
LifeCycle 2045 Cust Bnch	(3.30%)	18.05%	6.22%	6.45%	8.64%
CAI Tgt Dt Idx 2045	(3.50%)	17.49%	6.33%	6.03%	7.99%
TIAA-CREF Lifecycle Ret. 2050	(3.52%)	18.33%	5.72%	5.50%	8.06%
LifeCycle 2050 Cust Bnch	(3.31%)	18.59%	6.44%	6.56%	8.78%
CAI Tgt Dt Idx 2050	(3.53%)	18.19%	6.62%	6.15%	8.14%
TIAA-CREF Lifecycle Ret. 2055	(3.56%)	18.62%	5.84%	5.56%	8.15%
LifeCycle 2055 Cust Bnch	(3.31%)	18.85%	6.59%	6.63%	8.89%
CAI Tgt Dt Idx 2055	(3.55%)	18.49%	6.74%	6.19%	8.20%
TIAA-CREF Lifecycle Ret. 2060	(3.58%)	18.73%	5.97%	5.62%	8.23%
LifeCycle 2060 Cust Bnch	(3.31%)	19.11%	6.75%	6.71%	9.00%
Callan Tgt Dt Idx 2055	(3.55%)	18.49%	6.74%	6.19%	8.20%
T. Rowe Capital Appreciation Adv	(1.47%)	15.46%	8.18%	9.27%	9.78%
S&P 500 Index	(3.27%)	21.62%	10.15%	9.92%	12.24%

Plan Performance Monitoring

As of September 30, 2023

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years
Large Cap U.S. Equity					
Franklin Growth Fund Advisor	(4.72%)	20.73%	5.33%	8.81%	12.22%
S&P 500 Index	(3.27%)	21.62%	10.15%	9.92%	12.24%
Allspring Growth Adm	(6.41%)	19.49%	(1.97%)	6.13%	11.32%
Russell 3000 Growth Index	(3.34%)	26.63%	7.54%	11.70%	15.05%
Vanguard Dividend Growth Inv	(5.47%)	10.78%	8.22%	9.20%	10.88%
S&P 500 Index	(3.27%)	21.62%	10.15%	9.92%	12.24%
Vanguard Institutional Index	(3.28%)	21.58%	10.12%	9.89%	12.21%
S&P 500 Index	(3.27%)	21.62%	10.15%	9.92%	12.24%
Hartford Dividend and Growth R5	(2.64%)	15.36%	12.33%	8.75%	10.79%
S&P 500 Index	(3.27%)	21.62%	10.15%	9.92%	12.24%
T. Rowe Price Equity Income	(3.17%)	12.09%	13.44%	6.30%	8.33%
Russell 1000 Value Index	(3.16%)	14.44%	11.05%	6.23%	7.92%
Mid Cap U.S. Equity					
PGIM Jennison Mid-Cap Growth Z	(5.91%)	17.78%	4.10%	9.06%	10.88%
Russell MidCap Growth Idx	(5.22%)	17.47%	2.61%	6.97%	10.40%
Columbia Mid Cap Index Fund A	(4.28%)	14.96%	11.53%	5.57%	8.26%
S&P Mid Cap 400 Index	(4.20%)	15.51%	12.05%	6.06%	8.77%
Virtus Ceredex Mid-Cap Value I	(4.22%)	11.35%	9.00%	4.66%	7.02%
Russell MidCap Value Idx	(4.46%)	11.05%	10.98%	5.18%	6.83%
Small Cap U.S. Equity					
Brown Small Company Fund Investor	(6.14%)	6.25%	(8.01%)	(1.55%)	6.38%
Russell 2000 Growth Index	(7.32%)	9.59%	1.09%	1.55%	6.77%
DFA U.S. Small Cap Inst'l	(3.80%)	13.96%	14.58%	4.78%	7.95%
Russell 2000 Index	(5.13%)	8.93%	7.16%	2.40%	6.62%
Northern Small Cap Value Fund	(2.88%)	11.27%	13.41%	2.37%	5.19%
Russell 2000 Value Index	(2.96%)	7.84%	13.32%	2.59%	5.94%
Non-U.S. Equity					
AF New Perspective R4	(4.45%)	21.27%	4.56%	7.98%	10.50%
MSCI ACWI	(3.40%)	20.80%	6.89%	6.46%	8.60%
Vanguard Total Int'l Stock Adm	(4.02%)	20.46%	3.86%	2.74%	4.78%
FTSE GI All Cap ex US Idx	(3.33%)	20.40%	4.13%	2.86%	4.94%
Invesco Developing Markets Y	(6.26%)	15.95%	(4.83%)	(0.49%)	2.57%
MSCI EM	(2.93%)	11.70%	(1.73%)	0.56%	3.23%

Plan Performance Monitoring

As of September 30, 2023

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 7 Years
Fixed Income					
Vanguard Total Bond Index Adm	(3.09%)	0.73%	(5.21%)	0.13%	(0.10%)
Blmbg:Aggregate Flt Adj	(3.11%)	0.78%	(5.18%)	0.18%	(0.04%)
Baird Core Plus Bond Investor	(2.76%)	2.03%	(4.65%)	0.55%	0.43%
Blmbg:Universal	(2.88%)	1.61%	(4.68%)	0.34%	0.24%
MM Premier Infl-Pr and Inc Srvc	(1.94%)	1.55%	(2.03%)	1.94%	1.36%
Blmbg:TIPS	(2.60%)	1.25%	(1.98%)	2.12%	1.46%
PGIM High Yield Fund Z	0.35%	8.77%	1.43%	2.99%	3.86%
Blmbg HY Corp 1% Iss Cap	0.47%	10.31%	1.75%	2.84%	3.70%
Templeton Global Bond Advisor	(5.22%)	1.78%	(5.42%)	(3.76%)	(1.26%)
FTSE WGBI	(4.27%)	1.04%	(8.72%)	(2.57%)	(2.44%)
Capital Preservation					
Galliard Stable Value J	0.55%	2.00%	1.52%	1.77%	1.60%
3-month Treasury Bill	1.31%	4.47%	1.70%	1.72%	1.55%
Vanguard Treasury MM Inv	1.30%	4.55%	1.72%	1.66%	1.49%
3-month Treasury Bill	1.31%	4.47%	1.70%	1.72%	1.55%
Sector Funds					
Cohen & Steers Realty Shares	(8.86%)	(0.21%)	3.78%	4.40%	3.98%
FTSE NAREIT All Eq Index	(8.33%)	(1.71%)	2.68%	2.79%	3.03%

Plan Investment Fees

As of September 30, 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% (33)	0.25%	0.52%
TIAA-CREF Lifecycle Ret. 2010	TCLX	0.62% (17)	0.25%	0.37%
TIAA-CREF Lifecycle Ret. 2015	TCLIX	0.63% (25)	0.25%	0.50%
TIAA-CREF Lifecycle Ret. 2020	TCLTX	0.64% (28)	0.25%	0.49%
TIAA-CREF Lifecycle Ret. 2025	TCLFX	0.66% (29)	0.25%	0.51%
TIAA-CREF Lifecycle Ret. 2030	TCLNX	0.67% (29)	0.25%	0.52%
TIAA-CREF Lifecycle Ret. 2035	TCLRX	0.68% (28)	0.25%	0.53%
TIAA-CREF Lifecycle Ret. 2040	TCLOX	0.69% (28)	0.25%	0.53%
TIAA-CREF Lifecycle Ret. 2045	TTFRX	0.70% (27)	0.25%	0.54%
TIAA-CREF Lifecycle Ret. 2050	TLFRX	0.70% (28)	0.25%	0.53%
TIAA-CREF Lifecycle Ret. 2055	TTRLX	0.70% (27)	0.25%	0.54%
TIAA-CREF Lifecycle Ret. 2060	TLXRX	0.70% (25)	0.25%	0.54%
TIAA-CREF Lifecycle Ret. 2065	TSFRX	0.70%	0.25%	-
T. Rowe Capital Appreciation Adv	PACLX	0.98% (8)	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% (25)	0.15%	0.70%
Mid Cap U.S. Equity				
PGIM Jennison Mid-Cap Growth Z	PEGZX	0.71% (84)	0.25%	0.82%
Columbia Mid Cap Index Fund A	NTIAX	0.45% (97)	0.35%	0.82%
Virtus Ceredex Mid-Cap Value I	SMVTX	1.01% (10)	0.35%	0.84%
Small Cap U.S. Equity				
Brown Small Compay Fund Investor	BCSIX	1.28% (6)	0.20%	0.94%
DFA U.S. Small Cap Inst'l	DFSTX	0.27% (100)	0.00%	0.93%
Northern Small Cap Value Fund	NOSGX	1.00% (18)	0.25%	0.92%
Non-U.S. Equity				
AF New Perspective R4	RNPEX	0.76% (72)	0.35%	0.86%
Vanguard Total Int'l Stock Adm	VTIAX	0.11% (99)	0.00%	0.84%
Invesco Developing Markets Y	ODVYX	0.99% (88)	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% (33)	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% (15)	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% (41)	0.25%	0.83%

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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