

Geopolitical Upheaval; Unsettled Markets

ECONOMY

2 Capital markets reacted strongly to the upheaval and uncertainty unleashed by Russia's invasion of Ukraine. Both stocks and bonds dropped in 1Q22, and GDP fell 1.4%, but underlying strength in the U.S. economy should spare the country from a recession.

Quarterly Losses Amid Global Turmoil

INSTITUTIONAL INVESTORS

4 All institutional investor types saw declines in 1Q22, but most did better than a 60% stocks/40% bonds benchmark. Over 20 years, returns for institutional investors have roughly matched the benchmark returns, and exceeded fixed income and global ex-U.S. equities.

War, COVID Weigh on Markets Worldwide

EQUITY

6 The S&P 500 fell 4.6% in 1Q22, but was down more than 12% early in March before rallying into quarter-end. Global equity indices fell as well, as a resurgence of COVID-19 cases in Europe and Asia, specifically in China, weighed on the global recovery.

Broad Market Quarterly Returns

U.S. Equity Russell 3000



Global ex-U.S. Equity MSCI ACWI ex USA



U.S. Fixed Income Bloomberg Agg



Global ex-U.S. Fixed Income Bloomberg Global Agg ex US



Sources: Bloomberg, FTSE Russell, MSCI

Global Indices Fall, Driven by Rate Hikes

FIXED INCOME

8 The Bloomberg Aggregate fell 5.9%, its worst quarterly return since 1980. The Fed raised rates by 25 bps, with many more hikes expected. Global indices fell as well, driven by broad interest rate increases. Russia was removed from indices at a price of \$0.

Asset Class Shows Continued Gains

REAL ESTATE/REAL ASSETS

10 The NCREIF Property Index rose 5.3% during 1Q22. The NCREIF Open-End Diversified Core Equity (ODCE) Index rose 7.1%. While U.S. REITs, as measured by the FTSE Nareit Equity REITs Index, fell 3.9%, they outperformed U.S. equities. Commodities were a rare bright spot.

Where Do Investors Go From Here?

PRIVATE EQUITY

11 Except for fundraising dollar volume, all other private equity activity measures moderated in 1Q22. It was still a good quarter from a transaction volume perspective, as positive sentiment toward private equity and its ability to capitalize on volatile periods persisted.

Appealing in Climate of Low Yields

PRIVATE CREDIT

12 Private credit continues to be attractive in this low-yield environment, and the floating-rate structure of many types of private credit serves as a buffer as interest rates rise. On average, it has generated net IRRs of 8% to 10% for trailing periods ended Sep. 30, 2021.

Market Volatility Tests Managers' Strategies

HEDGE FUNDS/MACs

13 Hedge funds ended the volatile quarter with mixed results, as equity hedge managers had a difficult time. Event-driven strategies fell, due to a higher weight to equities vs. credit. Macro strategies soared, as commodities spiked. Relative value managers gained, profiting off rate volatility.

DC Index Bounces Back in 4Q After Loss

DEFINED CONTRIBUTION

15 The Callan DC Index™ rose 5.1% in 4Q21, after falling in 3Q, while the Age 45 Target Date Fund gained 5.5%. TDFs again saw the largest net inflows. Real return/TIPS had larger-than-typical net inflows (+13.6%), indicating participants may be looking to hedge inflation.

Geopolitical Upheaval and Unsettled Markets

ECONOMY | Jay Kloepfer

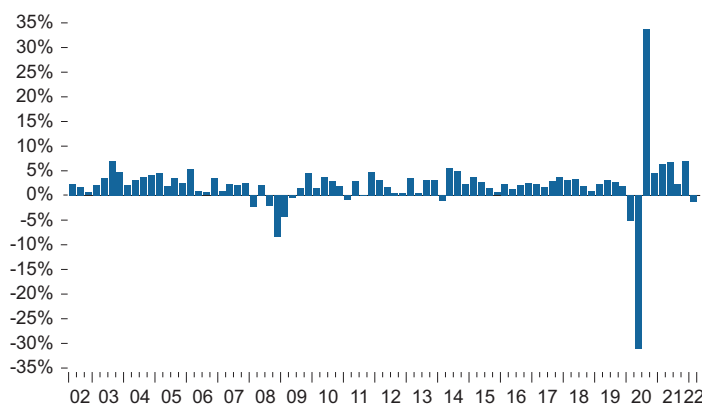
Capital markets abhor uncertainty, and there is no greater human-generated uncertainty than war. The Russian invasion of Ukraine upended expectations for an orderly slowdown in economic growth from the surge in 2021, and for the spike in inflation to subside as pandemic-induced supply chain bottlenecks cleared. Amid this geopolitical upheaval and humanitarian catastrophe, the equity and fixed income markets were both down in 1Q22. How often does that happen? More than we expected. Looking at data back to 1926, there have been 37 quarters in which returns on stocks and bonds were both negative, almost 10% of all quarters over that period. Before now, the most recent quarter was 1Q18, and before that, the 2nd and 3rd quarters of 2008, as the Global Financial Crisis (GFC) began unfolding. In case you were wondering, the S&P 500 plunged 19.6% in 1Q20, while the Bloomberg Aggregate rose 3.1%. The frequency of down quarters for both stocks and bonds has been much lower since 1990 than in the first 60 years of the data set. Looking at annual returns, there have been only two calendar years when stocks and bonds were both down, 1931 and 1969 (with a near-miss in 2018). The point: Over more recent history, stocks and bonds down together is relatively unusual.

The war also hit business and consumer confidence, and the 1Q GDP report surprised all with a 1.4% drop, following a 6.9% surge in 4Q21. The 8.3% swing in growth came from a huge drop in inventory investment and net exports. Imports surged 17.7% while exports declined 5.9%, a sharp reversal from 22.4% growth in 4Q21. The drop in GDP is a surprise because the economy is otherwise healthy, with a strong job market. Final sales to the private sector grew 3.7% in 1Q, up from 2.6% in 4Q21, suggesting strength in aggregate demand. The concern going forward is that the confidence to spend and invest will be tested by rising interest rates, skyrocketing inflation, war uncertainty, and the prospect of a recession.

The Fed raised rates at its March meeting, bringing the Fed Funds rate up to 0.25%-0.50%. Chairman Jerome Powell made a point of debunking a 75 basis point hike at the next

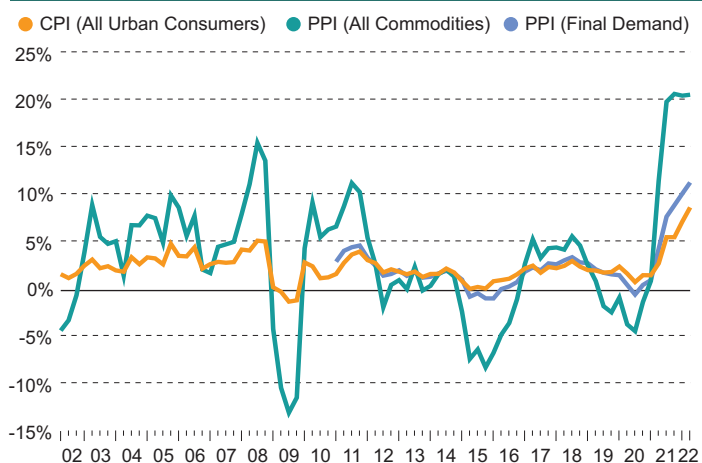
Quarterly Real GDP Growth

(20 Years)



Source: Bureau of Economic Analysis

Inflation Year-Over-Year



Source: Bureau of Labor Statistics

FOMC meeting. The median projection by FOMC members for the Fed Funds rate is 1.90% at the end of 2022, rising to 2.80% in 2023. However, the range of projections (1.4% to 3.2% by year-end) from Committee members reflects a high degree of uncertainty. As of quarter-end, the market was anticipating nine hikes in 2022, three more than expected by the Fed.

The war in Ukraine and the sanctions imposed on Russia are now piling on to supply bottlenecks, with particular concerns about food and energy supplies, and putting into question the assumption that inflation would ease later in 2022 and into 2023.

CPI-U for the U.S. hit 8.5% for the 12 months ending in March, the highest rate since the period ending December 1981. Driving the increase were prices for gasoline, shelter, and food. The energy index rose 32%, with gasoline prices up 48% year over year. The food price index rose 8.8%, and like the broad CPI, it was the biggest surge since 1981. Russia and Ukraine are vital suppliers to regional and global food supplies. In addition to price inflation, the war has raised serious concerns about the 2022 spring planting and harvest later in the year, and the potential for disaster in food-insecure parts of the globe.

The impact of the war is most direct and dramatic in eastern Europe and central Asia (EECA). The economic ties with Russia and Ukraine are extensive for many countries in the EECA bloc. Russia is the largest market for some countries, and the largest source of goods and energy for others. Tourism and foreign direct investment from Russia is substantial, and salary remittances from foreign workers in Russia are a vital source of income for many EECA countries. Poland attracted a substantial number of Ukrainian workers. Even without close ties, countries within the EECA, western Europe, Africa, and the Americas are vulnerable to disruptions in the flow of goods, services, and energy stemming from the conflict.

If recession is often identified by consecutive quarterly declines in GDP, why wouldn't the 1Q22 decline signal a potential downturn? First, aggregate demand remains robust. Second, household balance sheets are healthy. A labor market characterized by high employer demand, low unemployment (3.6% and falling), and rising compensation suggests continuing growth in consumer spending. Business investment will respond to this strong consumer demand. High frequency data show resilient growth in spending on travel and entertainment, and a recovery from the sharp drop in activity during the Omicron wave.

Recent Quarterly Economic Indicators

	1Q22	4Q21	3Q21	2Q21	1Q21	4Q20	3Q20	2Q20
Employment Cost–Total Compensation Growth	4.5%	4.0%	3.7%	2.9%	2.6%	2.5%	2.4%	2.7%
Nonfarm Business–Productivity Growth	-7.5%	6.3%	-3.9%	3.2%	2.2%	-2.8%	6.2%	10.3%
GDP Growth	-1.4%	6.9%	2.3%	6.7%	6.3%	4.5%	33.8%	-31.2%
Manufacturing Capacity Utilization	78.0%	77.0%	76.1%	75.4%	74.5%	74.0%	71.9%	64.3%
Consumer Sentiment Index (1966=100)	63.1	69.9	74.8	85.6	80.2	79.8	75.6	74.0

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve, IHS Economics, Reuters/University of Michigan

The Long-Term View

Index	1Q22	Periods Ended 12/31/21			
		1 Yr	5 Yrs	10 Yrs	25 Yrs
U.S. Equity					
Russell 3000	-5.3	11.9	15.4	14.3	9.5
S&P 500	-4.6	15.6	16.0	14.6	9.4
Russell 2000	-7.5	-5.8	9.7	11.0	8.9
Global ex-U.S. Equity					
MSCI EAFE	-5.9	1.2	6.7	6.3	5.0
MSCI ACWI ex USA	-5.4	-1.5	6.8	5.6	--
MSCI Emerging Markets	-7.0	-11.4	6.0	3.4	--
MSCI ACWI ex USA Small Cap	-6.5	0.0	7.9	7.3	6.7
Fixed Income					
Bloomberg Agg	-5.9	-4.2	2.1	2.2	4.7
90-Day T-Bill	0.0	0.1	1.1	0.6	2.0
Bloomberg Long G/C	-11.0	-3.1	4.6	4.7	6.9
Bloomberg GI Agg ex US	-6.1	-7.9	1.3	0.1	3.4
Real Estate					
NCREIF Property	5.3	21.9	8.5	9.6	9.5
FTSE Nareit Equity	-3.9	26.5	9.6	9.8	9.7
Alternatives					
CS Hedge Fund	2.1	7.5	5.5	4.7	6.6
Cambridge PE*	5.0	48.8	21.3	17.1	15.6
Bloomberg Commodity	25.5	49.3	9.0	-0.7	1.9
Gold Spot Price	6.9	13.9	9.3	1.6	7.1
Inflation – CPI-U	3.1	8.5	3.4	2.3	2.4

*Data for most recent period lags. Data as of 9/30/21.

Sources: Bloomberg, Bureau of Economic Analysis, Credit Suisse, FTSE Russell, MSCI, NCREIF, Refinitiv/Cambridge, S&P Dow Jones Indices

While expectations for economic growth in the U.S. are clearly lower since the Russian invasion, with GDP projections for 2022 down from 4% to 3% or lower, they are still positive. The impact of the war may be more consequential for Europe, with its greater dependence on energy imports. Risk of recession is higher, but not yet the expected case for 2022.

Kristin Bradbury contributed to this commentary.

Tough Quarter Amid Global Upheaval, Stock and Bond Drops

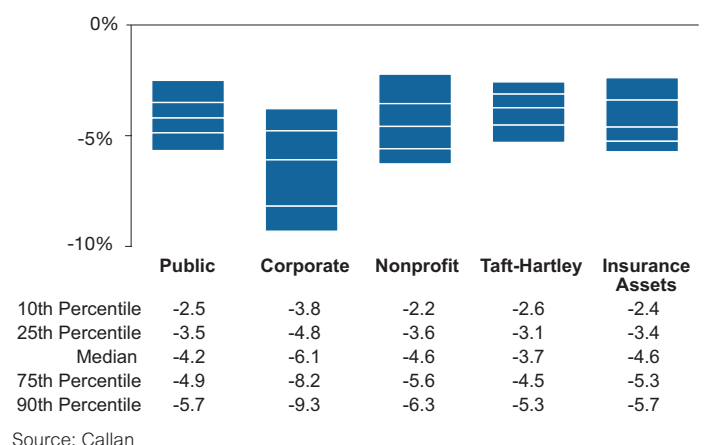
INSTITUTIONAL INVESTORS

- All institutional investor types saw lower returns in 1Q22, but most topped equities, fixed income, and a 60% stocks/40% bonds benchmark.
- Taft-Hartley plans fared best, followed by public defined benefit (DB) plans. Corporate DB plans brought up the rear, although the plunge in liabilities may have helped plan funded status.
- All investor types continue to show gains roughly in line with the 60%/40% benchmark over 20 years, although the gap widened a bit this quarter. And all types have topped global ex-U.S. equities and bonds over that same period, although they still lag U.S. equities.
- Strategic conversations remain focused on “Where do we go from here?” Many investors just enjoyed outstanding returns in 2021, but the elation is tempered by sobering capital markets assumptions.
- Inflation and what to do with fixed income continue to be the two primary topics of discussion.
 - How to structure the overall portfolio to fight inflation
 - What to do to protect bond portfolios with rates rising faster than expected
- After the Global Financial Crisis, many public plans eliminated cost-of-living adjustments (COLAs) to help ensure

solvency. Improving funded status coupled with generational highs in inflation are bringing COLAs to the forefront again. Retirees want COLAs while active participants in plans with cost sharing want lower contributions to maintain intergenerational equity.

- There is increasing concern about a market drawdown, given high valuations relative to historical averages, rising rates and inflation, and the war in Ukraine.
- More of our clients are back in the office, but uncertainty about return dates for others remains high.

Quarterly Returns, Callan Database Groups



Callan Database Median and Index Returns* for Periods Ended 3/31/22

Database Group	Quarter	1 Year	3 Years	5 Years	10 Years	20 Years
Public Database	-4.2	5.5	10.6	9.2	8.5	7.2
Corporate Database	-6.1	2.4	8.8	8.0	7.8	6.9
Nonprofit Database	-4.6	4.6	10.3	8.9	8.2	7.2
Taft-Hartley Database	-3.7	6.5	10.6	9.2	8.7	7.0
Insurance Assets Database	-4.6	-0.2	5.3	4.9	4.7	5.3
All Institutional Investors	-4.5	4.8	10.1	8.8	8.2	7.1
Large (>\$1 billion)	-3.9	6.4	10.7	9.4	8.6	7.5
Medium (\$100mm - \$1bn)	-4.7	4.6	10.1	8.9	8.2	7.0
Small (<\$100 million)	-4.7	4.3	9.8	8.5	7.9	6.8
60% S&P 500/40% Bloomberg Agg	-5.1	7.5	12.1	10.6	9.8	7.4

*Returns less than one year are not annualized.

Source: Callan. Callan's database includes the following groups: public defined benefit (DB) plans, corporate DB plans, nonprofits, insurance assets, and Taft-Hartley plans. Approximately 10% to 15% of the database constituents are Callan's clients. All database group returns presented gross of fees. Past performance is no guarantee of future results. Reference to or inclusion in this report of any product, service, or entity should not be construed as a recommendation, approval, affiliation, or endorsement of such product, service, or entity by Callan.

- In terms of investment structures, few changes are planned in active vs. passive implementations.

Corporate DB Plans

- Lowered return expectations stress estimated return on asset assumptions for corporate plans.
- For corporate plans with de-risking glidepaths, strong returns led to improved funding and larger fixed income allocations, causing a reduction in expected returns.
- Funding relief from ARPA has some corporate plan sponsors reconsidering LDI in order to increase or at least maintain their allocations to growth assets and expected returns.

Public DB Plans

- 2020-21 gains drove improvements in the funded status of public plans.
- Large public plans are examining whether to have fewer active managers and increasing the allocation to passive in an effort to increase net-of-fee returns.
- Low projected returns mean downward pressure on actuarial discount rates. For many plans it may be an ideal time

to lower discount rates without having funded status fall to untenable levels.

- However, increased funded status may spur retirees to seek improved COLAs given current inflation.
- Weaker expected returns from liquid markets may spur demand for larger allocations to alternatives as well as discussions of total fund leverage.
- Interest in private credit by public DB plans remains high.

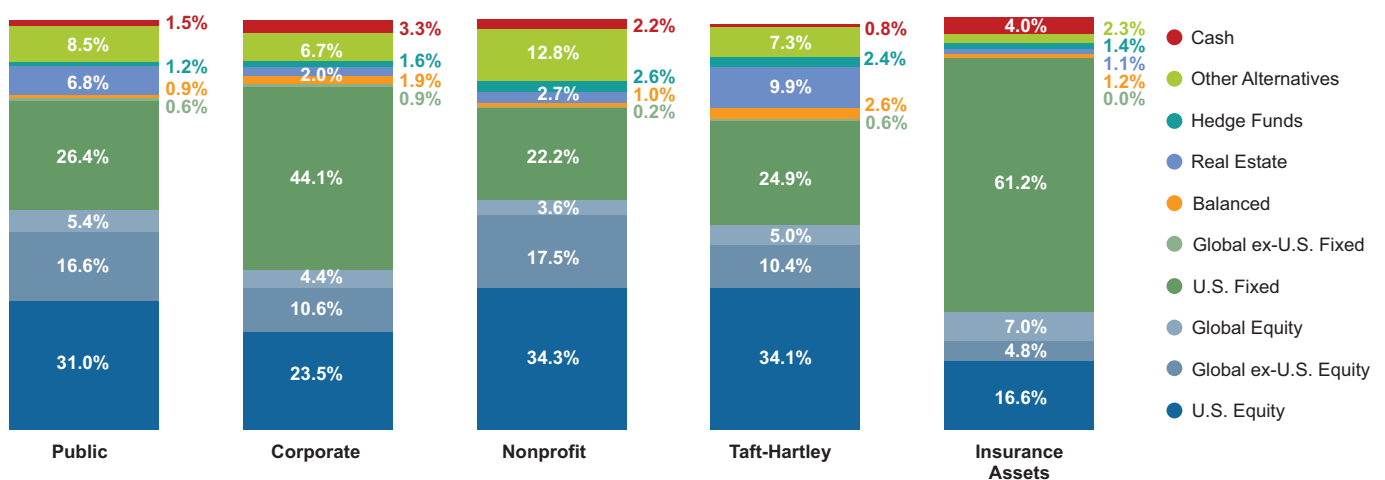
Defined Contribution (DC) Plans

- Fees continue as a top-of-mind issue, with most sponsors benchmarking their fees, according to our DC Survey.
- Target date funds are adding allocations to growth assets across the spectrum of retirement cohorts to increase income-replacement ratios.

Nonprofits

- They continue to expand the depth and breadth of their private markets investments in light of both high valuations in public market growth assets and the potential for high inflation to erode the real values of their assets and distributions.

Average Asset Allocation, Callan Database Groups



Note: charts may not sum to 100% due to rounding. Other alternatives include but is not limited to: diversified multi-asset, private credit, private equity, and real assets.
Source: Callan

Equity

U.S. Equities

- The S&P 500 Index fell 4.6% in 1Q22, but was down more than 12% early in March before rallying into quarter-end.
- Value stocks sharply outpaced growth across capitalizations, with the spread exceeding 10% in both mid and small caps and just over 8% in large caps.
- Energy (+39%) was the best-performing sector given a 33% spike in WTI crude oil prices. Commodity-linked Materials and Utilities sectors also performed well on a relative basis.
- Communication Services (-12%), Consumer Discretionary (-9%), and Information Technology (-8%) were the worst-performing sectors.
- Uncertainty over rates, inflation, and geopolitical tensions all contributed to a volatile and risk-averse environment.
- Interestingly, the Russell Dynamic Index (-4.3%) outperformed the Russell Defensive Index (-5.9%) during the 1Q downturn.

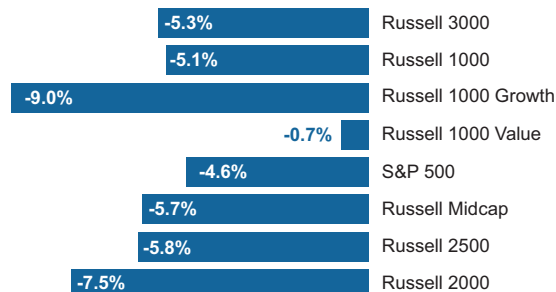
Historical small cap discount relative to large cap

- The Russell 2000 Index continues to underperform the Russell 1000 Index; the small cap index now trails large cap by almost 1,660 basis points cumulatively on a three-year basis and over 2,360 bps on a five-year basis.

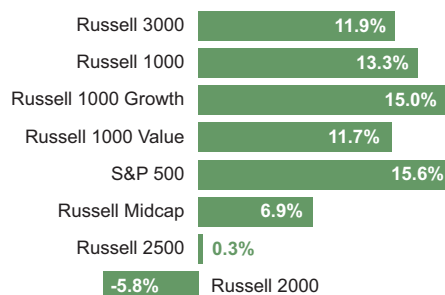
Index concentration

- Index concentration continues despite negative 1Q core index returns and falling earnings contributions.
- Among mega cap tech stocks, Apple and Microsoft now seen as providing downside protection

U.S. Equity: Quarterly Returns



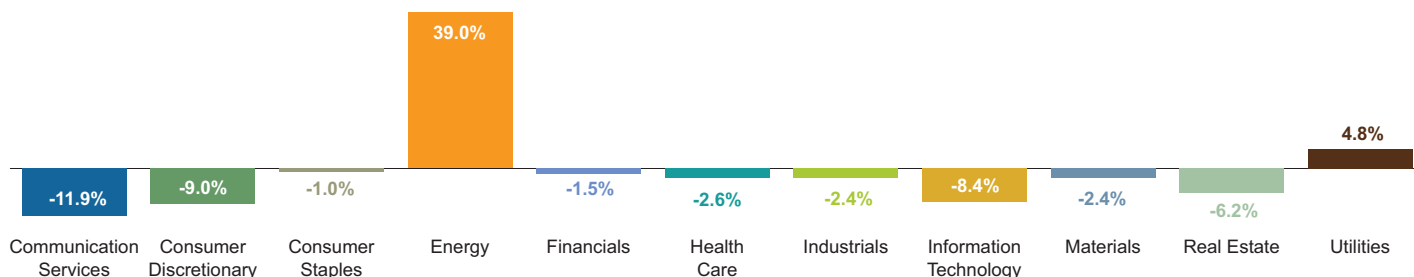
U.S. Equity: One-Year Returns



Sources: FTSE Russell and S&P Dow Jones Indices

- Index concentration continues to cause active managers significant headwinds in the large cap growth space—the Russell 1000 Growth Index has nearly 50% of its capitalization in just the top 10 names (Apple and Microsoft are greater than 10% weights).

Quarterly Performance of Industry Sectors



Source: S&P Dow Jones Indices

Global Equity

War in Ukraine stoked market volatility

- In the aftermath of invading Ukraine, Russia faced condemnation and sanctions that crippled its stocks, bonds, and currency and shocked the global markets.
- The fog of war exacerbated inflationary concerns and led to a surge in energy prices, as Russia is the second-largest natural gas provider and third-largest oil producer in the world.
- Energy exporters notably outperformed importers given the soaring prices.

Fears of COVID-19

- A resurgence of COVID-19 cases in Europe and Asia, specifically in China, weighed on the global recovery.
- China's zero-COVID policy has injected doubt into its 2022 projected GDP growth of 5.5%, which is already its lowest annual target in more than 25 years.

Growth vs. value

- Value sectors such as Energy, Materials, and Financials were in favor relative to growth sectors like Consumer Discretionary and Information Technology, due to recession fears and a tightening monetary cycle.
- However, Energy was the worst performer within emerging markets due to the removal of Russia from indices.

U.S. dollar vs. other currencies

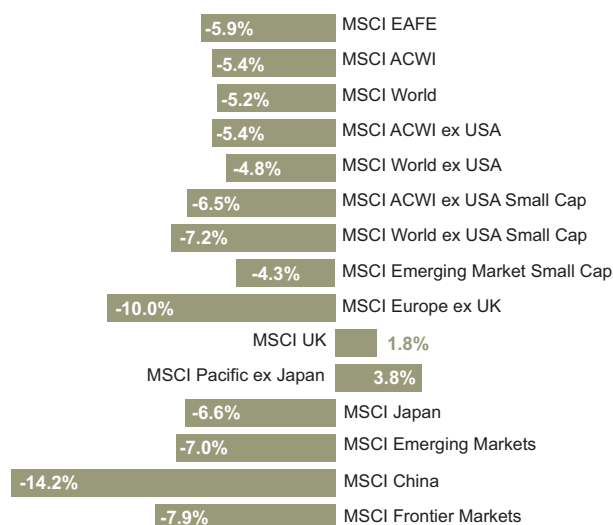
- With the uncertainty of war, the U.S. dollar strengthened against other major currencies, including the yen, as the Bank of Japan maintained an easing policy.

Value is attractive relative to history

- There are attractive valuations in multiple regions.
- Growth relative to value is more vulnerable as interest rates normalize.
- Global recovery from COVID and deficit in Energy should support value.
- Value sectors are underexposed in international indices relative to history.
- Value outperforms in “heating up” inflationary environments.

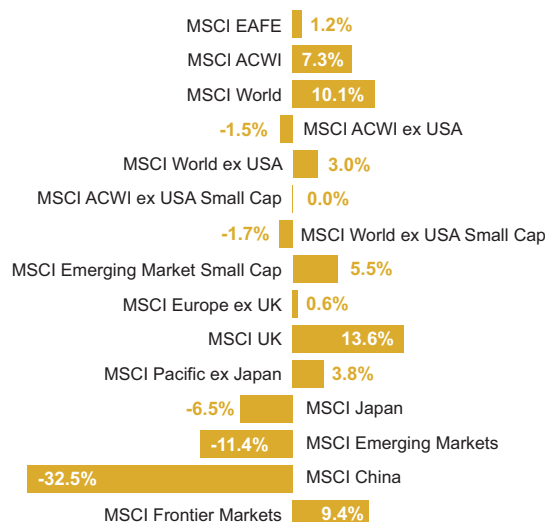
Global ex-U.S. Equity: Quarterly Returns

(U.S. Dollar)



Global ex-U.S. Equity: One-Year Returns

(U.S. Dollar)



Source: MSCI

Fixed Income

U.S. Fixed Income

Bonds hit hard as rates rose sharply

- Bloomberg Aggregate worst quarterly return since 1980
- Curve flattened; as of 3/31 5-year U.S. Treasury yield was 10 bps higher than 10-year UST yield (2.42% vs. 2.32%).
- TIPS topped nominal Treasuries, and 10-year breakeven spread widened to 2.84% from 2.56% at year-end.
- Fed raised rates by 25 bps, with many more hikes expected this year.

Credit sectors underperformed

- Investment-grade corporates underperformed duration-matched U.S. Treasuries by 145 bps, RMBS by 71 bps.
- High yield “benefited” from less interest rate sensitivity and relatively higher exposure to the energy sector; excess return vs. U.S. Treasuries was 92 bps.
- Defaults remain low (less than 1%) and yield breached 6%.

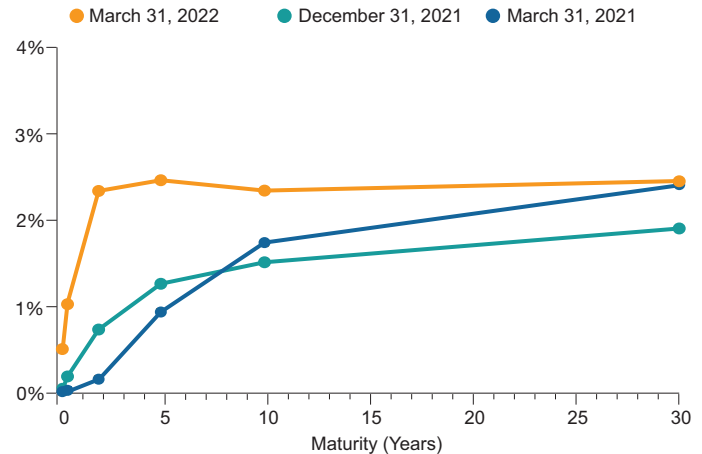
Leveraged loans performed relatively well

- Helped by floating rate coupons/low duration

Securitized sectors also performed well

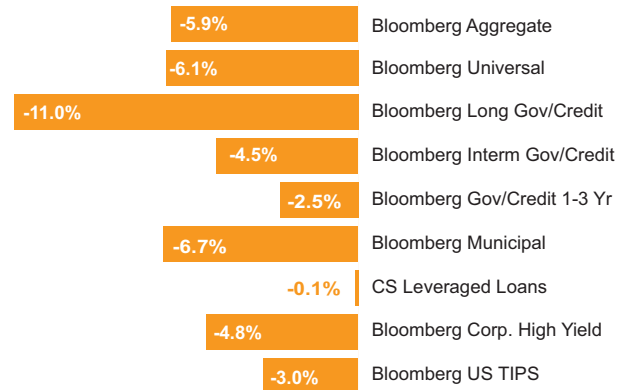
- Consumer ABS was the best within the sector due to its shorter duration profile and solid consumer spending.
- Conduit CMBS traded in line as the economy re-opens.
- Agency MBS saw duration extend by 0.4 year due to higher rates.
- The U.S. yield curve “bear-flattened” as the Fed pivoted to focus on higher-than-expected inflation.
- The U.S. yield curve (2Y/10Y) inverted on the last (intra) day of the quarter, which has not been seen since Aug. 2019.
- Despite rates moving higher this year, could the recent back-up indicate a new regime of higher rates, or is the market simply trading to the higher end of this secular range that has persisted for nearly 40 years?

U.S. Treasury Yield Curves



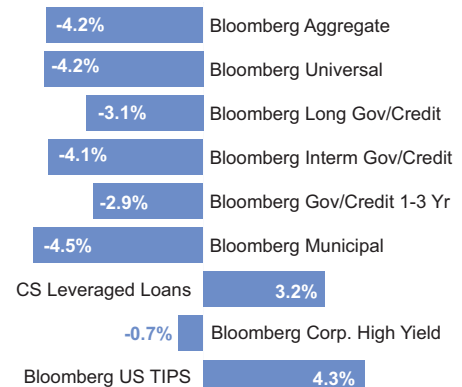
Source: Bloomberg

U.S. Fixed Income: Quarterly Returns



Sources: Bloomberg and Credit Suisse

U.S. Fixed Income: One-Year Returns



Sources: Bloomberg and Credit Suisse

Municipal Bonds

Municipal bond returns hurt by rising rates

- Bloomberg Municipal Bond Index suffered its worst quarterly return since 3Q81.
- Lower quality underperformed: BBB -7.1%; AAA -6.1%
- As with U.S. Treasuries, the muni yield curve flattened with 2-year yields rising more than 10-year and 30-year yields

Valuations relatively attractive

- 10-year AAA Muni/10-year U.S. Treasury ratio = 94%
- Up from 68% at year-end; 10-year median = 90%
- Municipal Bond Index after-tax yield = 4.4% (tax rate of 37%)

Supply/demand

- Heavy outflows in 1Q22 following record inflows in 2021
- \$22 billion in outflows in 1Q (one-fifth of 2021 inflows)
- Supply down modestly vs. 1Q21

Credit quality remains stable to improving

- Tax revenues continued to rise and reserve levels are high
- Upgrades outpaced downgrades

Global Fixed Income

Negative returns driven by broad interest rate increases

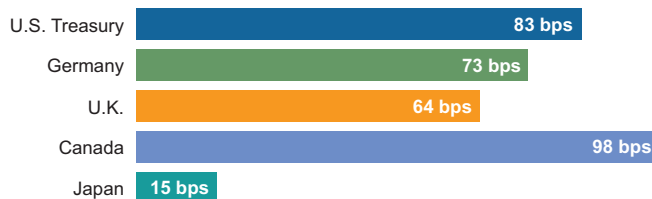
- U.S. dollar appreciated against the Japanese yen, euro, and British pound.

Emerging market debt was not spared

- JPM Global Diversified hurt by rising rates in the U.S.
- GBI-EM hurt by rising local rates, but currency appreciation helped in Latin America and Africa.
- Russia removed from indices at a price of \$0 (-100% return).

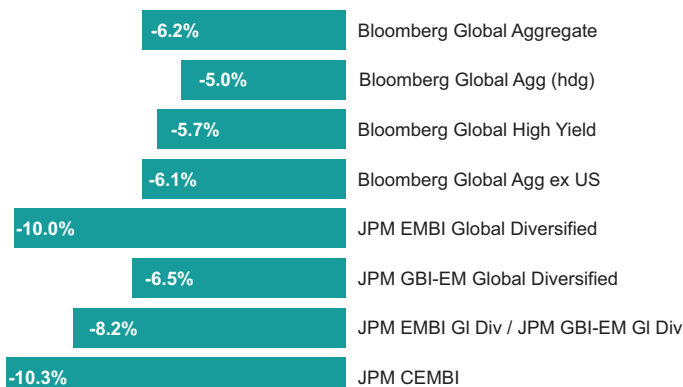
Change in 10-Year Global Government Bond Yields

4Q21 to 1Q22



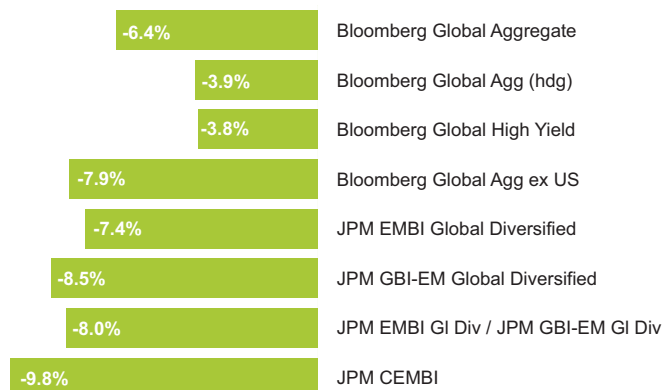
Source: Bloomberg

Global Fixed Income: Quarterly Returns



Sources: Bloomberg and JPMorgan Chase

Global Fixed Income: One-Year Returns



Sources: Bloomberg and JPMorgan Chase

Continued Strong Performance Across the Asset Class

REAL ESTATE/REAL ASSETS | Munir Iman

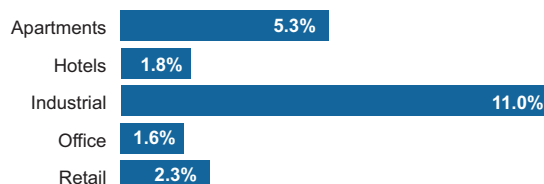
Private Real Estate

- The NCREIF Property Index, a measure of U.S. institutional real estate assets, rose 5.3% during 1Q22. The income return was 1.0% and the appreciation return was 4.3%.
- Industrial led property sector performance with a gain of 11.0%. Office finished last with an increase of 1.6%.
- Regionally, the West led with a 6.5% increase, while the Midwest was the worst performer but still gained 3.5%.
- The NCREIF Open-End Diversified Core Equity (ODCE) Index, representing equity ownership positions in U.S. core real estate, rose 7.1% during the quarter.
- Valuations are reflective of strong fundamentals in Industrial and Apartment and continued uncertainty despite a modest recovery in Office and Retail.
- Office and Retail vacancy rates increased slightly during the quarter.
- Net operating income growth turned negative for Office as the Omicron variant delayed many return-to-office plans.
- Net operating income growth continued its gradual increase in Industrial while decreasing slightly in Apartment and Retail.

Public Real Estate

- The FTSE EPRA Nareit Developed REIT Index, a measure of global real estate securities, fell 4.0% during 1Q22.

Sector Quarterly Returns by Property Type



Source: NCREIF

- U.S. REITs, as measured by the FTSE EPRA Nareit Equity REITs Index, dropped 3.9%.
- The FTSE EPRA Nareit Asia Index (USD), representing the Asia/Pacific region, fell 1.0%.
- European REITs, as measured by the FTSE EPRA Nareit Europe Index (USD), fell 7.2%.

Real Assets

- Commodities were a rare bright spot given their inflation-protection properties as well as war-induced supply concerns. The Bloomberg Commodity TR Index soared 25.5% and the energy-heavy S&P GSCI climbed 33.1%.
- Gold (S&P Gold Spot Price Index: +6.9%) and listed infrastructure (DJB Global Infrastructure: +3.2%) outperformed global stocks and bonds.
- TIPS (Bloomberg TIPS: -3.0%) fell but outpaced nominal U.S. Treasuries.

Callan Database Median and Index Returns* for Periods Ended 3/31/22

Private Real Assets	Quarter	Year to Date	1 Year	3 Years	5 Years	10 Years	15 Years
Real Estate ODCE Style	5.6	5.6	26.2	10.7	9.3	9.8	5.9
NFI-ODCE (value wt net)	7.1	7.1	27.3	10.3	8.9	9.9	6.0
NCREIF Property	5.3	5.3	21.9	9.6	8.5	9.6	7.3
NCREIF Farmland	2.6	2.6	9.7	5.9	6.2	9.6	10.6
NCREIF Timberland	3.2	3.2	11.8	4.7	4.1	5.6	5.2
Public Real Estate							
Global Real Estate Style	-4.1	-4.1	16.8	9.3	9.8	9.2	4.8
FTSE EPRA Nareit Developed	-4.0	-4.0	14.5	5.4	6.5	6.9	2.9
Global ex-U.S. Real Estate Style	-3.7	-3.7	4.4	5.0	8.9	8.4	2.6
FTSE EPRA Nareit Dev ex US	-3.3	-3.3	2.5	1.1	4.7	5.4	1.2
U.S. REIT Style	-4.9	-4.9	26.0	13.3	11.3	10.7	7.3
FTSE EPRA Nareit Equity REITs	-3.9	-3.9	26.5	11.1	9.6	9.8	6.4

*Returns less than one year are not annualized.

Sources: Callan, FTSE Russell, NCREIF

Where Do We Go From Here?

PRIVATE EQUITY | Gary Robertson

Private equity had a slower but still active 1Q22. The unsettling shift in the geopolitical and economic environment is creating murkiness regarding the future direction of private equity activity volumes. Fundraising remained strong, with venture capital dominating new commitments and buyouts paling by comparison—an unusual circumstance not seen since the late 1990s. Company-level private transactions fell on average about 23% by dollar volume and 24% by new deal count. Exits declined more than new investments. IPOs faced continuing challenges.

Fundraising ► Based on preliminary data, 1Q22 private equity partnerships holding final closes totaled \$216 billion, up 16% from 4Q21. New partnerships formed dropped 34% to 497, with larger funds remaining dominant. European commitments fell to a markedly low 16% of the total in 1Q. New buyout fund commitments were surprisingly low given its 44% share of commitments for the full year 2021. (Unless otherwise noted, all data come from PitchBook.)

Buyouts ► Funds closed 2,667 investments with \$200 billion in disclosed deal value, a 31% decline in count and a 16% drop in dollar value from 4Q. The largest investment was the \$17.0 billion sponsor-to-sponsor sale of electronic medical records company Athenahealth by Veritas and Elliott to Bain and Hellman & Friedman.

Private Equity Performance (%) (Pooled Horizon IRRs through 9/30/21*)

Strategy	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years
All Venture	7.2	76.0	36.3	27.5	20.6	15.6	11.5	23.8
Growth Equity	4.4	52.3	29.0	24.3	18.1	15.6	14.7	16.4
All Buyouts	4.4	42.8	21.8	20.2	16.1	12.6	14.2	13.7
Mezzanine	3.0	22.2	11.8	12.4	12.2	11.0	10.5	10.4
Credit Opportunities	2.1	21.7	7.0	8.8	9.9	9.0	9.9	9.9
Control Distressed	7.2	42.6	16.6	14.3	13.5	10.8	11.7	11.9
All Private Equity	5.1	49.8	24.8	21.4	16.7	13.3	13.2	14.8
S&P 500	0.6	30.0	16.0	16.9	16.6	10.4	9.5	9.7
Russell 3000	-0.1	31.9	16.0	16.9	16.6	10.4	9.8	9.7

Note: Private equity returns are net of fees. Sources: Refinitiv/Cambridge and S&P Dow Jones Indices
*Most recent data available at time of publication

VC Investments ► New investments in venture capital companies totaled 11,495 rounds of financing, down 6%, with \$154 billion of announced value, down 20%. The largest investment was the \$3.0 billion mega 2nd round in Altos Labs, which focuses on cellular rejuvenation, by Foresite.

Exits ► There were 540 private M&A exits of private equity-backed companies, a drop of 41%. Disclosed values declined 33% to \$140 billion. There were 41 private equity-backed IPOs, down 66%, which raised an aggregate \$7 billion, down 76%.

Venture-backed M&A exits totaled 693 with disclosed value of \$46 billion. The number of sales fell 18% from 4Q, and announced value fell 22%. There were 69 VC-backed IPOs, down 60%, and the combined float totaled \$7 billion, an 83% decrease.

Funds Closed 1/1/22 to 3/31/22

Strategy	No. of Funds	Amt (\$mm)	Share
Venture Capital	319	92,441	43%
Growth Equity	35	44,023	20%
Buyouts	99	58,897	27%
Mezzanine Debt	2	8,980	4%
Distressed	5	5,339	2%
Energy	2	810	0%
Secondary and Other	31	4,398	2%
Fund-of-Funds	4	1,234	1%
Totals	497	216,122	100%

Source: PitchBook (Figures may not total due to rounding.)

Note: Transaction count and dollar volume figures across all private equity measures are preliminary figures and are subject to update in subsequent versions of the *Capital Markets Review* and other Callan publications.

Appealing to Investors in Low-Yield Climate

PRIVATE CREDIT | Catherine Beard

Benefiting from low-yield environment

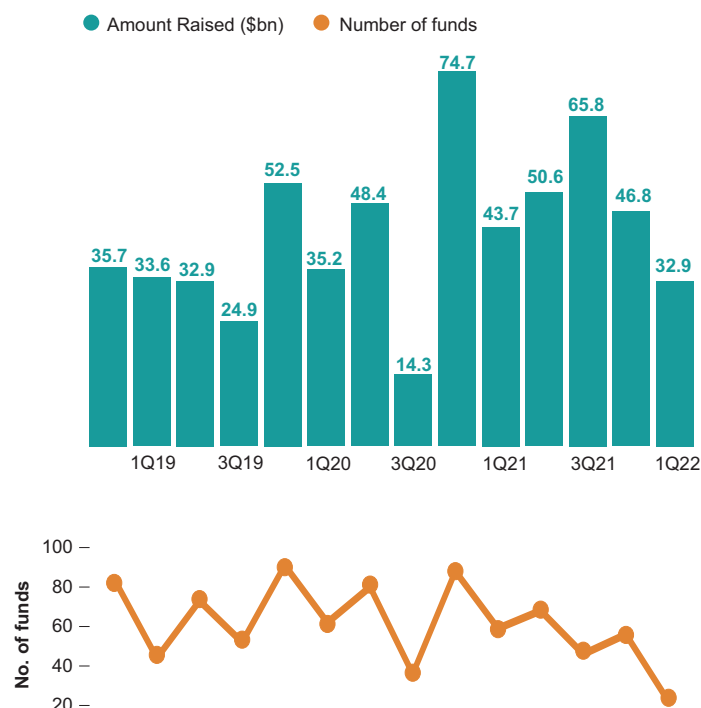
- Yield and income-generating characteristics remain attractive in a low-rate environment.
- Alpha generation can be magnified through strategies that extract a complexity premium.
- Many direct lending assets are floating rate, which can add protection against rising rates.
- Portfolios were resilient during the COVID dislocation due to liquidity injected into the economy; valuations are back to 2019 levels but the space remains crowded.
- Private credit performance varies across sub-asset class and underlying return drivers. On average, the asset class has generated net IRRs of 8% to 10% for trailing periods ended Sep. 30, 2021. Higher-risk strategies performed better than lower-risk strategies.

Fundraising in 2022 seasonally slow

- Private credit fundraising tapered off in 3Q20 due to COVID-related disruption but significantly rebounded in 4Q20 and 1H21; 1Q22 has been seasonally slow with fewer funds in the market but with larger fundraise targets.
- Fundraising in the first part of 2022 focused on diversifying strategies such as specialty finance, specialized industry lending, and non-sponsor/opportunistic lending.
- Traditional sponsor-backed strategies are coming to market with evergreen structures for which there is growing demand.
- There is continued strong PC fundraising activity from large credit shops as well as new offerings from traditional fixed income managers.

- Industry consolidation is in full swing with large traditional firms acquiring alternative credit managers, such as T. Rowe Price acquiring Oak Hill Advisors and Alliance Bernstein's acquisition of CarVal.

Private Credit Fundraising (\$bn)



Source: Preqin

Private Credit Performance (%) (Pooled Horizon IRRs through 9/30/21*)

Strategy	Quarter	1 Year	3 Years	5 Years	8 Years	10 Years	15 Years	20 Years
Senior Debt	1.1	11.3	6.9	7.9	7.4	7.4	7.5	7.5
Mezzanine	3.0	22.2	11.8	12.4	11.5	12.2	11.1	10.4
Credit Opportunities	2.1	21.7	7.0	8.8	7.5	9.9	9.0	9.9
Total Private Credit	2.1	19.6	8.1	9.4	8.4	10	9.3	9.8

Sources: Refinitiv/Cambridge

*Most recent data available at time of publication

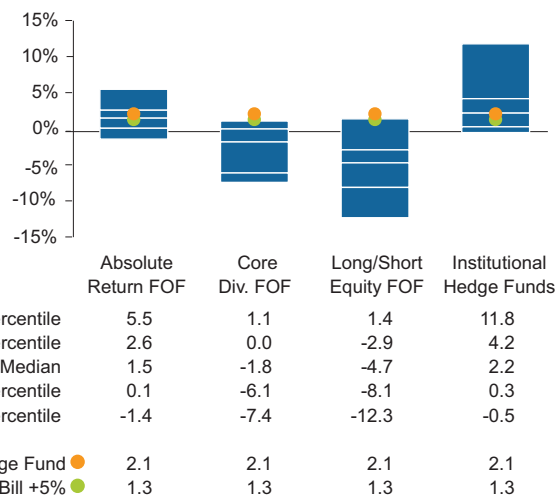
Market Volatility Tests Managers

HEDGE FUNDS/MACs | Joe McGuane

Global market volatility spiked during 1Q22 following Russia's invasion of Ukraine. The S&P 500 fell 4.6%, but was off more than 12% at its lowest point in the quarter. Despite the conflict in Europe, the Federal Reserve moved ahead with a 25 basis point increase in policy rates, its first since 2018. The U.S. Treasury 10-year yield rose by 70 bps to 2.33%. Hawkish monetary policy drove bond yields higher and prices lower.

Hedge funds ended the volatile quarter with mixed results. Equity managers with a focus on energy and industrials had a solid quarter but were not able to offset those with net long exposure to tech, media, and telecom (TMT), which was a drag on performance. Event-driven strategies also fell due to a higher weight to equities vs. credit to start off the year. Macro strategies soared, as commodities spiked. Relative value managers ended slightly higher, as they were able to profit off an increase in rate volatility.

Hedge Fund Style Group Returns



Sources: Callan, Credit Suisse, Federal Reserve

Callan Peer Group Median and Index Returns* for Periods Ended 3/31/22

Hedge Fund Universe	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years
Callan Institutional Hedge Fund Peer Group	2.2	8.0	6.3	5.6	6.4	6.7
Callan Fund-of-Funds Peer Group	-1.3	1.2	6.0	5.1	5.1	4.1
Callan Absolute Return FOF Style	1.5	6.5	6.0	4.4	4.9	3.5
Callan Core Diversified FOF Style	-1.8	1.3	6.1	4.7	4.8	3.8
Callan Long/Short Equity FOF Style	-4.7	-2.8	6.6	6.0	5.5	4.9
BB GS Cross Asset Risk Premia 6% Vol Idx	0.6	0.0	-0.4	1.7	3.6	5.1
Credit Suisse Hedge Fund	2.1	7.5	7.3	5.5	4.7	4.2
CS Convertible Arbitrage	-2.5	1.0	6.0	4.4	3.9	3.9
CS Distressed	-0.2	5.6	5.0	4.1	4.7	3.9
CS Emerging Markets	-7.2	-4.9	4.7	4.6	4.6	4.1
CS Equity Market Neutral	-0.1	5.1	2.2	2.0	1.6	-1.3
CS Event-Driven Multi	-3.0	3.5	7.4	5.1	4.3	4.0
CS Fixed Income Arb	-1.0	2.0	3.9	3.8	4.2	3.6
CS Global Macro	16.2	23.9	13.4	8.8	5.8	6.6
CS Long/Short Equity	-3.3	2.3	6.3	5.8	5.6	4.6
CS Managed Futures	12.3	18.9	9.4	5.6	3.1	3.9
CS Multi-Strategy	3.1	8.0	6.6	5.1	6.0	5.1
CS Risk Arbitrage	-0.6	2.7	7.7	5.9	4.1	4.1
HFRI Fund Wtd Composite	0.1	5.3	8.2	7.0	6.9	6.8
90-Day T-Bill + 5%	1.3	5.1	5.8	6.1	5.6	5.8

*Net of fees. Sources: Bloomberg GSAM, Callan, Credit Suisse, Hedge Fund Research

Representing a raw collection of hedge funds reporting performance without implementation costs, the HFRI Fund-Weighted Composite Index lost 1.8% for 1Q. The median manager in the Callan Hedge Fund-of-Funds (FOF) Database Group detracted 1.3%, net of all fees. Serving as a proxy for large, broadly diversified hedge funds with low-beta exposure to equity markets, the median Callan Institutional Hedge Fund Peer Group manager rose 2.2%.

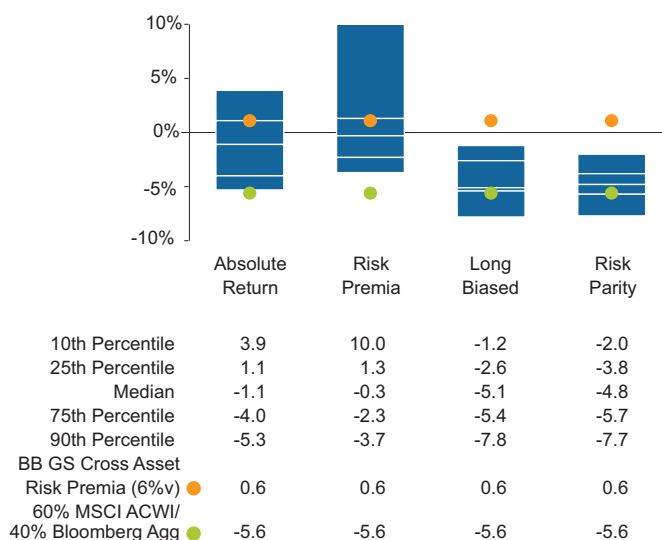
Within the HFRI indices, the best-performing strategy last quarter was Macro (+6.7%), aided by its exposure to commodities. Equity hedge strategies (-4.3%) had a difficult quarter, as those that were overweight to growth performed worse than those with a value bias.

Across the Callan Hedge FOF Database, the median Absolute Return FOF gained 1.5%, as a focus on lower beta strategies

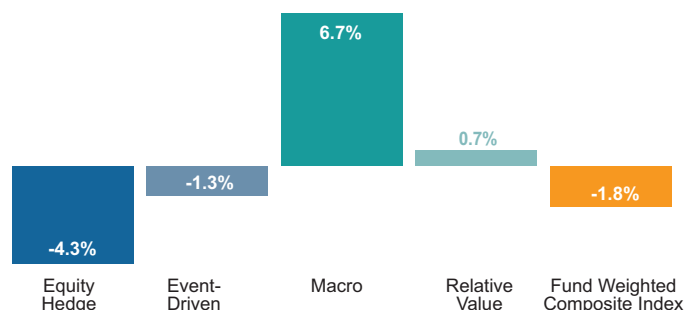
performed well. Meanwhile, the Callan Long-Short Equity FOF fell 4.7% as a growth bias was a drag on performance. The median Callan Core Diversified FOF declined 1.8%, as equity positioning and interest rate volatility offset macro outperformance.

Measuring the quarter's performance of alternative risk premia, the Bloomberg GSAM Risk Premia Index increased 0.6% based upon a 6% volatility target. Within Callan's database of liquid alternative solutions, the median managers of the Callan Multi-Asset Class (MAC) Style Groups generated negative returns for the quarter, gross of fees. The median Callan Long Biased MAC manager fell 5.1%, as exposure to equity and fixed income was a drag on performance. The Callan Risk Parity MAC index, which typically targets an equally risk-weighted allocation to the major asset classes with leverage, was down 4.8%. The Callan Risk Premia MAC held up the best, down 0.3%.

MAC Style Group Returns



HFRI Hedge Fund Strategy Returns



Source: HFRI

Sources: Bloomberg, Callan, Eurekahedge, S&P Dow Jones Indices

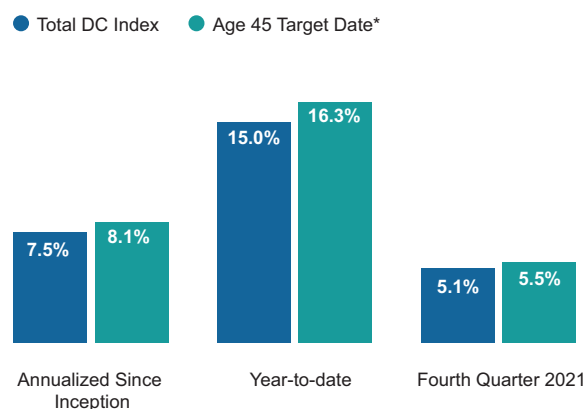
DC Index Bounces Back in 4Q

DEFINED CONTRIBUTION | Patrick Wisdom

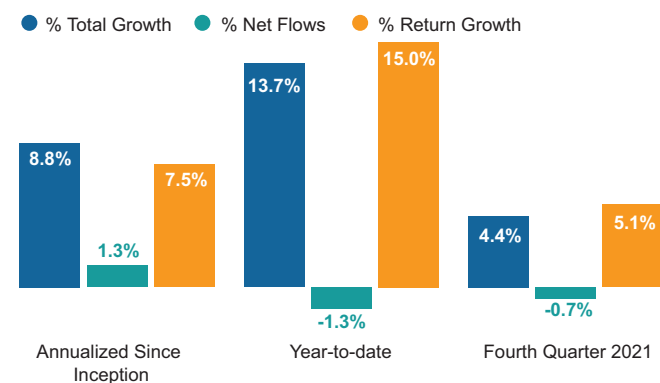
- The Callan DC Index™ gained 5.1% in 4Q21, rebounding from its 3Q21 decline (-0.4%).
- The Age 45 Target Date Fund (analogous to the 2040 vintage) had a slightly higher quarterly return (5.5%), attributable to its larger allocation to equity, which outperformed fixed income during the quarter.
- Balances within the DC Index rose by 4.4% after a 0.7% decline the previous quarter. Investment returns (5.1%) were the sole driver of the growth, offset by net flows (-0.7%).
- Target date funds received 77.9% of net inflows, the largest share for the fourth straight quarter.
- For the second straight quarter, real return/TIPS had larger-than-typical net inflows (+13.6%), indicating that participants may be looking to hedge inflation.
- In 4Q21, investors transferred assets out of less-risky asset classes, as stable value (-15.6%), U.S. fixed income (-8.2%), and money market (-3.4%) experienced net outflows.
- U.S. large cap (-40.4%) and U.S. small/mid cap (-10.4%) saw material net outflows. In contrast, global ex-U.S. equity (+5.1%) saw net inflows, while emerging market equity (+0.1%) experienced relatively little change.
- Turnover (net transfer activity levels within DC plans) in the DC Index remained at 0.19%, consistent with the 3Q level.
- The Index's overall allocation to equity (72.8%) increased from the previous quarter's level (72.2%), and is within reach of the high mark of 4Q07 (72.9%).
- U.S. large cap (27.7%) had the largest percentage increase in allocation from 3Q. The increase came despite net outflows, signaling that the relative outperformance of U.S. equity drove the higher overall allocations.
- U.S. fixed income (5.5%) experienced the largest percentage decrease in allocation.
- The prevalence of a balanced fund (44.1%) decreased to its lowest level since the inception of the Index in 2006.

The Callan DC Index is an equally weighted index tracking the cash flows and performance of over 100 plans, representing nearly \$300 billion in assets. The Index is updated quarterly and is available on Callan's website.

Investment Performance



Growth Sources



Net Cash Flow Analysis (4Q21)

(Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Target Date Funds	77.9%
Real Return/TIPS	13.6%
Stable Value	-15.6%
U.S. Large Cap	-40.4%
Total Turnover**	0.19%

Data provided here is the most recent available at time of publication.

Source: Callan DC Index

Note: DC Index inception date is January 2006.

* The Age 45 Fund transitioned from the average 2035 TDF to the 2040 TDF in June 2018.

** Total Index "turnover" measures the percentage of total invested assets (transfers only, excluding contributions and withdrawals) that moved between asset classes.

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The *Capital Markets Review* is a quarterly macroeconomic indicator newsletter that provides thoughtful insights on the economy and recent performance in the equity, fixed income, alternatives, real estate, and other capital markets.

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