Callan Institute

Second Quarter 2020

Capital Market Review

The Stock Market Is Not the Economy

ECONOMY

2 PAGE

While equities rebounded in 2Q20, economies around the world face significant challenges as the pandemic creates an unprecedented environment. U.S. GDP, for instance, fell an astonishing 9.5% in the quarter, or 32.9% on an annualized basis, while a quarter of all jobs evaporated.

Returns Positive After 1st Quarter Volatility

INSTITUTIONAL INVESTORS

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Every type of institutional investor showed gains over the one year ending with the second quarter, rebounding from the first quarter. And while all lagged a 60% stocks/40% bonds benchmark over that time period, over longer periods they have roughly matched its performance.

Bounceback Leads Indices to Soar in 2Q

EQUITY

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U.S. equity markets bounced back from March lows in 2Q20, with three sectors (Technology, Consumer Discretionary, Energy) posting returns in excess of 30%. Accommodative monetary policies helped fuel the market recovery for global equities.

Mixed Performance Around the World

FIXED INCOME

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After strong performance in 1Q20, U.S. Treasury returns lagged other "spread" sectors in 2Q20 as risk appetites rebounded. Developed market sovereign bond yields ended lower amid rate cuts overseas. Emerging market debt rebounded, helped by rising oil prices.

Appreciation Falters; REITs Underperform

REAL ESTATE/REAL ASSETS

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All sectors of the NCREIF Property Index saw negative appreciation in 2Q20, but income remained positive except for Hotels. Transaction volume dropped off with the exception of Industrial assets that have tenants with strong credit. REITs underperformed equity benchmarks.

Heightened Focus on Portfolio Holdings

PRIVATE EQUITY

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Activity slowed in 2Q20, although larger transactions helped prop up dollar volumes. The market is in a period of both price discovery and a heightened focus on existing portfolio holdings. First quarter returns were down, but by less than half those of public equity.

Beta Leads, and Alpha Follows

HEDGE FUNDS/MACs

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Global markets reverted to risk-on mode in 2Q20, and most hedge fund strategies benefited. The CS HFI rose 6.2%, while the median manager in the Callan Hedge Fund-of-Funds Database Group gained 7.7%. The Callan Institutional Hedge Fund Peer Group increased 6.0%.

Index Posts Largest Drop Since 4Q08

DEFINED CONTRIBUTION

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The equity downturn in 1Q20 led to the decline and ended four straight quarters of gains. Balances saw the biggest plunge ever. Stable value funds saw the biggest inflows as participants sought safety. Allocation to equity reached the lowest level since 2012.

Broad Market Quarterly Returns

U.S. Equity Russell 3000	Global ex-U.S. Equity MSCI ACWI ex USA	U.S. Fixed Income Bloomberg Barclays Agg	Global ex-U.S. Fixed Income Bloomberg Barclays Gbl ex US
↑ 22.0%	↑ 16.1%	↑ 2.9%	↑ 3.4%

Sources: Bloomberg Barclays, FTSE Russell, MSCI

The Stock Market Is Not the Economy

ECONOMY | Jay Kloepfer

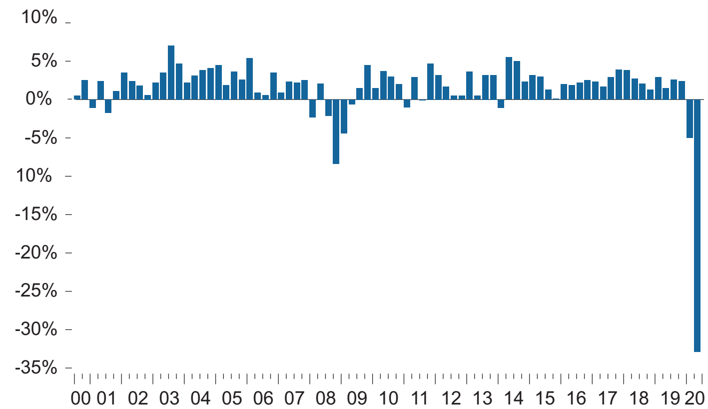
Stock markets around the globe staged spectacularly swift recoveries in the second quarter from their sudden and equally spectacular plunge in the first quarter, providing investors with the hallowed V-shaped recovery that once seemed impossible. While major equity indices are headed back toward all-time highs, the economies underlying these markets face a path quite different from a V-shaped recovery. The sectors driving the U.S. stock market, technology in particular, are not the sectors like retail and hospitality that employ the largest number of workers.

The staggered reopening of states within the U.S. and economies around the globe drove a sharp rise in economic activity in May and June, but a range of high-frequency indicators suggests the pace of recovery has since softened following a resurgence in COVID-19 infections and deaths. The prospect for many locales to pause or roll back easing, and the observed retrenchment in spending by businesses and consumers, looms over the path to recovery. Government belt tightening may undermine the rebound, as tax revenues for localities have plummeted in the face of a surge in demand for services. Revenue shortfalls for state and local governments for fiscal year 2021 may total $200 billion, according to IHS Markit. Consensus forecasts still call for a strong rebound in the third quarter followed by a more gradual recovery, but the risk has risen for a W-shaped trajectory, where a decline follows the third quarter pop, and then a more durable recovery begins with a delay, perhaps in the second half of 2021.

The word "unprecedented" to describe the current environment may seem overused, but the speed and depth of the economic disruption was indeed unprecedented. The total output of the U.S. economy as measured by GDP dropped 9.5% in the second quarter, or an annualized decline of 32.9%, unheard of in modern times. Approximately one quarter of all jobs disappeared in a matter of weeks.

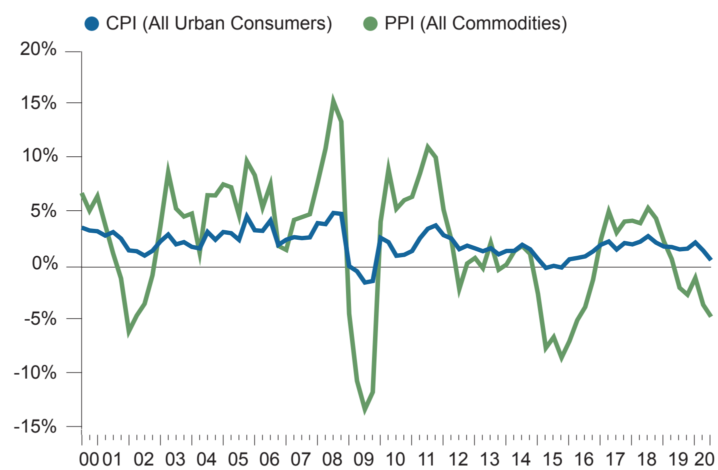
GDP is an admittedly challenged measure of true economic activity even in normal times, and annualized percent changes around the chasm of the COVID-19 economic shutdown are problematic in context. Adding to the data confusion is the seasonal adjustment methodology, which under normal circumstances greatly reduces the signal-to-noise ratio in monthly and quarterly GDP estimates but exacerbates the severity of data swings in times of extreme stress. These limitations aside, GDP remains the most comprehensive metric for examining U.S. and global activity. For the whole year, projections by forecaster Capital Economics suggest a GDP decline of close to 5% in the U.S. and Japan, 7.5% in the euro zone, and greater than 10% in the U.K. Official estimates for China peg 2020 GDP growth

Quarterly Real GDP Growth (20 Years)



Source: Bureau of Economic Analysis

Inflation Year-Over-Year



Source: Bureau of Labor Statistics

at 2%, while unofficial estimates show a small loss (-1%). The focus going forward will be on the level of GDP, employment, unemployment, sales, and production, and when we can recover pre-pandemic levels of economic activity. Consensus estimates peg U.S. GDP regaining its pre-pandemic level in the second half of 2021, barring the appearance of the W-shaped recovery.

The most immediate and severe impact to the U.S. economy has been in the job market. Initial unemployment claims spiked to 6.9 million in the last week of March. The weekly claims have since subsided, but remain at levels unprecedented before the pandemic, topping 1 million every week since then. In addition to regular state unemployment programs, the CARES Act expanded benefits to many not typically covered by states and extended regular benefits for up to 13 weeks. The sum of these programs provided unemployment benefits for over 30 million persons through the end of June, off a starting job base of 155 million in February. The job market staged a surprising surge in May and June, but the high-frequency data are suggesting a marked softening into the summer.

U.S. inflation perked up in June following declines for three consecutive months, but year-over-year CPI is up just 0.6%, well below recent trends and the Fed's long-term target of 2%. By some measures, second quarter inflation fell to its lowest point in SEVEN decades. CPI measures consumer prices against a basket of typical goods and services purchased. GDP and consumption price deflators measure price changes of goods and services as actually transacted, and both measures saw almost 2% declines in the second quarter. While concerns are rising that the fiscal and monetary stimulus enacted to rescue the global economies will be highly inflationary, the prospect of near-term deflation is real, and holds the potential to derail the recovery—falling prices could slow consumer and business spending, especially if deflation becomes a spiral rather than a temporary dip.

The Long-Term View

Index	2Q20	Periods Ended 6/30/20 Year	5 Yrs	10 Yrs	25 Yrs
U.S. Equity					
Russell 3000	22.0	6.5	10.0	13.7	9.3
S&P 500	20.5	7.5	10.7	14.0	9.3
Russell 2000	25.4	-6.6	4.3	10.5	8.2
Global ex-U.S. Equity					
MSCI EAFE	14.9	-5.1	2.1	5.7	4.5
MSCI ACWI ex USA	16.1	-4.8	2.3	5.0	--
MSCI Emerging Markets	18.1	-3.4	2.9	3.3	--
MSCI ACWI ex USA Small Cap	22.8	-4.3	2.5	6.0	5.5
Fixed Income					
Bloomberg Barclays Agg	2.9	8.7	4.3	3.8	5.4
90-Day T-Bill	0.0	1.6	1.2	0.6	2.4
Bloomberg Barclays Long G/C	6.2	18.9	9.0	7.8	7.7
Bloomberg Barclays Gl Agg ex US	3.4	0.7	2.9	2.0	3.7
Real Estate					
NCREIF Property	-1.0	2.7	6.8	9.7	9.1
FTSE Nareit Equity	11.8	-13.0	4.1	9.1	9.5
Alternatives					
CS Hedge Fund	6.2	-0.7	1.6	3.8	7.5
Cambridge PE*	-7.8	2.1	10.4	12.3	14.7
Bloomberg Commodity	5.1	-17.4	-7.7	-5.8	0.7
Gold Spot Price	12.8	27.4	9.0	3.8	6.4
Inflation – CPI-U	-0.1	0.6	1.6	1.7	2.1

*Data for most recent period lags by a quarter. Data as of 3/31/20.
Sources: Bloomberg, Bloomberg Barclays, Bureau of Economic Analysis, Credit Suisse, FTSE Russell, MSCI, NCREIF, S&P Dow Jones Indices, Refinitiv/Cambridge

Recent Quarterly Economic Indicators

	2Q20	1Q20	4Q19	3Q19	2Q19	1Q19	4Q18	3Q18
Employment Cost–Total Compensation Growth	2.7%	2.8%	2.7%	2.8%	2.7%	2.8%	2.9%	2.8%
Nonfarm Business–Productivity Growth	2.5%*	-0.8%	1.2%	-0.3%	2.7%	3.9%	0.5%	1.6%
GDP Growth	-32.9%	-5.0%	2.4%	2.6%	1.5%	2.9%	1.3%	2.1%
Manufacturing Capacity Utilization	63.1%	73.5%	75.0%	75.4%	75.5%	76.4%	77.0%	76.9%
Consumer Sentiment Index (1966=100)	74.0	96.4	97.2	93.8	98.4	94.5	98.2	98.1

* Estimate

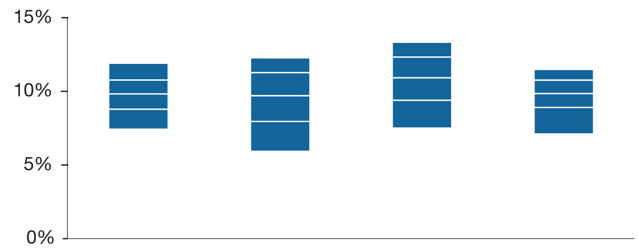
Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve, IHS Economics, Reuters/University of Michigan

Returns Positive After 1st Quarter Volatility

INSTITUTIONAL INVESTORS

- After the pandemic-induced market volatility in 1Q20, all types of institutional investors rebounded to positive performance for the 12 months ending with the second quarter. Corporate defined benefit (DB) plans fared notably better than others, gaining 6.4%. Other types of investors saw increases of roughly 2%-3%. All fell short of major U.S. stock and bond indices, as well as a 60% S&P 500/40% Bloomberg Barclays Aggregate benchmark, but outperformed global ex-U.S. equities by a wide margin.
- Over the last 20 years, institutional investors have performed in line with the 60%/40% benchmark, with returns in a range of 5.7%-5.9% annualized.
- The V-shaped equity market decline and recovery experienced in the first half of 2020 revealed levels of volatility not seen since the Global Financial Crisis of 2008-09. Investors' recent experience with volatility may reveal their "true" tolerance for risk.
- We note that the stock market is not the economy and the path out of recession remains undiscovered.

Quarterly Returns, Callan Database Groups



	Public Database	Corporate Database	Nonprofit Database	Taft-Hartley Database
10th Percentile	14.3	14.7	16.0	13.8
25th Percentile	12.9	13.5	14.8	12.9
Median	11.8	11.6	13.1	11.8
75th Percentile	10.5	9.6	11.3	10.7
90th Percentile	8.9	7.1	9.0	8.5

Source: Callan

- For institutional investors, the key is to stay the course: rebalance; manage liquidity; evaluate their portfolios for impairment or unexpected performance; and watch for opportunity, both inside the portfolio and across the markets.

Callan Database Median and Index Returns* for Periods Ended 6/30/20

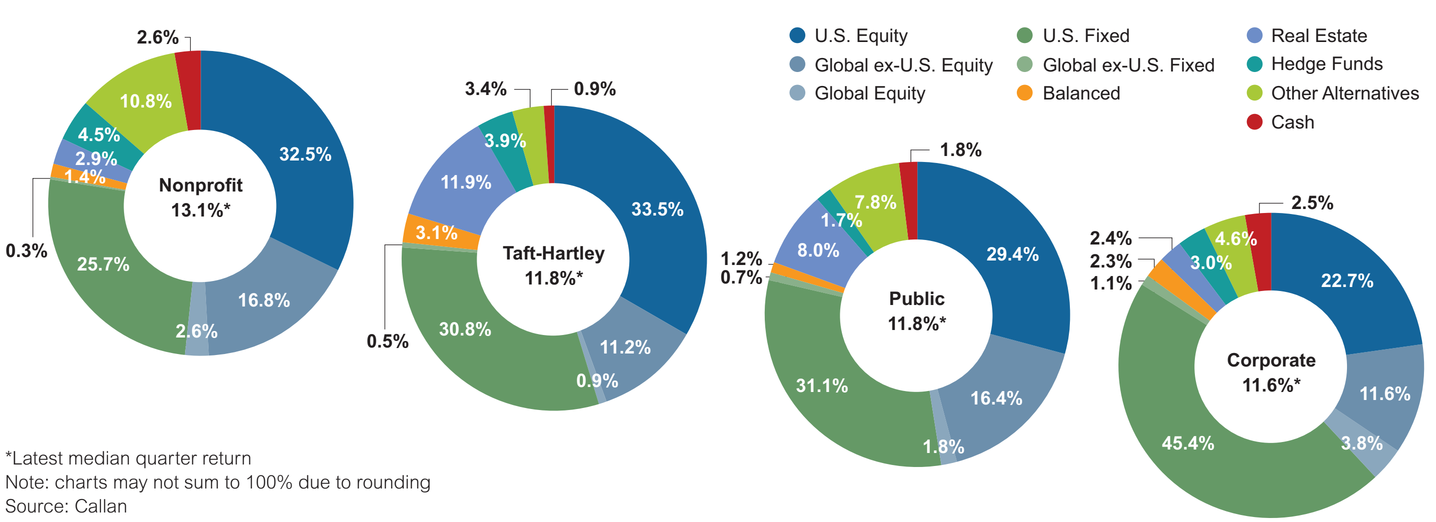
Database Group	Quarter	Year-to-date	Year	3 Years	5 Years	10 Years
Public Database	**11.79**	**-2.34**	**3.26**	**5.81**	**6.02**	**8.09**
Corporate Database	**11.64**	**0.00**	**6.36**	**6.89**	**6.74**	**8.47**
Nonprofit Database	**13.10**	**-3.26**	**2.67**	**5.52**	**5.59**	**7.89**
Taft-Hartley Database	**11.82**	**-2.74**	**3.21**	**5.93**	**6.21**	**8.55**
All Institutional Investors	**12.04**	**-2.26**	**3.63**	**5.88**	**6.03**	**8.24**
Large (>$1 billion)	**10.87**	**-1.62**	**4.09**	**6.39**	**6.40**	**8.48**
Medium ($100mm - $1bn)	**11.99**	**-2.18**	**3.62**	**5.94**	**6.12**	**8.24**
Small (<$100 million)	**12.71**	**-2.71**	**3.31**	**5.65**	**5.76**	**8.07**

*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, 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.

- The massive monetary and fiscal intervention by governments will change the landscape:
  - The continuing low-yield environment and the capital markets going forward favor growth.
  - Investors need to remember the purpose of capital market assumptions: To define an investor's return expectation, while matching the investor's risk tolerance and investment time horizon. Importantly, they are not point estimates: they define a range of possible outcomes.
  - Investors also need to assess what can serve as an equity diversifier equal to bonds with the return of zero interest rates. Are they willing to pay for the benefit of fixed income?
- Some decisions are on hold, particularly serious restructuring of asset class exposures, but strategic planning continues apace.
- Based on Callan's client activity, many types of institutional investors plan to adjust their strategic allocations by shifting out of publicly traded asset classes and into alternatives, including private equity, private credit, and real assets.
- This interest has led to a surge in asset allocation reviews and discussions about the capital markets with investors.
- As part of those assessments, investors are re-examining the purposes of all diversifiers, including real assets, hedge funds and liquid alternatives, fixed income, and private equity and private credit.
- Private credit in particular drew attention. All institutional investor types had some interest in increasing private credit, and none indicated an intention to cut their allocations.
- Corporate DB plans indicated they intended to reduce allocations to equities but increase allocations to fixed income. The capital market upheaval has not derailed the trend toward de-risking; the commitment to de-risking is solid.
- Public DB plans expressed interest in a range of opportunistic strategies, such as unconstrained fixed income.
- Nonprofits continued to emphasize return enhancement. Strategic asset allocation work is focused on evaluating investment portfolios that can support the desired distribution rate in order to balance intergenerational equity.
- The top concern for insurance clients was yield.
- In terms of their strategic allocations, insurance clients indicated they planned to shift out of equities, both U.S. and global ex-U.S., and increase allocations to a variety of credit and alternative investments.
- Institutional investors expressed strong interest in educational topics relevant to the current market environment.
- Finally, COVID-19 was top of mind for all investor types. One noticeable impact was a dramatic shift in meetings. Virtually all clients in an exclusive Callan survey said that the vast bulk of their meetings were now occurring virtually, and a third were doing all of their meetings that way.

Average Asset Allocation, Callan Database Groups



*Latest median quarter return
Note: charts may not sum to 100% due to rounding
Source: Callan

Equity

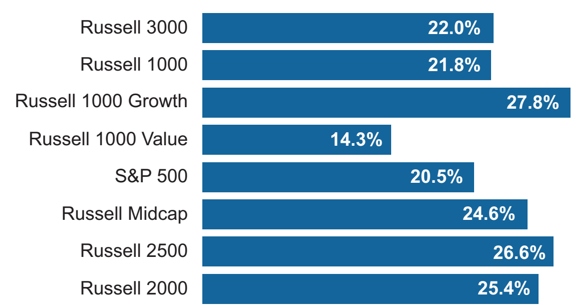
U.S. Equities

U.S. equity markets bounced back from March lows in 2Q20 (Russell 1000: +21.8%). The S&P 500 (+20.5%) recorded its best quarterly performance since 1998. Three sectors (Technology, Consumer Discretionary, and Energy) posted returns in excess of 30%. Information Technology (+30.5%) continues to be a top performer with the "FAAMG" stocks (Facebook, Amazon, Apple, Microsoft, and Google) up 35% in the quarter. Many Technology stocks benefited from the "stay at home" environment. Energy stocks (+30.5%) rebounded after OPEC+ and non-OPEC production cuts buoyed crude prices.

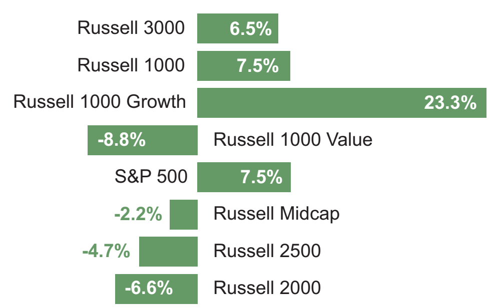
Small cap outgained large cap

- From the first to the second quarter, the Russell 2000 swung from its worst quarterly performance to one of its three best quarterly returns since the inception of the index.
- The Russell 2000 still lags the Russell 1000 on a year-to-date and trailing one-year basis, exemplifying the extreme dislocation between large and small cap performance in the first quarter.
- Better-than-expected economic data and Fed actions helped shift investment sentiment in favor of small cap.

U.S. Equity: Quarterly Returns



U.S. Equity: One-Year Returns

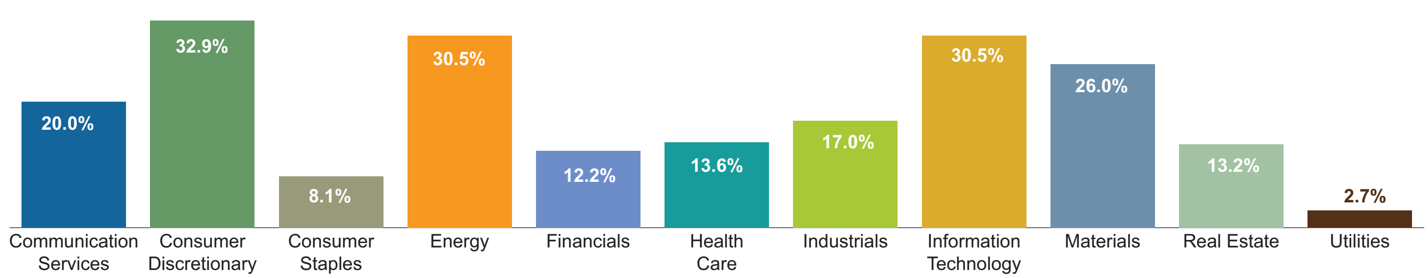


Sources: FTSE Russell and S&P Dow Jones Indices

Growth outpaced value across market capitalizations

- Russell's value indices underperformed their growth counterparts across the market cap spectrum during the first quarter decline as well as during the second quarter recovery (Russell 1000 Growth: +27.8%; Russell 1000 Value: +14.3%; Russell 2000 Growth: +30.6%; Russell 2000 Value: +18.9%).
- Persistently low interest rates, a flatter yield curve, and slower economic growth are some of the headwinds for the value factor.

Quarterly Performance of Industry Sectors



Source: S&P Dow Jones Indices

Global/Global ex-U.S. Equity

Accommodative monetary policies coupled with massive fiscal stimulus helped fuel the second quarter market recovery after the first quarter's declines.

Global/Developed ex-U.S.

- Developed markets with the most success at mitigating the coronavirus led; Australia (+28.9%), New Zealand (+28.1%), and Germany (+26.5%) were the top performers.
- Countries' inability to "flatten the curve" acted as headwinds to their equity markets, namely the U.K. (+7.8%).
- Every sector in MSCI EAFE except Energy (-0.03%) posted positive returns, led by cyclical stocks, whose prices are highly sensitive to changes in the economy; Information Technology (+23.4%) companies also provided strong returns as working-from-home trends continued to support the sector.
- Factor performance in developed ex-U.S. markets was led by momentum and quality, reflecting the cyclical rebound (momentum) coupled with continued pandemic uncertainty (quality, flight to safety); growth continued to outperform value (EAFE Growth: +17.0% vs. EAFE Value: +12.4%).

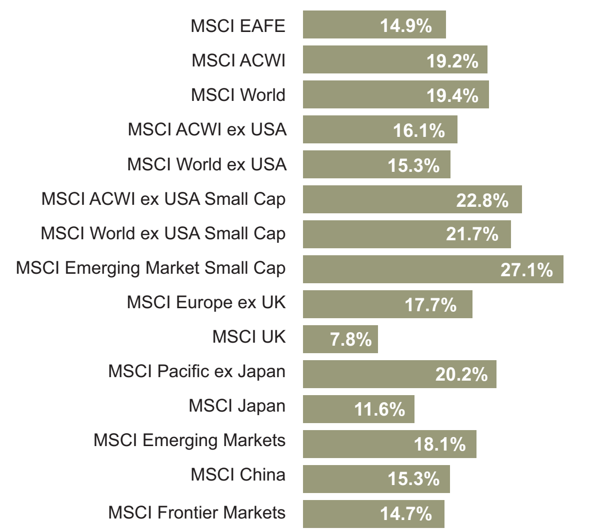
Emerging Markets

- Emerging markets produced their strongest quarterly gains in over a decade as fiscal and monetary stimulus from countries aided the second quarter rebound across all countries and sectors.
- Most EM countries ended lockdowns during the period, but Latin America, India, and some parts of Southeast Asia ended the second quarter with cases surging.
- Commodity-linked economies such as South Africa (+27.2%), Brazil (+22.9%), and Russia (+18.7%) recovered on the strength of metals, mining, and oil-related securities after being some of the worst-performing countries in 1Q20.
- China (+15.6%) lagged the index as U.S.-China trade tensions reignited and additional sanctions were imposed.
- Every sector posted positive returns, most in double digits.
- Growth outperformed value (EM Growth: +22.1% vs. EM Value: +13.8%)

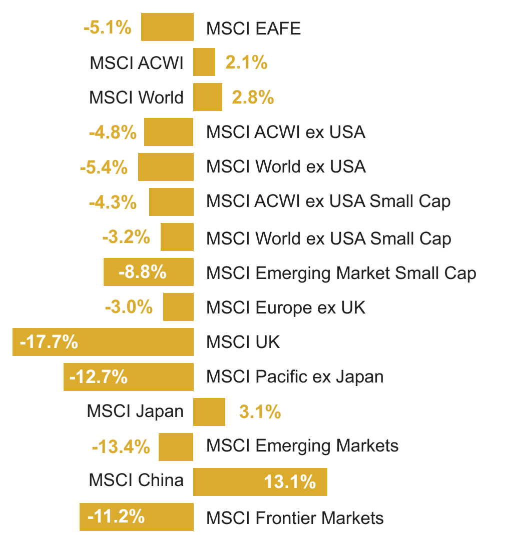
Global ex-U.S. Small Cap

- Global ex-U.S. small caps rallied during the second quarter as lockdowns eased and economies reopened.
- A risk-on mindset pervaded the global ex-U.S. small cap market that fueled double-digit returns for every sector in the MSCI ACWI ex-USA Small Cap Index.
- Australia (+47.1%) was the top-performing country; Japan (+12.8%) and the U.K. (+14.8%) were two of the weakest.

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

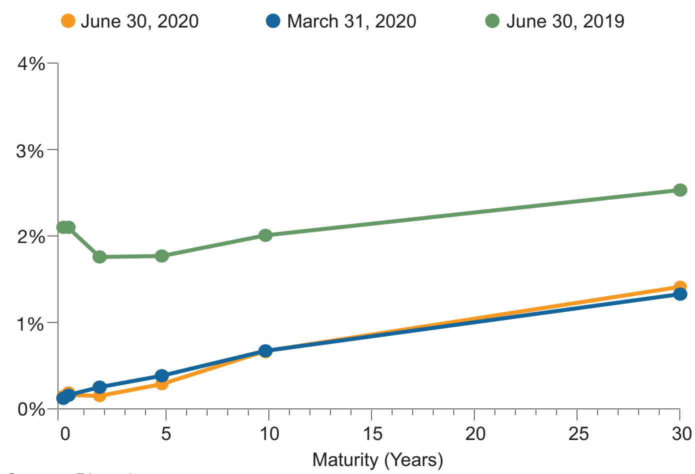
U.S. Treasury yields were range-bound

- The 10-year U.S. Treasury yield reached a high of 0.91% in June before closing the quarter at 0.66%, down slightly from the 1Q20 quarter-end level of 0.70%.
- After strong performance in 1Q20, U.S. Treasury returns lagged other "spread" sectors as risk appetites rebounded, fueled by massive Fed stimulus programs as well as improved liquidity.
- The Fed left rates on hold at 0% – 0.25% for the foreseeable future, anchoring the low end of the yield curve.
- TIPS outperformed nominal Treasuries as expectations for inflation rose. The 10-year breakeven spread ended the quarter at 1.34%, up from 0.87% as of the end of 1Q20.

Corporate credit rallied due to spread narrowing

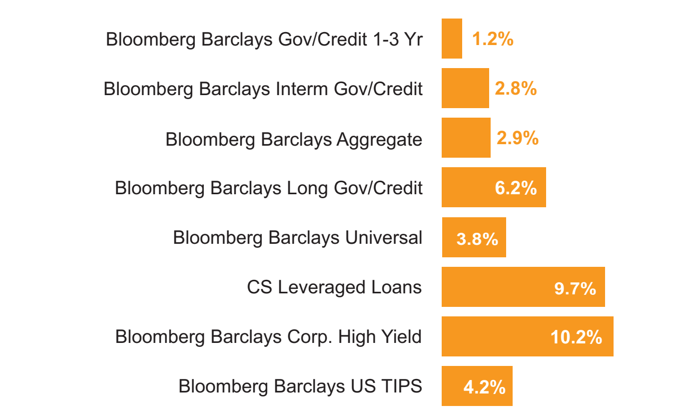
- Corporate credit rebounded amid improving investor confidence and economic data. However, fallen angels continued to spark concern with nearly half the investment grade bond market now rated BBB.
- Investment grade corporate spreads narrowed by 122 bps to 150 bps despite companies issuing record amounts of debt totaling $1.4 trillion; the Fed provided continued support through the announcements of the Primary and Secondary Market Corporate Credit Facilities.
- In a reversal from 1Q20, lower quality outperformed as BBB-rated credit (+11.2%) outperformed single A (+7.0%), AA (+5.0%), and AAA (+1.7%).
- High yield corporates also posted sharp returns (+10.2%). CCC-rated high yield corporates (+9.1%) lagged BB-rated corporates (+11.5%).
- The high yield default rate reached a 10-year high (6.2%).
- Energy (+40.0%) was the highest-performing high yield bond sub-sector, reflecting sharply higher oil prices.

U.S. Treasury Yield Curves



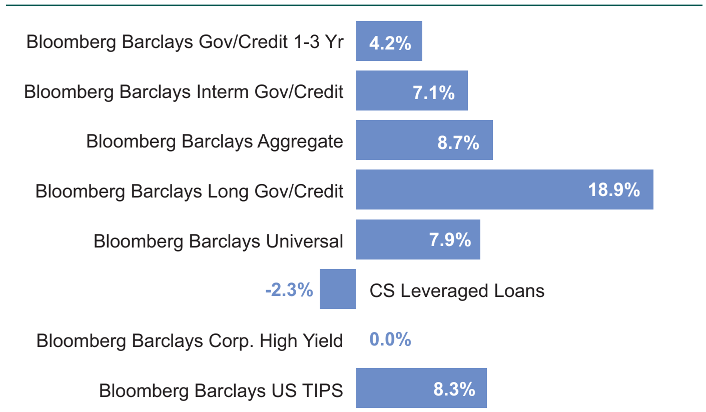
Source: Bloomberg

U.S. Fixed Income: Quarterly Returns



Sources: Bloomberg Barclays and Credit Suisse

U.S. Fixed Income: One-Year Returns



Sources: Bloomberg Barclays and Credit Suisse

Global Fixed Income

Global ex-U.S. fixed income rose amid rate cuts

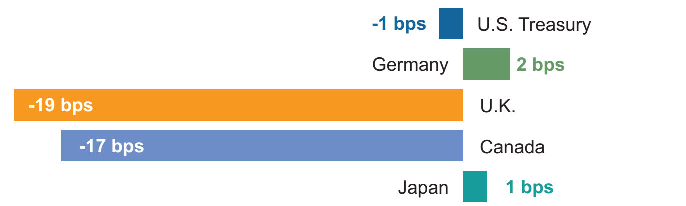
- The U.S. dollar depreciated modestly against a basket of developed market currencies, most notably the Australian and New Zealand dollars (-12.5%, -8.4%, respectively). The dollar was roughly flat versus the yen.
- Developed market sovereign bond yields ended the quarter lower amid rate cuts overseas, and the unhedged Bloomberg Barclays Global Aggregate ex-US benchmark posted positive returns (+3.4%)
- The ECB expanded the stimulus program announced in March from €750 billion to €1.35 trillion.

Emerging market debt made up ground

- The J.P. Morgan EMBI Global Diversified dollar-denominated benchmark posted strong returns (+12.3%) as oil prices rose and central bank liquidity measures took effect. However, the index remains slightly below year-end 2019 levels.
- Higher-yielding countries led the way in 2Q20 (+16.6%); however they remain down (-12.7%) relative to investment grade constituents year-to-date, according to index data from J.P. Morgan.
- Within the J.P. Morgan GBI-EM Global Diversified local currency-denominated benchmark (+9.8%), returns were positive for the vast majority of constituents. Oil-sensitive economies such as Mexico, Colombia, and South Africa rebounded to some degree, but remained down year-to-date.

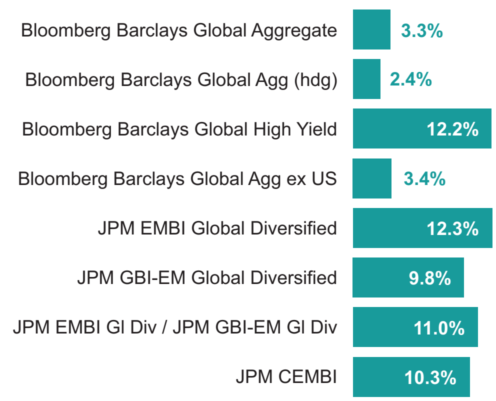
Change in 10-Year Global Government Bond Yields

1Q20 to 2Q20



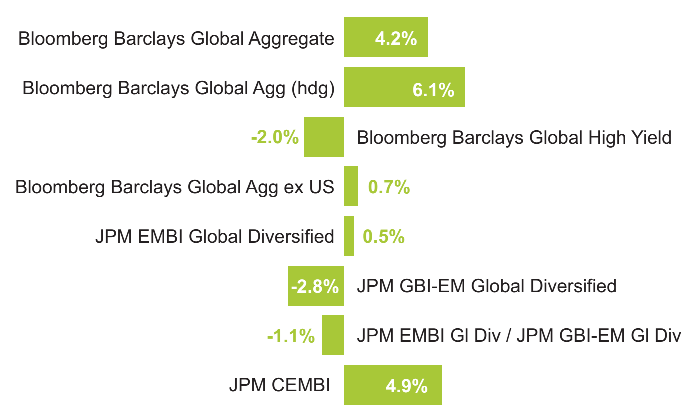
Source: Bloomberg Barclays

Global Fixed Income: Quarterly Returns



Sources: Bloomberg Barclays and JPMorgan Chase

Global Fixed Income: One-Year Returns



Sources: Bloomberg Barclays and JPMorgan Chase

Pandemic Has Muted Impact on Private Real Estate; REITs Underperform

REAL ESTATE/REAL ASSETS | Munir Iman

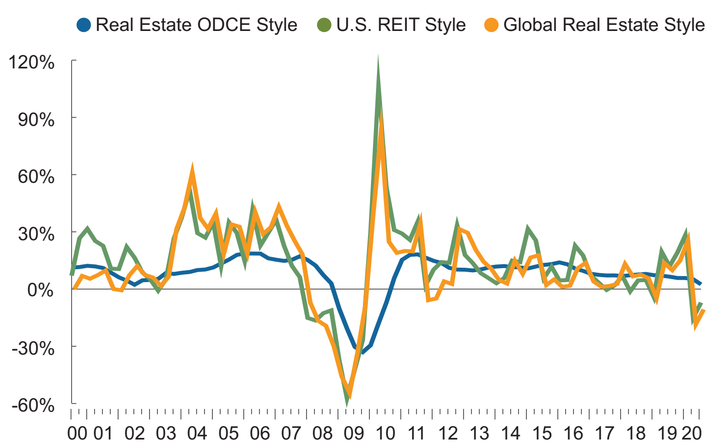
Private U.S. Real Estate

- The continued impact of the pandemic was reflected in 2Q20 results.
- All sectors of the NCREIF Property Index saw negative appreciation, but income remained positive except in the Hotel sector.
- Industrial remains the best performer.
- The dispersion of returns by manager within the NFI ODCE Index was due to both the composition of underlying portfolios and different valuation methodologies/approaches.
- Negative returns are expected over the next few quarters.
- Vacancy rates for all property types are or will be impacted.
- Net operating income has declined as retail experienced the largest drop-off in over 20 years.
- Second quarter rent collections show relatively stable income throughout the quarter in the Industrial, Apartment, and Office sectors. The Retail sector remains challenged, with regional malls impacted most heavily.
- Class A/B urban apartments were relatively strong, followed by certain types of Industrial and Office.
- Supply was in check before the pandemic.
- Construction is limited to finishing up existing projects but has been hampered by shelter-in-place policies and shortages of materials.
- New construction will be basically halted in future quarters except for pre-leased properties.
- Transaction volume has dropped off during the quarter with the exception of Industrial assets that have tenants with strong credit, which are trading at pre-COVID-19 levels.
- Cap rates remained steady during the quarter. The spread between cap rates and 10-year Treasuries is relatively high, leading some market participants to speculate that cap rates may not adjust much. Price discovery is happening and there are limited transactions.
- Callan believes the pandemic may cause a permanent repricing of risk across property types. Property types with more reliable cash flows will experience less of a change in cap rates; however, those with less reliable cash flows will see greater adjustments.

U.S. and Global REITs

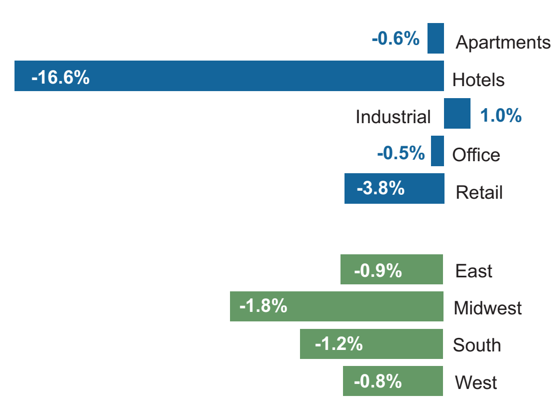
- Global REITs underperformed in 2Q20, gaining 10.1% compared to 19.4% for global equities (MSCI World).
- U.S. REITs rose 11.8% in 2Q20, lagging the S&P 500 Index, which jumped 20.5%.
- Globally, REITs (except in Singapore) are trading at a discount to NAV.
- In some regions the discount is at a five-year low.
- All property types except for data centers, hotels, and life sciences are trading at the bottom of their range.
- Ongoing volatility in REIT share prices offers opportunities to purchase mispriced securities, individual assets from REIT

Rolling One-Year Returns



Source: Callan

Sector Quarterly Returns by Property Type and Region



Source: NCREIF

owners, and discounted debt, as well as lend to companies and/or execute take-privates of public companies.

Infrastructure

- 1Q20 was the third-largest quarter for closed-end infrastructure fundraising ($37 billion), following 4Q19 ($43 billion) and 3Q18 ($38 billion). The closed-end fund market continues to expand, with infrastructure debt, emerging markets, and sector-specific strategies (e.g., communications and renewables). Investor interest in mezzanine or debt-focused funds has increased.
- Open-end funds raised significant capital in 2019, and the universe of investable funds continues to increase as the sector matures.
- In 2020 assets with guaranteed/contracted revenue or more inelastic demand patterns (e.g., renewables, telecoms, and utilities) fared better than assets with GDP/demand-based revenue (e.g. airports, seaports, and midstream-related).

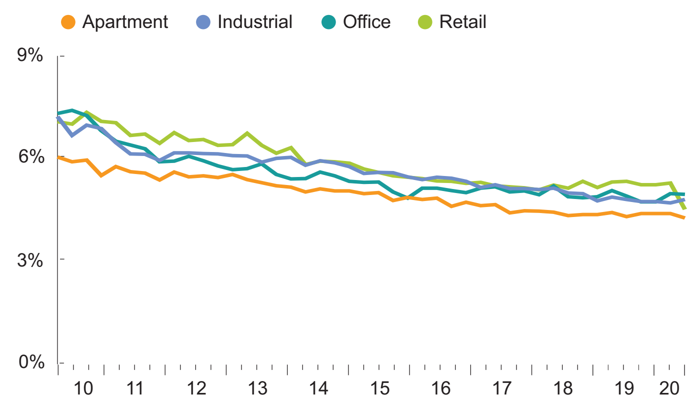
Real estate investment opportunities

- Primary opportunity: purchase of mispriced publicly traded real estate, both equity and debt
- Emerging opportunity: purchase of mezzanine loans from forced sellers

Infrastructure investment opportunities

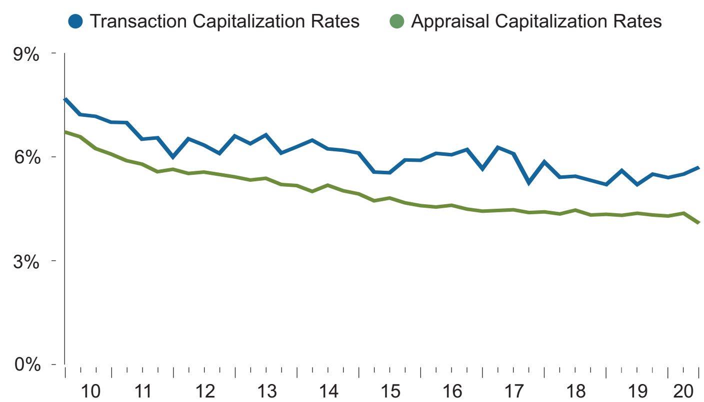
- Primary opportunity: purchase of mispriced publicly traded infrastructure
- Infrastructure lending if traditional lenders retrench

NCREIF Capitalization Rates by Property Type



Source: NCREIF. Capitalization rates (net operating income / current market value (or sale price)) are appraisal-based.

NCREIF Transaction and Appraisal Capitalization Rates



Source: NCREIF
Note: Transaction capitalization rate is equal weighted.

Callan Database Median and Index Returns* for Periods Ended 6/30/20

Private Real Assets	Quarter	Year to Date	Year	3 Years	5 Years	10 Years	15 Years
Real Estate ODCE Style	**-0.6**	**-0.2**	**2.5**	**5.5**	**7.2**	**10.1**	**6.0**
NFI-ODCE (value wt net)	-1.7	-1.0	1.3	4.7	6.3	9.8	6.0
NCREIF Property	-1.0	-0.3	2.7	5.4	6.8	9.7	7.7
NCREIF Farmland	0.6	0.5	2.5	4.9	6.2	10.7	12.9
NCREIF Timberland	0.1	0.2	0.3	2.3	2.7	4.4	6.2
Public Real Estate							
Global Real Estate Style	**10.5**	**-17.0**	**-10.7**	**2.2**	**3.7**	**8.4**	**5.6**
FTSE EPRA Nareit Developed	10.1	-21.3	-16.3	-1.6	1.3	6.3	--
Global ex-U.S. Real Estate Style	**10.1**	**-17.2**	**-9.2**	**3.1**	**3.5**	**7.9**	**5.6**
FTSE EPRA Nareit Dev ex US	8.6	-21.5	-15.9	-0.9	0.6	5.4	--
U.S. REIT Style	**12.1**	**-13.9**	**-7.1**	**2.9**	**5.8**	**10.3**	**7.1**
EPRA Nareit Equity REITs	11.8	-18.7	-13.0	0.0	4.1	9.1	6.0

*Returns less than one year are not annualized.
Sources: Callan, FTSE Russell, NCREIF

Activity Falls but Dollars Continue to Flow

PRIVATE EQUITY | Gary Robertson

Private equity metrics such as fundraising, company purchase prices, and private M&A exits plunged by count in the second quarter, but dollar volumes held relatively steady as larger transactions were able to proceed. Only IPOs increased in the second quarter, supported by the public market rally. Private equity returns in the first quarter fell, but by less than half of public equity's decline.

Fundraising ► Final closes for private equity partnerships in the second quarter totaled $149 billion of commitments in 229 partnerships, based on preliminary data. (Unless otherwise noted, all data come from PitchBook.) The dollar volume fell 18% but the number of funds rose 1% from the first quarter. For the first half, 2020 is running $26 billion or 10% ahead of a year ago, although the number of funds raised has fallen by 25%. We expect the second half of 2020 will decline from the first half, as general partners are slowing the deployment pace of their current funds and focusing on existing companies, resulting in fewer new funds coming to market.

Buyouts ► Funds closed 973 investments with $75 billion in disclosed deal value, a 51% fall in count and a 29% drop in dollar value from the first quarter. Average buyout prices plunged to 9.2x EBITDA in the second quarter, 2.3x lower than pricing for the full year 2019. Average leverage multiples fell to 4.9x.

Funds Closed 1/1/20 to 6/30/20

Strategy	No. of Funds	Amt ($mm)	Share
Venture Capital	261	59,755	20%
Growth Equity	42	29,669	10%
Buyouts	123	125,411	42%
Mezzanine Debt	4	2,888	1%
Distressed	5	8,000	3%
Energy	3	6,175	2%
Secondary and Other	46	50,431	17%
Fund-of-Funds	25	14,879	5%
Totals	**509**	**297,209**	**100%**

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

Venture Capital ► New rounds of financing in VC companies totaled 5,741, with $65 billion of announced value. The number of investments fell 20% but value rose 2% from the first quarter.

Exits ► There were 219 private M&A exits of private equity-backed companies, with disclosed values totaling $121 billion. The count fell 59% but values rose 68%. There were 15 private equity-backed IPOs in the second quarter raising an aggregate $11 billion, up 15% and 57%, respectively, from the first quarter. Venture-backed M&A exits totaled 283 with disclosed value of $23 billion. The number of sales declined 31% from the first quarter, but value rose 35%. There were 74 VC-backed IPOs in the second quarter with a combined float of $11 billion; the count jumped 40% and the issuance grew 83%.

Private Equity Performance (%) (Pooled Horizon IRRs through 3/31/20*)

Strategy	3 Months	Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years
All Venture	-2.85	9.10	14.62	11.29	14.85	11.36	5.71	28.09
Growth Equity	-5.45	5.44	13.53	11.77	12.82	12.60	10.35	14.17
All Buyouts	-9.93	0.79	10.71	11.31	13.28	12.32	10.95	12.78
Mezzanine	-4.78	2.38	8.70	8.84	10.57	10.16	7.51	9.56
Credit Opportunities	-12.06	-9.91	1.44	3.50	7.84	8.33	9.13	9.32
Control Distressed	-12.20	-8.67	2.09	5.02	9.25	8.92	9.56	10.09
All Private Equity	**-7.84**	**2.24**	**10.93**	**10.53**	**12.85**	**11.72**	**9.33**	**13.77**
S&P 500	-19.60	-6.98	5.10	6.73	10.53	7.58	4.79	8.85
Russell 3000	-20.90	-9.13	4.00	5.77	10.15	7.50	4.91	8.81

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

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

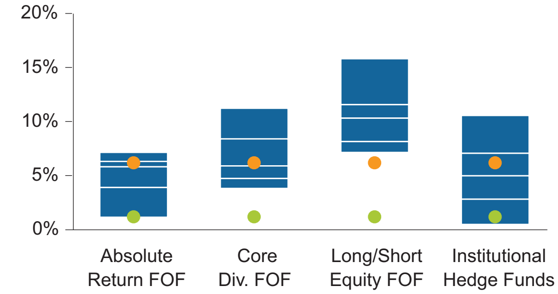
Beta Leads, Alpha Follows

HEDGE FUNDS/MACs | Jim McKee

Emboldened by dramatic monetary and fiscal stimulus, global markets reverted to full risk-on mode in the second quarter, and most hedge fund strategies benefited. Illustrating raw hedge fund performance without implementation costs, the Credit Suisse Hedge Fund Index (CS HFI) rose 6.2% in the second quarter, its strongest quarterly performance since 2009. The median manager in the Callan Hedge Fund-of-Funds Database Group, representing actual hedge fund portfolios, advanced 7.7% net of all fees and expenses.

The median manager in the Callan Institutional Hedge Fund Peer Group, tracking 50 of the largest, broadly diversified hedge funds with low-beta exposure to equity markets, gained 6.0%. Those funds focused on market neutral equity or rates arbitrage edged ahead 3% to 5%; those more exposed to illiquid credit strategies rebounded over 7%.

Hedge Fund Style Group Returns



	Absolute Return FOF	Core Div. FOF	Long/Short Equity FOF	Institutional Hedge Funds
10th Percentile	8.6	13.5	19.0	12.7
25th Percentile	7.6	10.1	13.9	8.5
Median	7.0	7.1	12.4	6.0
75th Percentile	4.7	5.7	9.8	3.4
90th Percentile	1.4	4.6	8.6	0.6
CS Hedge Fund	6.2	6.2	6.2	6.2
90-Day T-Bill +5%	1.2	1.2	1.2	1.2

Sources: Callan, Credit Suisse, and Federal Reserve

Callan Peer Group Median and Index Returns* for Periods Ended 6/30/20

Hedge Fund Universe	Quarter	Year to Date	Year	3 Years	5 Years	10 Years
Callan Institutional Hedge Fund Peer Group	**6.0**	**-0.6**	**1.3**	**3.9**	**4.1**	**5.4**
Callan Fund-of-Funds Peer Group	**7.7**	**-0.8**	**1.2**	**3.1**	**2.6**	**4.3**
Callan Absolute Return FOF Style	**7.0**	**-2.8**	**-1.8**	**2.3**	**2.2**	**3.5**
Callan Core Diversified FOF Style	**7.1**	**0.2**	**2.1**	**3.4**	**2.2**	**4.2**
Callan Long/Short Equity FOF Style	**12.4**	**-1.2**	**1.7**	**3.5**	**3.0**	**5.2**
Credit Suisse Hedge Fund	6.2	-3.3	-0.7	2.1	1.6	3.8
CS Convertible Arbitrage	5.9	0.2	3.2	2.8	3.0	3.9
CS Distressed	5.6	-5.7	-7.9	-1.0	0.3	3.3
CS Emerging Markets	13.2	1.3	4.7	4.1	4.1	4.8
CS Equity Market Neutral	3.4	-2.1	-2.7	0.0	0.0	1.6
CS Event-Driven Multi	12.0	-9.0	-7.3	-0.6	-1.3	2.1
CS Fixed Income Arb	2.7	-3.2	-0.7	2.1	2.9	4.5
CS Global Macro	4.6	-3.9	-1.1	3.2	1.8	3.9
CS Long/Short Equity	9.8	-2.5	2.6	3.5	2.7	5.2
CS Managed Futures	-2.9	-2.9	-2.0	2.2	-0.4	1.2
CS Multi-Strategy	3.9	-2.8	-0.9	1.6	3.0	5.7
CS Risk Arbitrage	7.5	0.2	2.4	2.3	3.0	2.8
HFRI Asset Wtd Composite	4.5	-7.4	-5.0	0.9	1.1	3.6
90-Day T-Bill + 5%	1.2	3.1	6.6	6.8	6.2	5.6

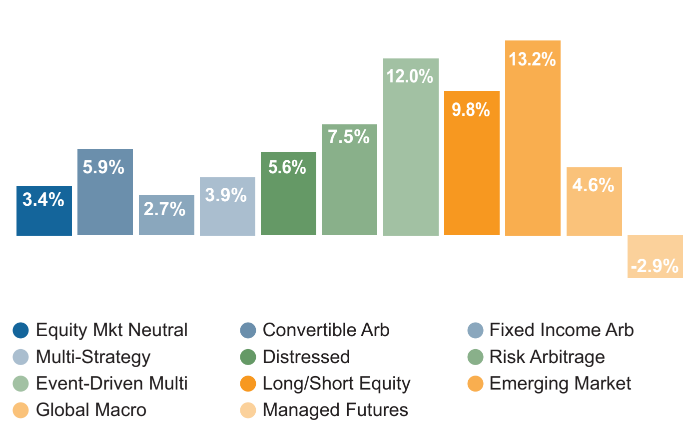
*Net of fees. Sources: Callan, Credit Suisse, Hedge Fund Research

Within CS HFI, the best-performing strategies last quarter were *Emerging Markets* (+13.2%), *Event-Driven Multi-Strategy* (+12.0%), and *Long/Short Equity* (+9.8%). Arbitrage strategies also benefited from the risk-on rally, but their hedges limited gains to mid-single digits or less. As the worst-performing strategy in CS HFI, *Managed Futures* (-2.9%) was caught flat-footed in the sudden equity rally.

Within the Hedge FOF Group, market exposures notably affected performance in the second quarter. Given its net long equity exposure, the median *Callan Long/Short Equity FOF* (+12.4%) decidedly beat the *Callan Absolute Return FOF* (+7.0%).

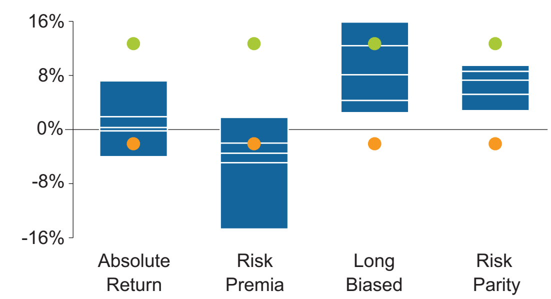
Within Callan's database of liquid alternative solutions, the median managers of the Callan Multi-Asset Class (MAC) Style Group generated mixed returns, gross of fees, consistent with their underlying risk exposures. Typically targeting equal risk-weighted allocations to major asset classes with leverage, the *Callan Risk Parity MAC* added 7.3%. However, the more traditional equity-centric benchmark of 60% MSCI ACWI and 40% Bloomberg Barclays US Aggregate Bond Index rose 12.7%. Given a usually long equity bias within dynamic asset allocation models, the *Callan Long-Biased MAC* (+8.1%) also trailed the global benchmark. As the most conservative MAC style focused on non-directional strategies of long and short asset class exposures, the *Callan Absolute Return MAC* edged ahead 0.3%. Reflecting the second quarter's challenging environment for alternative betas, such as the equity value and momentum factors, the median *Callan Risk Premia MAC* fell 3.5%.

Credit Suisse Hedge Fund Strategy Returns



Source: Credit Suisse

MAC Style Group Returns



	Absolute Return	Risk Premia	Long Biased	Risk Parity
10th Percentile	7.2	1.8	15.9	9.5
25th Percentile	1.9	-2.0	12.4	8.6
Median	0.3	-3.5	8.1	7.3
75th Percentile	-0.2	-4.9	4.3	5.2
90th Percentile	-4.0	-14.7	2.5	2.8
Eurekahedge MFRP (5%v)	-2.1	-2.1	-2.1	-2.1
60% MSCI ACWI/ 40% BB Barclays Agg	12.7	12.7	12.7	12.7

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

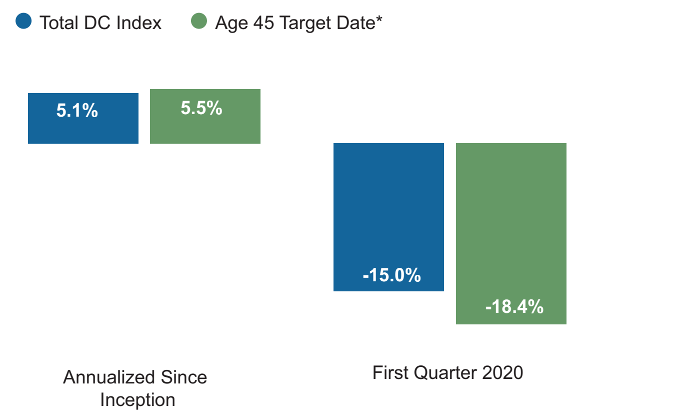
Index Posts Largest Quarterly Drop Since 4Q08

DEFINED CONTRIBUTION | Patrick Wisdom

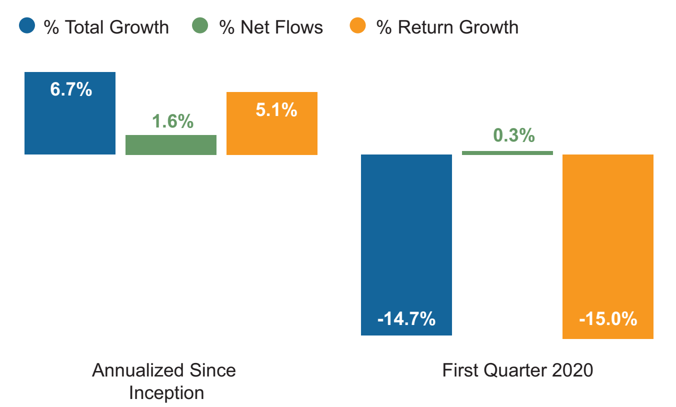
- The Callan DC Index™ lost 15.0% in 1Q20, the sharpest plunge since 4Q08, ending four consecutive quarters of gains. The Age 45 Target Date Fund posted a larger loss (-18.4%), attributable to its higher allocation to equity, which underperformed fixed income.
- The Index's sharp drop in balances (-14.7%) reversed four straight quarters of growth and was the biggest since the Index's inception. Poor investment returns (-15.0%) were the sole driver; quarterly net flows (0.3%) played a small mitigating role.
- With investors seeking less-risky investments, stable value funds saw the largest inflows (49.7%). U.S. large cap equity (-54.3%) and U.S. small/mid cap equity (-26.0%) had the largest outflows.
- Turnover in the DC Index (i.e., net transfer activity levels within DC plans) increased dramatically to 0.96% from the previous quarter's 0.38%, the highest since 3Q12.
- The allocation to equity fell to 66.0% in 1Q20 from 70.2% in the previous quarter, the lowest since 2012. The allocation to stable value increased to 11.8%.
- The allocations to large cap equity (23.8%) and small/mid cap equity (7.0%) both decreased by more than 1.4 percentage points. Global ex-U.S. equity (4.6%) and company stock (1.8%) had the next-largest decreases in allocation.
- The prevalence of a high yield offering (4.8%) increased in 1Q20 by nearly a percentage point from the previous quarter and now sits at its highest mark since 2017. On the other hand, the percentage of plans offering U.S. small/mid-cap equity dipped for the second straight quarter following six consecutive quarters of 100% prevalence.
- The presence of company stock (20.0%) decreased by more than a percentage point from the previous quarter. Similarly, the percentage of plans offering a brokerage window (40.0%) also fell by more than a percentage point.

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 (First Quarter 2020)
(Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Stable Value	49.67%
U.S. Fixed Income	21.23%
U.S. Smid Cap	-26.03%
U.S. Large Cap	-54.30%
Total Turnover**	**0.96%**

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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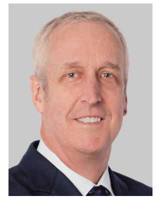

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The *Capital Market Review* is a quarterly macroeconomic indicator newsletter that provides thoughtful insights on the economy and recent performance in the equity, fixed income, alternatives, real estate, and other capital markets.

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