Callan Institute

Third Quarter 2020

Capital Markets Review

Caution Needed—Hard Road Ahead!

ECONOMY

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The huge jump in 3Q GDP still leaves it 3.5% below its previous peak (4Q19). Employment remains more than 10 million jobs short of the level reached in the U.S. in February of this year, and many other measures of economic activity remain below pre-pandemic levels.

Equity Jump Provided Some Help to Returns

INSTITUTIONAL INVESTORS

4 PAGE

Institutional investors saw more gains in 3Q20 as equities rebounded, but not enough to overcome lagging global ex-U.S. equity returns, which hindered performance against a 60% equities/40% bonds benchmark. But results over 20 years continue to match the benchmark.

Continued Gains, but With a Big Asterisk

EQUITY

6 PAGE

The S&P 500 rose in 3Q20 and has gained 5.6% year to date, but would be negative without the big jumps of the major technology firms. Supported by low rates, global equity returns were broadly positive across developed and emerging markets but have been muted YTD.

Low Returns in U.S.; Muted Gain Globally

FIXED INCOME

8 PAGE

U.S. Treasury yields were relatively unchanged, and the Aggregate was roughly flat. Corporate and CMBS were the strongest investment grade sectors as investors hunted for yield. Global fixed income rose amid rate cuts, but U.S. dollar weakness dampened hedged returns.

Virus Hit All Sectors; REITs Lagged Equities

REAL ESTATE/REAL ASSETS

10 PAGE

All sectors experienced negative appreciation in 3Q20, but income rose for every sector except for Hotels. Rent collection held up well for most sectors. All property types will see an impact on vacancy rates due to the pandemic. Most REITs trade at a discount to net asset value.

Activity Muted by Impact of Pandemic

PRIVATE EQUITY

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Most private equity activity measures were down in 3Q20 compared to the previous quarter, a pattern that also held for most year-to-date comparisons. A rough averaging across fundraising and private investments and exits indicates a 30% drop in year-over-year activity.

Stimulus Hopes, Fed Boost Risky Trades

HEDGE FUNDS/MACs

13 PAGE

Representing a portfolio of hedge fund interests without implementation costs, the Credit Suisse Hedge Fund Index rose 3.4% in 3Q20. As a live hedge fund portfolio, net of fees and expenses, the median manager in the Callan Hedge Fund-of-Funds Database Group advanced 3.7%.

Index's 2Q20 Gain of 15% Largest Ever

DEFINED CONTRIBUTION

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The Callan DC Index's rebound comes one quarter after the largest drop since 4Q08. The index also had its largest-ever increase in balances, driven primarily by robust investment returns. TDFs regained their position atop the inflows leaderboard.

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
9.2%	6.3%	0.6%	4.1%

Sources: Bloomberg Barclays, FTSE Russell, MSCI

Caution—Hard Road Ahead!

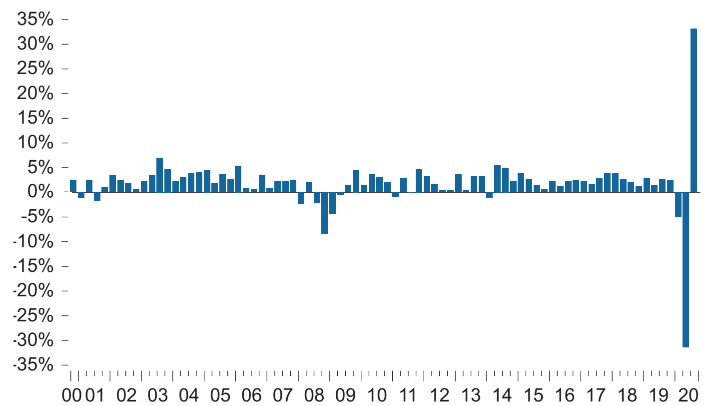
ECONOMY | Jay Kloepfer

GDP growth came roaring back in 3Q20 as expected, notching a 33.1% gain, following the 31.4% decline in 2Q. The 3Q growth rate set a record by a wide margin (as did the decline), but the interpretation of quarterly GDP growth is problematic when trying to understand the true condition of the U.S. and global economies. GDP is customarily reported as quarterly growth, translated to an annual rate, which helps remove some of the seasonal noise that interferes with evaluating economic activity in normal times. The past nine months have been anything but normal, and annualized quarterly growth rates on either side of a global economic shutdown are perhaps less meaningful than analyzing the level of current and future economic activity relative to that seen before the onset of the pandemic. The huge jump in 3Q still leaves GDP 3.5% below its previous peak (4Q19). Employment remains more than 10 million jobs short of the level reached in the U.S. in February of this year, and many other measures of economic activity such as personal consumption remain below pre-pandemic levels.

The surge in 3Q GDP clearly reflects the gradual reopening of the U.S. and global economies that began back in May. The sharp increases in jobs, spending, and output were concentrated in May, June, and July. Growth in subsequent months has been much more modest. High-frequency tracking of the economy from the likes of GDPNow (from the Federal Reserve) and IHS Markit not only signaled slowing growth in August and September, but these forecasters are now expecting 4Q GDP growth to cycle back down to 5% annualized.

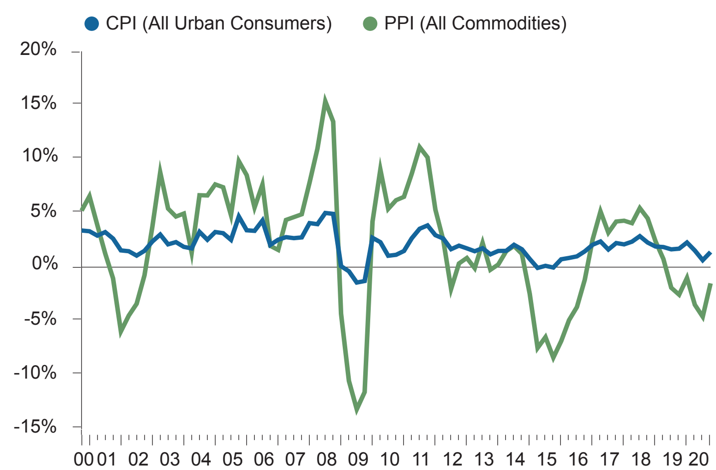
This would bring the level of GDP back close to where we started 2020, but the road forward into 2021 will be challenging. Growth across industry sectors, regions within the U.S., and occupations and income groups has been widely disparate. Technology illustrates the dichotomy. Defined as a combination of the Information Technology and Communication Services sectors, technology has seen lights-out performance in the stock market, up 22% collectively year-to-date through September, and accounts for 39% of the market cap of the S&P 500. Yet

Quarterly Real GDP Growth (20 Years)



Source: Bureau of Economic Analysis

Inflation Year-Over-Year



Source: Bureau of Labor Statistics

these two sectors account for just 6% of GDP, and only 2% of the U.S. job market as of August. The vast majority of jobs lost during the pandemic were in services (transportation, health care, financial business, and personal) as well as hospitality and retail. These sectors are underrepresented in the stock market, yet they employed a substantial portion of the U.S. workforce as the pandemic struck.

The slowdown in August, September, and into the fourth quarter came in part from a concern by both businesses and consumers about the end to the stimulus payments and to extended unemployment benefits in September. Without another round of stimulus and further extension of jobless aid, growth will likely be restrained as the economy continues to operate under pandemic constraints and the effect from the stimulus earlier in the year wanes. The increase in COVID-19 infection rates both around the U.S. and the world, the so-called third wave, will further burden strained medical systems and increase pandemic-related deaths. The rising tide of infections may force the return of more stringent restrictions at the state level to control the virus, although a sudden stop to economic activity similar to what happened in the spring is unlikely.

Not all the economic news is dour as we head into the fourth quarter. Manufacturers' orders for durable goods have shown considerable strength, and consumer purchases of durable goods have been incredibly robust. Excluding capital goods like defense hardware and civilian aircraft, orders for durable goods have fully recovered to pre-pandemic levels. Trade has surprised on the upside with a narrowing of the trade deficit, even with demand for exports depressed by weakness in the global economy. Another surprising source of strength has been the housing market. Investment in new housing has already reached its pre-pandemic peak, driven by low mortgage rates and newly created demand for improved and larger housing by people leaving the urban cores of many large cities. Underlying demographics such as the aging baby boom and the maturation of families in the next generation suggest this trend is near-term in nature and will likely fade as we see some sort of resolution to the pandemic, perhaps in the second half of 2021.

Government assistance targeted to aid those affected by pandemic-related closures helped greatly to support household incomes, spending, and therefore production. While the job market has a long way to go to recover all the jobs lost, the unemployment rate has surprised to the positive, falling from 14.7% in April to 7.9% in September. The thorn in the job market's side has been the number of initial unemployment claims, which remains stubbornly high at 837,000 in September, still far above prior periods of stress. For reference, at the bottom of the GFC in March 2009, initial claims hit 665,000.

The Long-Term View

		Periods Ended 9/30/20			
Index	**3Q20**	**Year**	**5 Yrs**	**10 Yrs**	**25 Yrs**
U.S. Equity					
Russell 3000	9.2	15.0	13.7	13.5	9.3
S&P 500	8.9	15.1	14.1	13.7	9.3
Russell 2000	4.9	0.4	8.0	9.9	8.0
Global ex-U.S. Equity					
MSCI EAFE	4.8	0.5	5.3	4.6	4.6
MSCI ACWI ex USA	6.3	3.0	6.2	4.0	--
MSCI Emerging Markets	9.6	10.5	9.0	2.5	--
MSCI ACWI ex USA Small Cap	10.5	7.0	6.8	5.3	5.8
Fixed Income					
Bloomberg Barclays Agg	0.6	7.0	4.2	3.6	5.3
90-Day T-Bill	0.0	1.1	1.2	0.6	2.3
Bloomberg Barclays Long G/C	1.2	12.9	8.8	7.4	7.7
Bloomberg Barclays Gl Agg ex US	4.1	5.5	3.6	1.3	3.9
Real Estate					
NCREIF Property	0.7	2.0	6.3	9.4	9.1
FTSE Nareit Equity	1.4	-18.2	3.9	7.9	9.3
Alternatives					
CS Hedge Fund	3.4	2.4	2.8	3.6	7.3
Cambridge PE*	9.9	7.7	11.4	13.4	14.9
Bloomberg Commodity	9.1	-8.2	-3.1	-6.0	0.9
Gold Spot Price	5.3	28.7	11.2	3.8	6.6
Inflation – CPI-U	1.0	1.4	1.8	1.8	2.1

*Data for most recent period lags by a quarter. Data as of 6/30/20.
Sources: Bloomberg, Bloomberg Barclays, Bureau of Economic Analysis, Credit Suisse, FTSE Russell, MSCI, NCREIF, Refinitiv/Cambridge, S&P Dow Jones Indices

Recent Quarterly Economic Indicators

	3Q20	2Q20	1Q20	4Q19	3Q19	2Q19	1Q19	4Q18
Employment Cost–Total Compensation Growth	2.4%	2.7%	2.8%	2.7%	2.8%	2.7%	2.8%	2.9%
Nonfarm Business–Productivity Growth	4.9%*	10.1%	-0.3%	1.6%	0.3%	2.0%	3.7%	0.8%
GDP Growth	33.1%	-32.9%	-5.0%	2.4%	2.6%	1.5%	2.9%	1.3%
Manufacturing Capacity Utilization	70.3%	63.1%	73.9%	75.0%	75.4%	75.5%	76.4%	77.0%
Consumer Sentiment Index (1966=100)	75.6	74.0	96.4	97.2	93.8	98.4	94.5	98.2

* Estimate

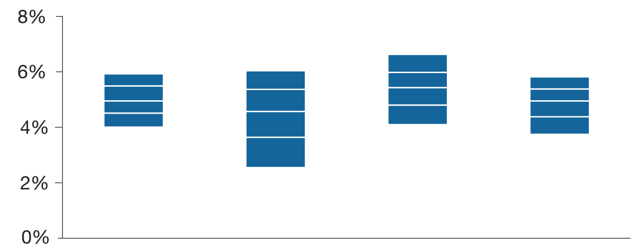
Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve, IHS Economics, Reuters/University of Michigan

Equity Gains Provided Some Help to 3Q Returns

INSTITUTIONAL INVESTORS

- The continuing equity rebound helped boost institutional investors' returns over the 12 months ending Sept. 30, especially compared to the negative results at the end of 1Q20. Corporate plans performed the best, possibly driven by higher bond allocations given the performance of the Bloomberg Barclays US Aggregate Bond Index. Taft-Hartley plans trailed their peers.
- But the exceptionally strong gains in U.S. equity did not provide a big-enough short-term boost to investor returns to help them match a 60% S&P 500/40% Aggregate benchmark during 3Q20, held down by lagging results for global ex-U.S. equities.
- Over shorter time periods ranging up to 10 years, all investor types lagged the 60%/40% benchmark, but over a 20-year time period, all types posted returns roughly in line with that benchmark.
- Institutional investors continued to increase allocations to alternative asset classes, while interest in increasing exposure to equities or fixed income was minimal.

Quarterly Returns, Callan Database Groups



	Public Database	Corporate Database	Nonprofit Database	Taft-Hartley Database
10th Percentile	5.9	6.0	6.6	5.8
25th Percentile	5.5	5.4	6.0	5.4
Median	5.0	4.6	5.4	5.0
75th Percentile	4.5	3.6	4.8	4.4
90th Percentile	4.0	2.6	4.1	3.8

Source: Callan

- Amid the pandemic, investors are shifting their focus from "What happened?" to "What should we do now?"
- Their liquidity needs have eased, but they are still top of mind.

Callan Database Median and Index Returns* for Periods Ended 9/30/20

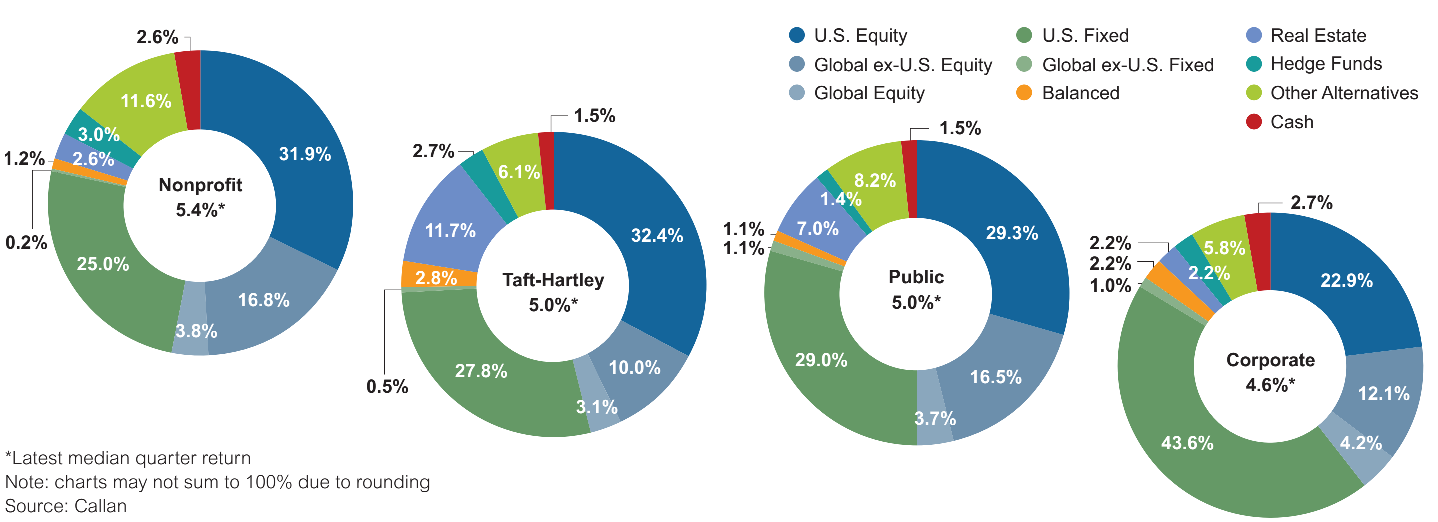
Database Group	Quarter	Year-to-date	Year	3 Years	5 Years	10 Years
Public Database	5.0	2.2	7.5	6.2	8.1	7.7
Corporate Database	4.6	4.9	9.5	7.5	8.9	8.2
Nonprofit Database	5.4	1.5	7.3	5.9	8.0	7.5
Taft-Hartley Database	5.0	1.6	7.1	6.4	8.2	8.1
All Institutional Investors	5.0	2.4	7.8	6.4	8.2	7.9
Large (>$1 billion)	4.9	2.8	8.0	6.8	8.3	8.1
Medium ($100mm - $1bn)	5.0	2.4	7.9	6.5	8.3	8.0
Small (<$100 million)	5.2	2.1	7.6	6.1	8.0	7.6

*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.

- Investors across the board are reevaluating the purpose and the future of all asset classes:
  - Fixed income
  - Public equity
  - Hedge funds and liquid alternatives
  - Private equity, private credit, and the notion of private capital
- Asset class structures are the focus of many investors.
- It has been business as usual for many investors in the face of political, economic, and public health upheaval; this is a rational response when so much is uncertain.
- Many institutional investors are examining active vs. passive, value, and alternatives to cap-weighted passive allocations for their global equity structure.
- Opportunistic allocations are making a return as investors eye tactical investments.
- Both corporate and public defined benefit (DB) plans have prioritized funding status.
- DB plans also indicated they planned to reduce their passive exposure, a shift from previous quarters.
- More corporate DB plans are putting their liability-driven investing (LDI) plans on hold, and there was a reduction in LDI interest for corporate DB plans amid concerns about the impact of a continued low-rate environment.
- Public DB plans continued to focus beyond the traditional asset classes.
- They are also exploring alternatives to cap-weighted passive exposures to combat the concentration risk in U.S. equity.
- Some have also re-introduced opportunistic buckets—with a zero target, up to 5% allocation—to fund opportunities as they arise.
- Fees continue to be the top issue for DC plan sponsors. But they have expressed growing interest in investment structures and reducing the number of options in the plan.
- DC litigation has not slowed down during the pandemic.
- Recordkeeper consolidation activity picked up in 3Q20 with notable announcements from two key providers.
- Nonprofits showed growing interest in private real estate. But their appetite for ESG investing significantly declined, although there was a notable rise in the share of clients hiring staff specifically for ESG.
- More nonprofits expressed interest in private real estate.
- Callan's strategic asset allocation work with endowments and community foundations is focused on evaluating investment portfolios that can support the desired distribution rate in order to balance intergenerational equity. Subdued expectations for capital markets returns are challenging both the risk tolerance of the organization and the sustainability of established spending rates.

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

Gains YTD

– S&P +8.9% for the quarter, bringing YTD to +5.6%
– Consumer Discretionary (+15%) and Industrials (+13%) dominated, with Tech (+12%) a close third in risk-on market.
– S&P 500 YTD would be negative if not for Facebook, Microsoft, Amazon, Alphabet, and Apple, representing 33% of the return.
– YTD, pandemic punished some sectors, rewarded others
– Tech +29% YTD; Cons. Disc. +23% (online retailers +60%)
– Energy -48% amid declining crude and natural gas prices
– Demand from hotels/cruise lines/airlines down as those industries have dropped 40%+

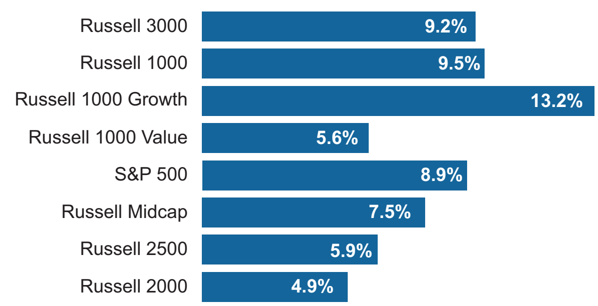
Small cap reverses to trail large cap

– Following a stellar 2Q20 recovery, small cap trailed large.
– Behind large cap by a wide margin over last 12 months

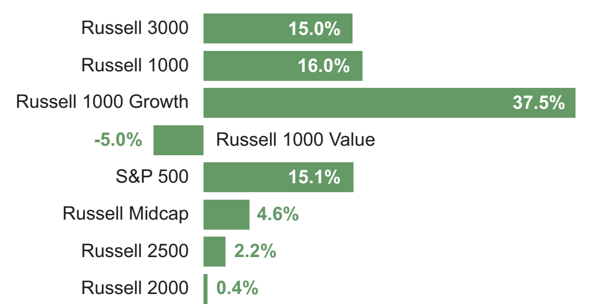
Growth continues to outpace value across market caps

– Growth, value dispersion near all-time high driven by Tech
– YTD RUS1G +25% vs. RUS1V -12%
– Growth stock P/E near 2x historical average across market caps
– Today's index concentration surpasses levels seen in the late 90's Dot-Com boom.
– Index concentration of the top five names is at 5 standard deviations above the 30-year average of approximately 13%.
– Large and small value indices continue to underperform large and small growth in 3Q20 and YTD.

U.S. Equity: Quarterly Returns



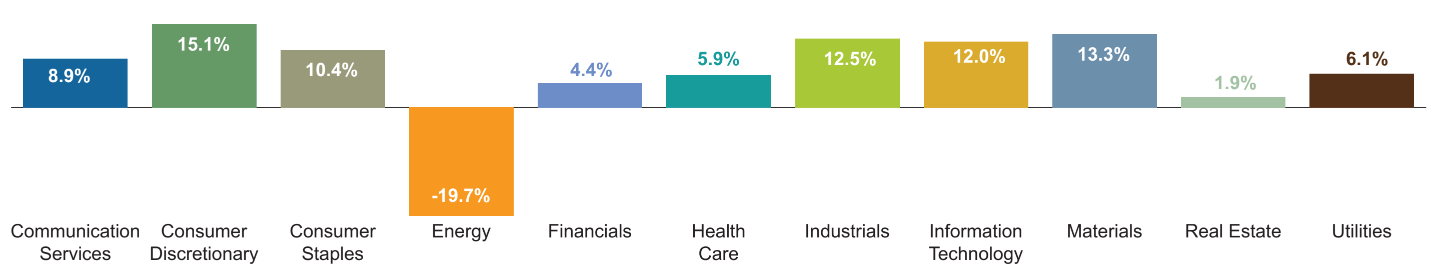
U.S. Equity: One-Year Returns



Sources: FTSE Russell and S&P Dow Jones Indices

– Higher interest rates, a steeper yield curve, economic growth, and improving consumer confidence are among the catalysts that could result in value outperforming.
– S&P 500 Index currently delivers a dividend yield well above the 10-year Treasury, which can help support current valuation levels.

Quarterly Performance of Industry Sectors



Source: S&P Dow Jones Indices

Global/Global ex-U.S. Equity

Continued recovery into 3Q20

- Returns broadly positive across developed and emerging markets but muted YTD
- Recent support from ultra-low interest rates and upward earnings revisions
- EM recovery driven by global risk-on environment; key countries within EM (China and South Korea) have better managed the pandemic
- Small cap continued to outperform large as lockdowns eased and business confidence improved.

Rebound for cyclicals

- Materials, Industrials, and Consumer Discretionary outperformed as consumption and production resumed.
- Factor performance led by momentum (rebound) and volatility (risk-on market mentality)

U.S. dollar vs. other currencies

- U.S. dollar lost ground versus every developed market currency on expectation of lower-for-longer U.S. rates due to Fed's shift in approach toward inflation and employment.

COVID-19 exacerbated outperformance of growth vs. value

- Growth outpaced value by 34% year-to-date as of Sept. 30.
- Extremely narrow market with performance dominated by Tech
- Growth benefited from strong performance by Information Technology (27%), while Financials (-22%) and Energy (-46%) weighed on value.
- YTD performance gap between growth and value has not been seen over the past 45 years.

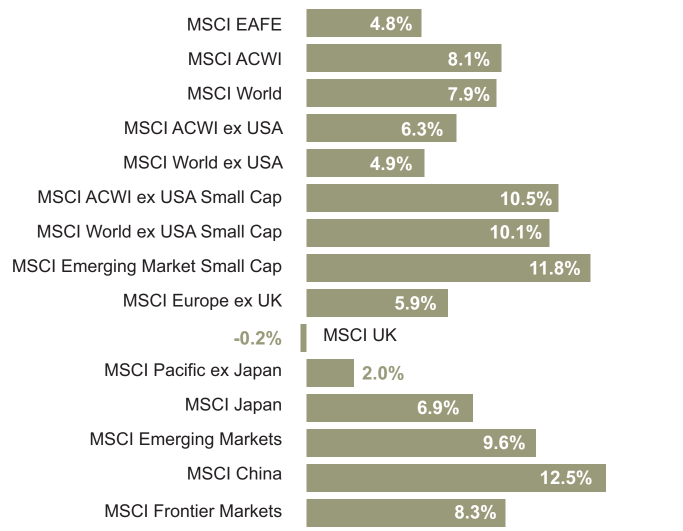
What may stoke value rotation?

- Higher bond yields may be needed to drive value rebound.
- Bond yields correlated to value/growth since the GFC

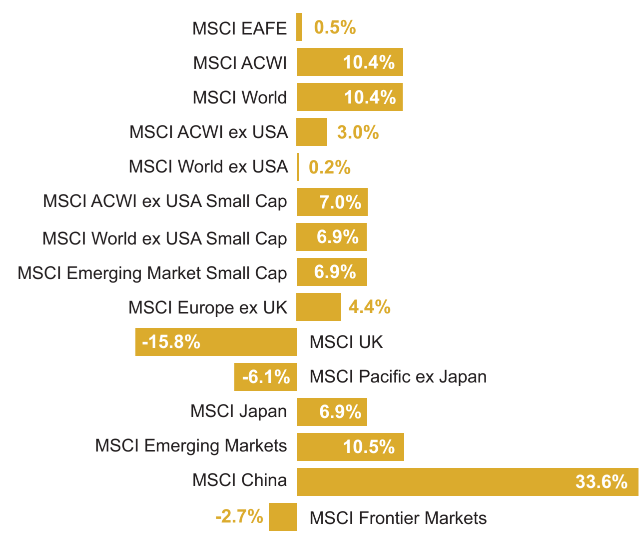
Key drivers: global recovery, U.S. elections

- Management of COVID-19 a key variable to recovery
- Advanced economies have struggled to contain the pandemic relative to emerging markets.
- Asian currencies have maintained resiliency relative to the U.S. dollar due to better COVID-19 management and economic outlook.

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

Treasury yields largely unchanged

- 10-year UST yield at 0.69% in 3Q20, up 3 bps from 2Q20 but off sharply from year-end level of 1.92%
- TIPS did well as inflation expectations rose from 1.34% to 1.63%.
- No rate hikes expected until at least 2023

Bloomberg Barclays Aggregate roughly flat

- Corporate and CMBS the strongest investment grade sectors as investors hunted for yield
- Corporate supply ($1 trillion YTD) at a record as companies rushed to take advantage of ultra-low interest rates

Risk-on sentiment helped high yield and loans

- Non-investment grade sectors rallied, but remained roughly flat YTD.
- The high yield bond market also experienced high levels of net new issuance (over $120 billion YTD).

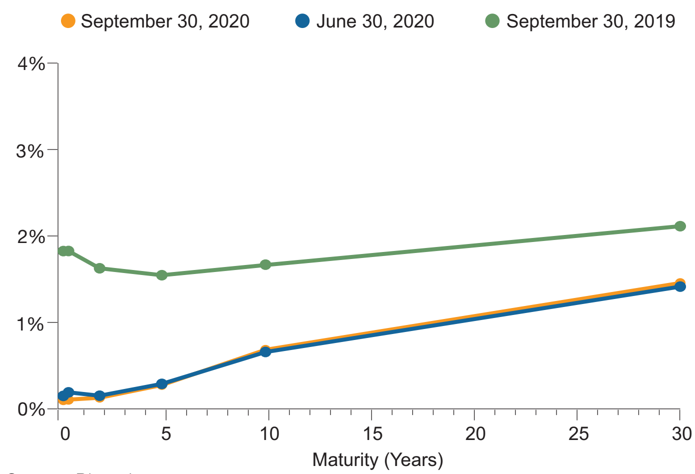
Munis boosted by favorable supply/demand dynamics

- Robust demand and muted supply of tax-exempt municipals
- Issuance in taxable municipals sharply higher
- Tax revenues better than expected, but challenges remain and stimulus uncertain (but needed)

High yield trended higher in quality

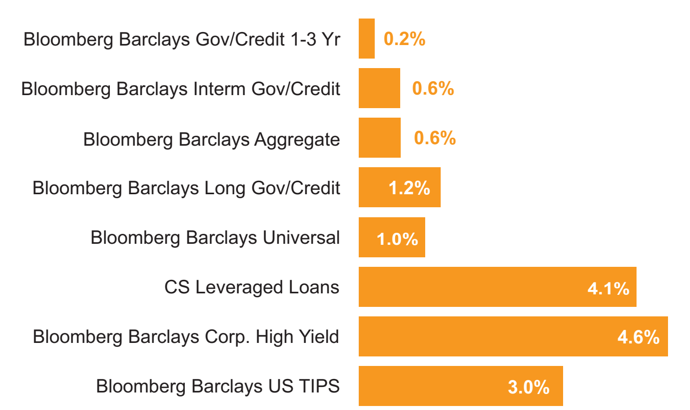
- BB/Ba-rated debt, the highest-quality category within high yield, experienced a surge of new issuance as 2020 remains a year of record new issuance across corporate debt.
- Reconstitution of downgraded investment grade debt into high yield has also added to the category.
- BBs now represent over half of the Bloomberg Barclays US High Yield Index.
- Historically, composition changes have generated market inefficiencies that managers can seek to exploit.

U.S. Treasury Yield Curves



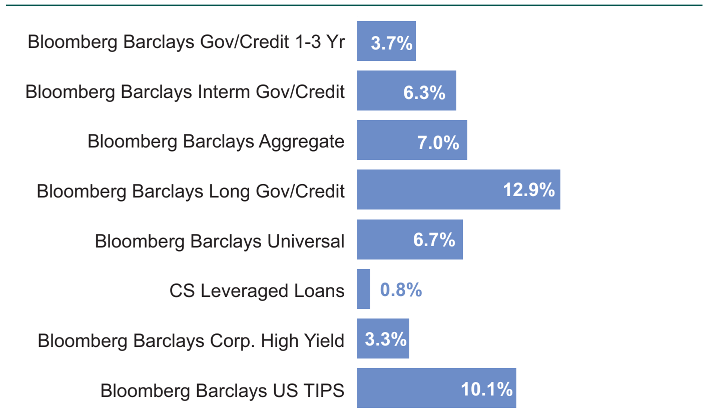
Source: Bloomberg

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

Default rate has trended higher, but below GFC levels

– Additionally, spreads at the height of COVID-19 implied a 16.8% default rate, but thus far defaults have been well below market expectations at 5.8%.

High yield spreads have rallied; managers are putting a greater focus on security selection

– Recovery rates remain low relative to the 30-year average, concentrated within pandemic-sensitive sectors (particularly retail and energy) and subordinated debt.
– The ratio of downgrades to upgrades is higher than in 2008.

Global Fixed Income

Rate cuts spur gains

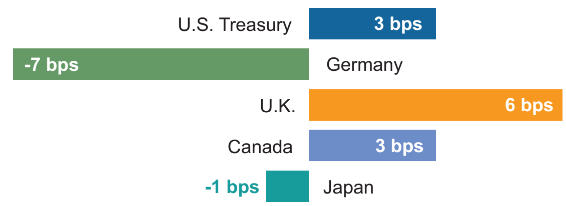
– Central banks continued to act aggressively to provide support via rate cuts, asset purchase programs, and other forms of stimulus.
– Broad-based U.S. dollar weakness dampened hedged returns as the USD lost 4% versus the euro and the British pound, and 2% versus the yen.
– Over 70% of global sovereign debt has negative real yields, a record high, according to JP Morgan.

Emerging market debt made up ground

– Emerging market debt indices gained in 3Q20 but remain down from year-end.
– U.S. dollar-denominated index (EMBI Global Diversified) outperformed local currency as U.S. rates fell; returns were mixed across the 70+ constituents, but most were positive.
– Local currency index (GBI-EM Global Diversified) was up slightly but returns varied widely among constituents (Russia: -8%; Brazil: -3%; Mexico and S. Africa: +6%).
– Staggered inclusion of China bonds continued with the weight rising to 7% in the JPM GBI-EM Global Diversified Index.

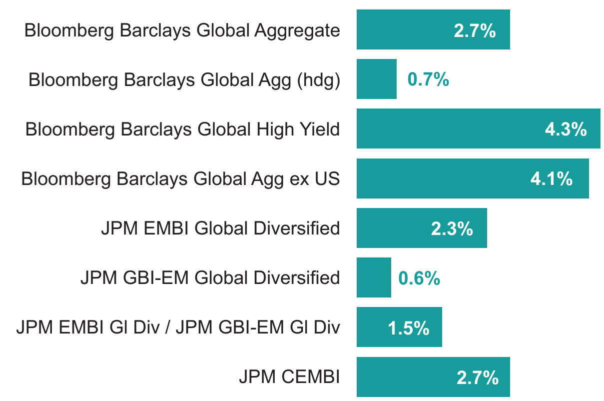
Change in 10-Year Global Government Bond Yields

2Q20 to 3Q20



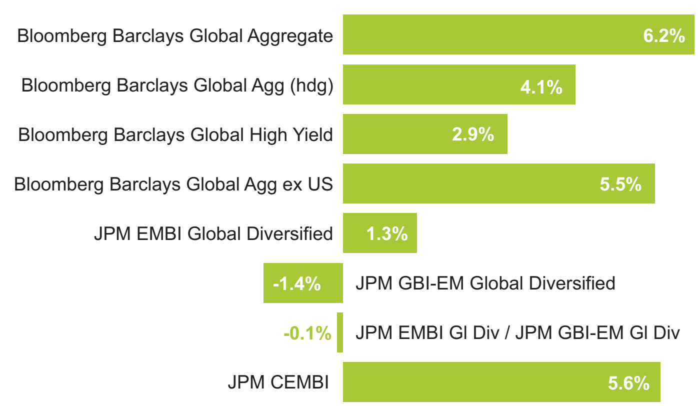
Source: Bloomberg Barclays

Global Fixed Income: Quarterly Returns



Sources: Bloomberg Barclays and JPMorgan Chase

Global Fixed Income: One-Year Returns



Sources: Bloomberg Barclays and JPMorgan Chase

Pandemic Hit All Sectors; REITs Gained but Trailed Equities

REAL ESTATE/REAL ASSETS | Munir Iman

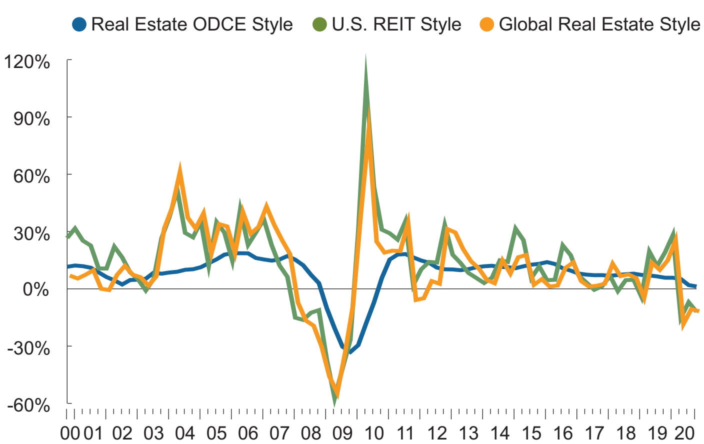
All sectors saw negative appreciation

- Pandemic's impact reflected in 3Q20 results
- Income remained positive except in Hotel sector.
- All sectors experienced negative appreciation; Industrial remained the best performer.
- Dispersion of returns by manager within the ODCE Index due to both composition of underlying portfolios and valuation methodologies/approach
- Negative appreciation returns expected for 4Q and beyond

U.S. real estate fundamentals

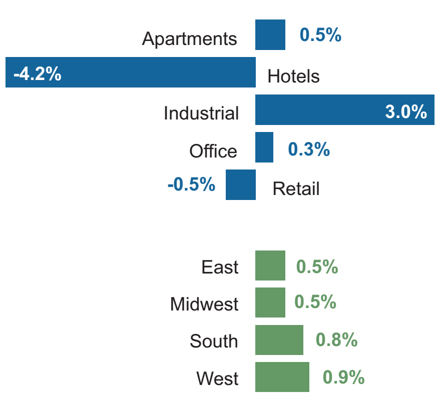
- Vacancy rates for all property types are or will be impacted.
- Net operating income has declined as retail continues to suffer.

Rolling One-Year Returns



Source: Callan

Sector Quarterly Returns by Property Type and Region



Source: NCREIF

- 3Q rent collections showed relatively stable income throughout the quarter in the Industrial, Apartment, and Office sectors. The Retail sector remained challenged, with regional malls impacted most heavily.
- Class A/B urban apartments relatively strong, followed by certain types of Industrial and Office
- New construction will be basically halted in future quarters except for pre-leased properties.
- Transaction volume dropped off during the quarter with the exception of industrial assets with strong-credit tenants 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 will not adjust much. Price discovery is happening and there are limited transactions.

Global REITs rose but lagged the equity market recovery

- Global REITs underperformed in 3Q20, gaining 2.1% compared to 7.9% for global equities (MSCI World).
- U.S. REITs rose 1.4% in 3Q20, lagging the S&P 500 Index, which jumped 8.9%.
- Globally, REITs except in the U.S. and Singapore are trading at a discount to net asset value. In some regions the discount is at a five-year high.
- Property sectors are mixed, between trading at a discount or premium.

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
- Industrial development can be implemented by well-capitalized owners that do not need a construction loan.
- Low LTV loans on core properties
- Distress, take-privates, rescue capital, recapitalizations, value add re-leasing strategies, and lending strategies will move into the opportunity set for investment as the pandemic

and social distancing continue and operating income is squeezed by tenants not paying rent.

- If core open end real estate funds are on the sidelines due to redemption queues, there may be more opportunities to buy core assets with less competition or to buy assets from the funds themselves.
- Industrial has been the one bright spot, as e-commerce take up has accelerated.

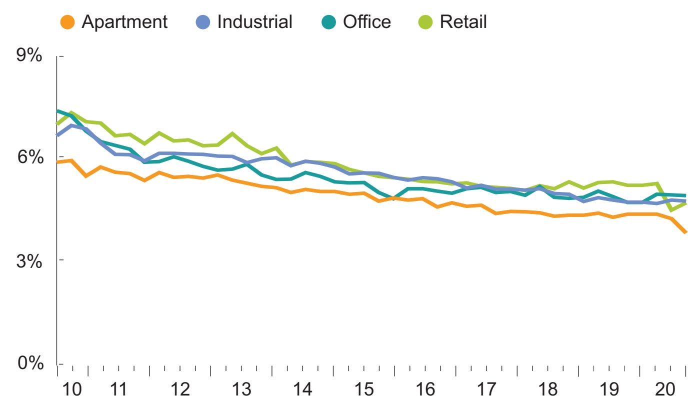
Infrastructure opportunities

- Strong performance from communications assets has drawn interest from infrastructure investors across the sector, and in some cases real estate investors for data centers.
- Pandemic could accelerate the purchase of assets or formation of PPPs from cash-strapped governments/municipalities
- Potential purchase of mispriced publicly traded infrastructure
- Some sellers looking to secure strong pricing for stable assets with steady cash flows
- Opportunity for purchase of assets from over-leveraged buyers and/or with GDP-linked revenue

Timberland and farmland opportunities

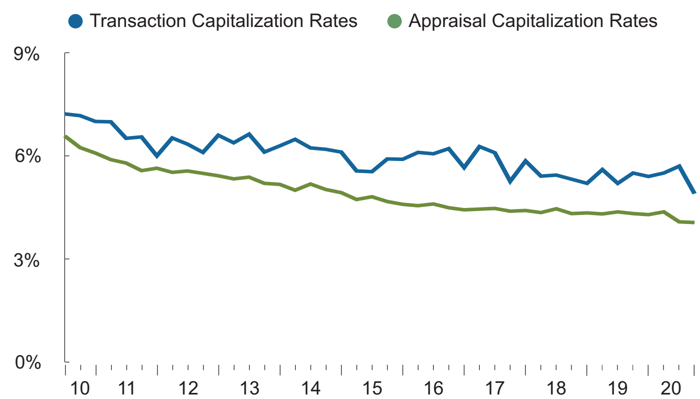
- Investment in farmland may increase if it proves to be a true diversifier in the pandemic.
- Volatility in commodity prices and changing supply chains may provide buying opportunities from overleveraged farmers and those who cannot shift crops away from restaurant/institutional use to grocery stores and suppliers to individual consumers.
- Institutional investment in timber has been waning for several years. The pandemic is unlikely to turn that tide.

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 9/30/20

Private Real Assets	Quarter	Year to Date	Year	3 Years	5 Years	10 Years	15 Years
Real Estate ODCE Style	**0.3**	**-0.4**	**1.2**	**4.6**	**6.3**	**9.4**	**5.7**
NFI-ODCE (value wt net)	0.3	-0.7	0.5	4.2	5.7	9.3	5.7
NCREIF Property	0.7	0.4	2.0	5.1	6.3	9.4	7.4
NCREIF Farmland	0.6	1.1	2.1	4.7	5.8	10.7	12.7
NCREIF Timberland	0.0	0.2	0.2	2.1	2.6	4.4	6.1
Public Real Estate							
Global Real Estate Style	**3.1**	**-13.9**	**-11.8**	**2.6**	**4.4**	**6.9**	**5.3**
FTSE EPRA Nareit Developed	2.1	-19.7	-18.3	-1.5	2.0	4.7	--
Global ex-U.S. Real Estate Style	**5.5**	**-12.0**	**-6.7**	**3.6**	**4.8**	**6.6**	**5.5**
FTSE EPRA Nareit Dev ex US	3.9	-18.5	-13.9	-0.6	2.5	3.7	--
U.S. REIT Style	**1.8**	**-12.3**	**-12.0**	**3.4**	**5.8**	**9.2**	**7.0**
EPRA Nareit Equity REITs	1.4	-17.5	-18.2	0.2	3.9	7.9	5.9

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

Pandemic's Impact Muted

PRIVATE EQUITY | Gary Robertson

Private equity activity measures were generally down in 3Q20, although the IPO market for both venture capital and buyouts showed large increases. So far this year, venture capital has been less affected by the pandemic than buyouts. While capital markets seemed to stabilize in the quarter, pricing private transactions based on future earnings power remains challenging.

Private equity partnerships holding final closes totaled $107 billion, with 224 new partnerships formed, according to PitchBook. The dollar volume fell 36% from 2Q20, and the number of funds holding final closes fell 12%. So far this year, 2020 is running 7% behind 2019. Energy and mezzanine have fallen out of favor with investors, but other strategies are in line with historical market share.

The number of new buyout transactions increased but transactions were smaller, according to PitchBook. Funds closed 1,500 company investments with $65 billion in disclosed deal value, a 31% increase in count but a 32% drop in dollar value from 2Q20.

According to PitchBook, new financing rounds in venture capital companies totaled 6,234, with $76 billion of announced value. The number of investments was down 13% from the prior quarter, and announced value rose 7%. The median pre-money valuations of Series A through D rounds continued to increase, with only seed stage remaining flat.

Funds Closed 1/1/20 to 9/30/20

Strategy	No. of Funds	Amt ($mm)	Share
Venture Capital	409	81,381	19%
Growth Equity	69	42,029	10%
Buyouts	195	196,737	45%
Mezzanine Debt	9	7,501	2%
Distressed	18	22,924	5%
Energy	4	6,216	1%
Secondary and Other	57	59,609	14%
Fund-of-Funds	44	20,612	5%
Totals	**805**	**437,009**	**100%**

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

There were 294 private M&A exits of private equity-backed companies (excluding venture capital), PitchBook reports, with disclosed values totaling $37 billion. Exits were up 12% from the prior quarter but announced dollar volume plunged 70%. The year-to-date exit count declined 41%. There were 40 private-equity backed IPOs in 3Q raising $6 billion, a steep jump from 17 totaling $12 billion previously.

Venture-backed M&A exits totaled 336 transactions with disclosed value of $15 billion. The number of sales increased 3% and announced dollar volume slid 35%. The year-to-date exit count declined 24%. There were 122 VC-backed IPOs with a combined float of $15 billion. For comparison, 2Q had 326 IPOs and total issuance of $23 billion.

Private Equity Performance (%) (Pooled Horizon IRRs through 6/30/20*)

Strategy	3 Months	Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years
All Venture	11.51	14.97	17.99	12.08	15.98	11.88	5.95	27.61
Growth Equity	12.85	13.08	16.42	13.12	14.11	13.10	10.94	14.66
All Buyouts	9.25	5.77	11.38	11.79	14.17	12.29	11.36	12.95
Mezzanine	2.99	2.91	8.50	8.85	10.79	10.03	7.87	9.50
Credit Opportunities	5.61	-5.64	2.35	4.30	8.65	8.50	9.30	9.41
Control Distressed	9.49	-1.35	3.85	6.29	10.15	9.39	9.96	10.43
All Private Equity	**10.02**	**7.82**	**12.53**	**11.28**	**13.82**	**11.90**	**9.68**	**13.94**
S&P 500	20.54	7.51	10.73	10.73	13.99	8.83	5.91	9.27
Russell 3000	22.03	6.67	10.19	9.96	14.57	9.36	8.00	9.10

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 Markets Review* and other Callan publications.

Stimulus Hopes Boosted Risky Bets

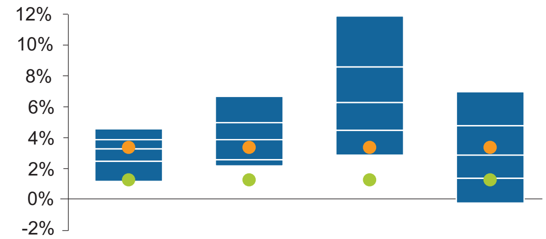
HEDGE FUNDS/MACs | Jim McKee

Hope may not be a strategy, but it elevated risk appetites in 3Q20. Active bets of hedge funds proved mostly positive amid the backdrop of rebounding equity and credit markets, continued low rates, and the potential for additional government stimulus payments.

Representing a paper portfolio of hedge fund interests without implementation costs, the Credit Suisse Hedge Fund Index (CS HFI) rose 3.4% in 3Q20. As a live hedge fund portfolio, net of fees and expenses, the median manager in the Callan Hedge Fund-of-Funds Peer Group advanced 3.7%.

Representing 50 large, broadly diversified hedge funds with low-beta exposure to equity markets, the average manager in the Callan Institutional Hedge Fund (CIHF) Peer Group added 3.1%. The average CIHF fund focused on Hedged Equity grew 4.1%, benefiting from continued stock and sector

Hedge Fund Style Group Returns



	Absolute Return FOF	Core Div. FOF	Long/Short Equity FOF	Institutional Hedge Funds
10th Percentile	4.6	6.7	11.9	7.0
25th Percentile	3.9	5.0	8.6	4.8
Median	3.3	3.9	6.3	2.9
75th Percentile	2.5	2.6	4.5	1.4
90th Percentile	1.2	2.2	2.9	-0.2
CS Hedge Fund	3.4	3.4	3.4	3.4
90-Day T-Bill +5%	1.3	1.3	1.3	1.3

Sources: Callan, Credit Suisse, Federal Reserve

Callan Peer Group Median and Index Returns* for Periods Ended 9/30/20

Hedge Fund Universe	Quarter	Year to Date	Year	3 Years	5 Years	10 Years
Callan Institutional Hedge Fund Peer Group	**2.9**	**1.6**	**4.4**	**3.9**	**4.7**	**5.6**
Callan Fund-of-Funds Peer Group	**3.7**	**2.4**	**5.1**	**3.5**	**3.8**	**4.2**
Callan Absolute Return FOF Style	**3.3**	**1.1**	**2.0**	**3.1**	**2.8**	**3.6**
Callan Core Diversified FOF Style	**3.9**	**2.1**	**5.0**	**3.5**	**3.8**	**4.1**
Callan Long/Short Equity FOF Style	**6.3**	**6.6**	**10.1**	**5.0**	**5.0**	**5.5**
BB GS Cross Asset Risk Premia 6% Vol Idx	-0.7	-5.5	-6.8	2.5	2.8	5.0
Credit Suisse Hedge Fund	3.4	0.0	2.4	2.7	2.8	3.6
CS Convertible Arbitrage	5.6	5.8	9.4	4.1	4.5	4.0
CS Distressed	0.9	-4.9	-3.7	-1.2	1.3	3.2
CS Emerging Markets	4.9	6.3	14.6	3.9	6.3	4.5
CS Equity Market Neutral	3.1	1.0	2.0	-0.4	0.2	1.6
CS Event-Driven Multi	6.1	-3.5	-0.9	1.2	1.3	2.1
CS Fixed Income Arb	3.6	0.3	2.6	3.2	3.6	4.5
CS Global Macro	4.6	0.5	1.3	4.1	3.4	3.9
CS Long/Short Equity	2.8	0.2	5.3	3.5	3.6	4.9
CS Managed Futures	-1.0	-3.8	-6.3	1.4	-1.4	0.5
CS Multi-Strategy	3.4	0.5	1.8	2.3	3.6	5.6
CS Risk Arbitrage	4.0	4.2	6.3	3.1	4.3	2.7
HFRI Asset Wtd Composite	2.5	-4.4	-2.2	1.4	2.4	3.4
90-Day T-Bill + 5%	1.3	4.4	6.1	6.7	6.2	5.6

*Net of fees. Sources: Bloomberg Barclays GSAM, Callan, Credit Suisse, Hedge Fund Research dispersion. Those more exposed to Hedged Credit strategies advanced 3.1% on average but were still suffering a 2.4% year-to-date loss, as the recovery of illiquid credit lagged more liquid markets.

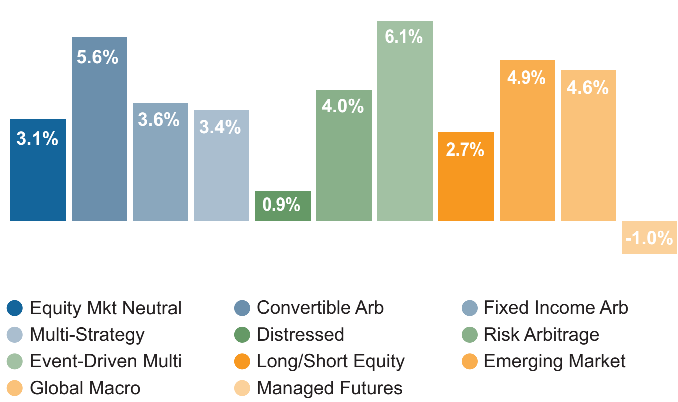
Within the Callan Hedge Fund-of-Funds Group, market exposures notably affected performance in 3Q. Benefiting from beta tailwinds, the median Callan Long/Short Equity FOF (+6.3%) easily beat the Callan Absolute Return FOF (+3.3%), which typically have exposures to less liquid risk premia like credit. With fuller exposure to both non-directional and directional styles, the Core Diversified FOF gained 3.9%.

Within CS HFI, the best-performing strategy last quarter was Event-Driven Multi-Strategy (+6.1%), which tends to benefit more in risk-on environments with soft equity catalysts. Another strong strategy was Convertible Arbitrage (+5.6%), as it benefited from unusually strong issuance with discounted pricing. Although the big interest in risk assets helped, Distressed clawed ahead only 0.9% with its deep value assets mired in COVID-stricken parts of the economy. Without any meaningful asset class trends to track, Managed Futures (-1.0%) was the only CS HFI strategy that lost value.

Measuring the performance of systematic risk premia in 3Q, the Bloomberg GSAM Risk Premia Index (RPI) lost 0.6% based upon a 6% volatility target. Among the Index's unlevered components of risk premia, the biggest detractor was U.S. Equity Value L/S (-6.5%), which has now fallen 22.8% YTD. Another big detractor within the RPI was Currency Carry (-2.4%). As the risk premia that often complements the performance of value, U.S. Equity Momentum L/S gained 3.2%.

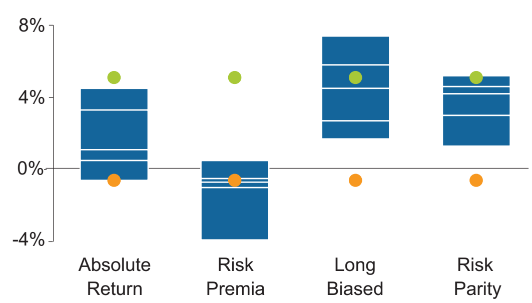
Within Callan's database of liquid alternative solutions, the median managers of Callan Multi-Asset Class (MAC) Style Groups generated mixed results, gross of fees, consistent with their underlying risk exposures. For example, the median Callan Risk Premia MAC fell 0.7% based on its exposures to alternative betas (such as those in the Bloomberg GSAM index noted above) targeting 5% to 15% portfolio volatility. Typically targeting equal risk-weighted allocations to major asset classes with leverage, the Callan Risk Parity MAC (+4.2%) trailed the traditional unlevered benchmark of 60% MSCI ACWI and 40% Bloomberg Barclays US Aggregate Bond Index (+5.1%) that was less impacted by a stalled bond market. Though usually long equity bias within its dynamic asset allocation mandate, the Callan Long-Biased MAC (+4.5%) similarly underperformed the 60%/40% index.

Credit Suisse Hedge Fund Strategy Returns



Source: Credit Suisse

MAC Style Group Returns



	Absolute Return	Risk Premia	Long Biased	Risk Parity
10th Percentile	4.5	0.5	7.4	5.2
25th Percentile	3.3	-0.5	5.8	4.6
Median	1.1	-0.7	4.5	4.2
75th Percentile	0.5	-1.0	2.7	3.0
90th Percentile	-0.6	-3.9	1.7	1.3
BB GS Cross Asset Risk Premia (6%v) ●	-0.6	-0.6	-0.6	-0.6
60% MSCI ACWI/ 40% BB Barclays Agg ●	5.1	5.1	5.1	5.1

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

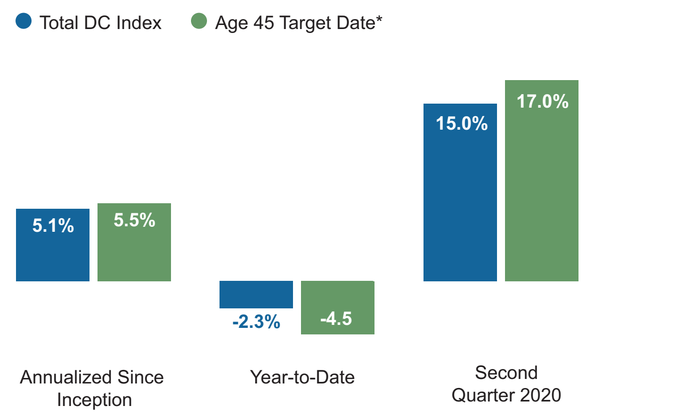
Index's 2Q20 Gain of 15% Is Its Largest Ever

DEFINED CONTRIBUTION | Patrick Wisdom

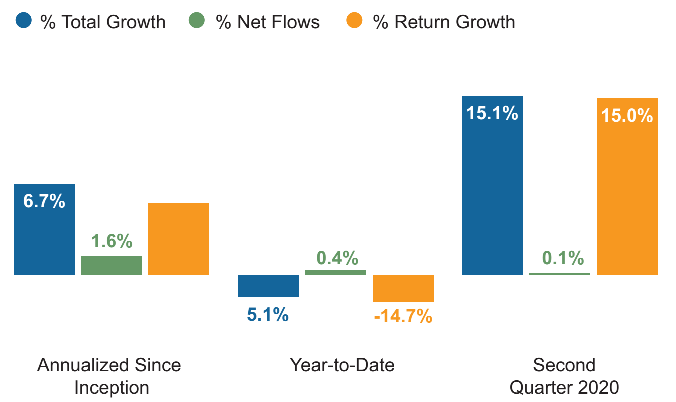
- The Callan DC Index™ jumped 15.0% in 2Q20, its largest gain since inception. It was also a sharp reversal from its 15.0% plunge in the first quarter, which was the largest drop since 4Q08. The Age 45 Target Date Fund (analogous to the 2040 vintage) posted a larger second-quarter gain (17.0%), attributable to its higher allocation to equity, which outperformed fixed income during the quarter.
- The Index also recorded its largest-ever increase in balances during 2Q (15.1%), a quarter after experiencing its biggest-ever quarterly drop. The quarter's robust investment returns were the primary driver.
- After an unusual first quarter in which target date funds (TDFs) received only 1.9% of net inflows, TDFs reclaimed their usual spot atop the inflow leaderboard with quarterly net flows of 41.4%.
- Brokerage windows (7.2%) saw their second consecutive quarter of inflows. On the other hand, U.S. small/mid cap equity (-28.3%) had the largest percentage of outflows.
- Second-quarter turnover (i.e., net transfer activity levels within DC plans) returned to a more typical level, decreasing to 0.37% from the previous quarter's measure of 0.96%.
- The Index's overall allocation to equity increased to 68.4% after dipping to 66.0% in the previous quarter, the smallest since 2012.
- The percentage of assets allocated to U.S. large cap increased by more than 1.6 percentage points, bringing the overall allocation to 25.4%. U.S. small/mid cap (7.7%) saw the next largest increase from the previous quarter.
- Stable value (10.2%) had the largest decrease in allocation after having the largest gain during the previous quarter.
- The prevalence of a money market offering (47.7%) increased by nearly 4 percentage points from the previous quarter and sits at its highest mark since 3Q17.

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 (2Q20)
(Top Two and Bottom Two Asset Gatherers)

Asset Class	Flows as % of Total Net Flows
Target Date Funds	41.40%
U.S. Fixed Income	31.91%
U.S. Large Cap	-21.06%
U.S. Smid Cap	-28.29%
Total Turnover**	**0.37%**

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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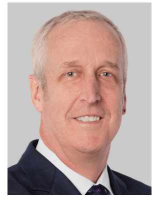

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The *Capital Market Review* is a quarterly macroeconomic indicator newsletter that provides thoughtful insights on the economy and recent performance in the equity, fixed income, alternatives, real estate, and other capital markets.

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About Callan

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