Overview

In April, risk assets rallied broadly despite a confluence of deteriorating economic data as the United States became the epicenter of the global COVID-19 pandemic. The U.S. passed the milestone of 1 million COVID-19 cases on April 29, with its case count more than quintupling over the month. Market participants weighed the impact of unprecedented stimulus alongside optimism that some economies were beginning to selectively re-open businesses. The S&P 500 recorded its best monthly return since 2011, ending the month up 12.82%. International developed equities, as measured by the MSCI All Country World Index, returned 10.78%; emerging market equities, as measured by the MSCI Emerging Markets Index, returned 9.18%. One asset class noticeably absent from the risk-on rally was commodities, which fell 1.55% as measured by the Bloomberg Commodity Index. Weakness in the energy sector was evident in West Texas Intermediate (WTI) crude. The May futures contract priced and settled in negative territory, an unprecedented event. The intraday low printed at -$40.32; delivery settled at -$37.63. Already reeling from oversupply and a precipitous collapse in demand from global economic shutdowns, the crude oil market was also hit by a shortage of available physical storage as participants who were long May WTI crude oil contracts rushed to sell to avoid taking physical delivery at expiration.

Broadly speaking, credit assets rallied in April. U.S. investment grade corporate credit retraced its first quarter losses, returning 4.58% for the month and up 1.29% year-to-date (YTD), as measured by the Bloomberg Barclays US Credit Index. Meanwhile, the Bloomberg Barclays US High Yield Index returned 4.51% in April but remains negative for the year, down 8.75% YTD. Bank loans also caught the bid, returning 4.50% for the month but were down 9.13% YTD, as measured by the S&P/LSTA Leveraged Loan Index. Securitized credit generally lagged other sectors of credit in April, as the Federal Reserve (Fed) has left parts of that market largely unaddressed by its announced policy facilities. (Figure 1)

U.S. real gross domestic product (GDP) decreased at an annualized rate of 4.8% in the first quarter of 2020, according to the advanced estimate released by the Bureau of Economic Analysis. If the estimate holds, then this will be the first quarter-over-quarter (QoQ) decline since 2014, and the worst quarterly contraction since the fourth quarter of 2008. Personal consumption, which currently accounts for 70% of U.S. GDP, decreased at an annualized rate of 7.6% in the first quarter, the steepest drop since the second quarter of 1980. It is worth noting that shelter-in-place policies weren’t put into place until the last few weeks of March. Contributing to the decline in GDP was a deterioration in the labor market. The number of initial jobless claims increased by over 30 million since March 13, while U.S. continuing jobless claims were over 22 million as of April 25, up from under 2 million on March 13. The jobs most immediately at risk are in sectors which suffered most from COVID-19, including accommodation, food services, retail, and manufacturing.

April 2020 Returns | Sorted by April Performance

<table>
<thead>
<tr>
<th></th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>YTD 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLO BBB</td>
<td>1.93%</td>
<td>-0.39%</td>
<td>-21.04%</td>
<td>5.99%</td>
<td>-15.03%</td>
</tr>
<tr>
<td>U.S. Investment Grade Credit</td>
<td>2.34%</td>
<td>1.36%</td>
<td>-6.63%</td>
<td>4.58%</td>
<td>1.29%</td>
</tr>
<tr>
<td>U.S. High Yield Credit</td>
<td>0.03%</td>
<td>-1.41%</td>
<td>-11.46%</td>
<td>4.51%</td>
<td>-8.75%</td>
</tr>
<tr>
<td>Bank Loans</td>
<td>0.56%</td>
<td>-1.34%</td>
<td>-12.36%</td>
<td>4.50%</td>
<td>-9.13%</td>
</tr>
<tr>
<td>Emerging Markets Sovereign (USD)</td>
<td>1.52%</td>
<td>-0.97%</td>
<td>-13.85%</td>
<td>2.25%</td>
<td>-11.44%</td>
</tr>
<tr>
<td>U.S. Aggregate</td>
<td>1.92%</td>
<td>1.80%</td>
<td>-0.59%</td>
<td>1.78%</td>
<td>4.98%</td>
</tr>
<tr>
<td>CLO AAA</td>
<td>0.50%</td>
<td>0.15%</td>
<td>-5.00%</td>
<td>1.73%</td>
<td>-2.72%</td>
</tr>
<tr>
<td>U.S. ABS</td>
<td>1.00%</td>
<td>0.89%</td>
<td>-2.07%</td>
<td>1.34%</td>
<td>1.12%</td>
</tr>
<tr>
<td>U.S. CMBS</td>
<td>2.49%</td>
<td>1.91%</td>
<td>-3.13%</td>
<td>1.23%</td>
<td>2.42%</td>
</tr>
<tr>
<td>U.S. Treasury</td>
<td>2.44%</td>
<td>2.65%</td>
<td>2.89%</td>
<td>0.64%</td>
<td>8.89%</td>
</tr>
<tr>
<td>U.S. MBS</td>
<td>0.70%</td>
<td>1.04%</td>
<td>1.06%</td>
<td>0.63%</td>
<td>3.47%</td>
</tr>
<tr>
<td>U.S. CMBS BBB</td>
<td>2.78%</td>
<td>1.67%</td>
<td>-18.72%</td>
<td>-5.80%</td>
<td>-19.99%</td>
</tr>
</tbody>
</table>

Figure 1
Source: Bloomberg. Please see the Definitions page for the underlying indices used in this table.

1 Centers for Disease Control and Prevention. Coronavirus Disease 2019 (COVID-19) - Cases in the U.S. (cdc.gov)
On April 9, the Fed announced that it was increasing the Primary Market Corporate Credit Facility (PMCCF) to $500 billion and the Secondary Market Corporate Credit Facility (SMCCF) to $250 billion, from a previously announced potential $100 billion per facility. In addition, in order to support segments of the U.S. below investment grade corporate debt markets, the Fed declared eligible for purchase certain securities rated investment grade before March 23, and subsequently downgraded. The announcement further improved investor sentiment in U.S. corporate credit markets. Investment grade new issuance activity continued its upward trend with a record $285 billion in April, surpassing the prior record of $262 billion in March 2020. The high yield new issuance market, which was all but frozen in March, reemerged in April with companies issuing $36.7 billion of debt after issuing only $4.2 billion in the prior month.

During his April 29 press conference, Fed Chairman Jerome Powell repeatedly referred to the Fed Funds Target Rate as being at its “effective lower bound.” We believe this signals that the Federal Open Market Committee (FOMC) is averse to negative interest rate policies which were adopted by its counterparts at the European Central Bank and the Bank of Japan. The Fed’s preferred course of action has been to expand its balance sheet at a record pace to over $6.65 trillion as of April 29, well above both the $4.52 trillion peak hit in mid-May 2016 and the $4.12 trillion as of year-end 2019. (Figure 2)

Although a number of U.S. governors seem poised to re-open their state’s economies, little evidence suggests that the U.S. economy will recover quickly to pre-COVID-19 levels. The economy could worsen with most of the negative impact occurring in the second quarter of 2020.

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**Fed Balance Sheet and Six-Month Change** | April 7, 2010 through April 29, 2020

![Fed Balance Sheet and Six-Month Change](Figure 2)

Source: Bloomberg, DoubleLine

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U.S. Government Securities

The Bloomberg Barclays US Treasury Index gained 0.64% in April, extending its YTD gain to 8.89%.

The Treasury market calmed in April after a tumultuous March. The aggressive Federal Reserve intervention program launched in March -- buying Treasuries at a rate of $75 billion per day and offering unlimited repo financing -- improved market function steadily through April. Interest rate volatility subsided, market depth improved, bid-offer spreads compressed, and the yield premium of the on-the-run Treasuries versus seasoned issues fell dramatically. Market function was near normal by the end of April. Fed buying tapered gradually through the month, ending at about $10 billion per day. This reduced purchase rate was still higher than in any previous episodes of quantitative easing (QE).

The 10-year Treasury yield swung wildly in March. As investors shifted from safe-haven buying to forced liquidation, the yield ranged from an all-time intra-day low of 0.31% to a high of 1.27%. That 96 basis point range fell to 22 basis points (bps) through the first half of April and just then to 12 bps in the second half of the month. Interest rates and the yield curve were largely unchanged on the month. The 10-year Treasury yield ended the month at 0.64%

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U.S. Treasury Yield Curve

<table>
<thead>
<tr>
<th></th>
<th>3/31/20</th>
<th>4/30/2020</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 month</td>
<td>0.06%</td>
<td>0.08%</td>
<td>0.02%</td>
</tr>
<tr>
<td>6 month</td>
<td>0.14%</td>
<td>0.10%</td>
<td>-0.04%</td>
</tr>
<tr>
<td>1 year</td>
<td>0.15%</td>
<td>0.14%</td>
<td>-0.01%</td>
</tr>
<tr>
<td>2 year</td>
<td>0.25%</td>
<td>0.20%</td>
<td>-0.05%</td>
</tr>
<tr>
<td>3 year</td>
<td>0.29%</td>
<td>0.24%</td>
<td>-0.05%</td>
</tr>
<tr>
<td>5 year</td>
<td>0.38%</td>
<td>0.36%</td>
<td>-0.02%</td>
</tr>
<tr>
<td>10 year</td>
<td>0.67%</td>
<td>0.64%</td>
<td>-0.03%</td>
</tr>
<tr>
<td>30 year</td>
<td>1.32%</td>
<td>1.28%</td>
<td>-0.04%</td>
</tr>
</tbody>
</table>

Source: Bloomberg

Agency Mortgage-Backed Securities

Prepayment speeds picked up in April with 30-year Fannie Mae preps increasing 27% to 31 Constant Prepayment Rate (CPR), 30-year Freddie Mac preps increasing 26% to 31 CPR, and 30-year Ginnie Mae II preps increasing 7% to 28 CPR. The increase in prepayment speeds was primarily due to continued low mortgage rates and elevated refinance activity.

During the period, the U.S. Treasury yield curve was relatively flat with 2-year yields falling 5 basis points (bps) and 10-year yields falling by 3 bps. Although fears around the economic impact of the COVID-19 pandemic continued, volatility decreased as the market began to stabilize and the pace of fund outflows decelerated.

Gross issuance of Agency MBS significantly increased by $76 billion to $237 billion and net issuance increased by $40 billion to $33 billion. The Federal Reserve continues to purchase To Be Announced (TBA)-eligible Pools with gross Agency MBS purchases totaling $586 billion as of April 30.

The MBA US Refinancing Index (seasonally adjusted) decreased over the month, but activity remains elevated at levels much higher than 2019’s peak activity.

The Bloomberg Barclays US MBS Index total return was 0.64% with an excess return, measured relative to maturity-matched Treasuries, of 0.48%.

The duration of the Bloomberg Barclays US MBS Index contracted from 1.67 to 1.28 over the month.
Agency Mortgage-Backed Securities (cont’d)

MBA U.S. Refinancing Index | As of April 24, 2020

MBA Purchase Index | As of April 24, 2020

Freddie Mac Commitment Rate - 30 Year | April 30, 2020

Duration of Barclays U.S. MBS Bond Index | As of April 30, 2020

Conditional Prepayment Rates (CPR)

<table>
<thead>
<tr>
<th></th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
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</thead>
<tbody>
<tr>
<td>Fannie Mae (FNMA)</td>
<td>13.0</td>
<td>12.6</td>
<td>15.9</td>
<td>16.8</td>
<td>18.4</td>
<td>20.2</td>
<td>16.5</td>
<td>16.5</td>
<td>14.5</td>
<td>16.1</td>
<td>22.3</td>
<td>28.0</td>
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<tr>
<td>Ginnie Mae (GNMA)</td>
<td>16.9</td>
<td>17.1</td>
<td>20.9</td>
<td>22.3</td>
<td>22.8</td>
<td>24.4</td>
<td>22</td>
<td>22.9</td>
<td>21.3</td>
<td>21.3</td>
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<td>26.2</td>
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<tr>
<td>Freddie Mac (FHLMC)</td>
<td>13.4</td>
<td>12.6</td>
<td>16.2</td>
<td>17.2</td>
<td>19.1</td>
<td>20.6</td>
<td>16.7</td>
<td>16.6</td>
<td>14.6</td>
<td>16.4</td>
<td>23.0</td>
<td>28.8</td>
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Bloomberg Barclays U.S. MBS Index

<table>
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<th></th>
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<tr>
<td>105.49</td>
<td>106.42</td>
<td>106.95</td>
<td>0.53</td>
<td></td>
</tr>
</tbody>
</table>

Duration

| 2.17 | 1.67 | 1.28 | -0.39 |

Source: Bloomberg, DoubleLine

Source: Bloomberg, Base = 100 on 3/16/1990. Seasonally Adjusted.

Conditional Prepayment Rates (CPR)

<table>
<thead>
<tr>
<th>2019-2020 May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
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<td>19.1</td>
<td>20.6</td>
<td>16.7</td>
<td>16.6</td>
<td>14.6</td>
<td>16.4</td>
<td>23.0</td>
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</table>

Bloomberg Barclays U.S. Index Returns

<table>
<thead>
<tr>
<th>Average Dollar Price</th>
<th>2/28/2020</th>
<th>3/31/2020</th>
<th>4/30/2020</th>
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</thead>
<tbody>
<tr>
<td>1.80%</td>
<td>-0.59%</td>
<td>1.78%</td>
<td></td>
</tr>
</tbody>
</table>

MBS

| 1.04% | 1.06% | 0.64% |

Corporate

| 1.34% | -7.09% | 5.24% |

Treasury

| 2.65% | 2.89% | 0.64% |

Source: eMBS, Barclays Capital.
FHLMC Commitment Rate Source: Bloomberg
Non-Agency Residential Mortgage-Backed Securities

Non-Agency RMBS delivered positive returns in April despite an expected sharp decline in economic activity. Credit spreads tightened notably in sympathy with broader risk markets as heavy selling pressure eased. Voluntary prepayment expectations have either remained unchanged from current speeds or decreased as a result of foreseen economic hardship and social distancing. Although non-Agency RMBS was not included in the Term Asset-Backed Securities Loan Facility (TALF), efforts are being made in Congress to push the Federal Reserve to incorporate non-Agency RMBS into the program. The Federal Reserve established a Primary Dealer Credit Facility (PDCF), which allows primary dealers to post investment grade non-Agency RMBS as collateral for 90-day loans.

Issuance for the sector was lackluster, with one reverse mortgage deal pricing for approximately $325 million. Current cumulative net issuance YTD for 2020 is now similar to this time in 2019. Estimates for new issuance have been lowered by roughly 50%, largely as a result of non-Qualified Mortgage (non-QM) production being halted. This should provide further support for mortgage spreads to tighten.

The most recent reading of home prices for February showed an increase of 3.47% year over year. This represented an increase of 37 basis points (bps) from January and reached its highest level since January 2019. Existing home sales for March decreased 8.5% from the prior month. Despite the strong decline, sales are up 0.8% YoY. In April, many listings have been postponed or removed from the market as a result of the COVID-19 pandemic. However, home showings have increased from their lows. This has been partly as a result of virtual showings as well as some states claiming real estate agents as essential services.

The 30-year mortgage rate finished April at 3.23%, down 27 bps from the prior month. The drop in mortgage rates is a positive sign, indicating mortgage originators are managing to work through backlogs built before the COVID-19 pandemic. The MBA Purchase Index is down 20% from a year ago, but the index fell off its lows of -35% from a year ago within the month. Servicer call abandonment rates have also decreased from their peaks, showing further positive momentum in the mortgage origination market – albeit from a low level.

Commercial Mortgage-Backed Securities

New issue private-label CMBS was subdued throughout April with one conduit deal totaling $271 million pricing. While issuance was muted, several conduits and one office Single Asset Single Borrower (SASB) transaction, all with loans originated pre-COVID-19, were in various stages of marketing toward the end of the month and receiving positive investor feedback. Issuers highlighted the removal of all lodging and retail loans and the limited modification and/or forbearance requests from borrowers as a way to emphasize the higher credit quality. Given the slowdown in new issuance, the outstanding private-label CMBS universe decreased by 0.3% to $580.0 billion in April and now stands approximately 11.8% above the same period in 2019.

The U.S. National All-Property Index posted a 74 bps increase in March. It is now up 7.23% YoY and in line with recent increases. While transaction volume grew for the quarter, the majority of this was front loaded with March accounting for less than 25% of activity. Many believe this was due to sellers still remembering where prices were a few months ago, while buyers were looking at a very different world and expecting to see significant discounts. As a result, nothing happened. Price discovery is likely to emerge as sellers adjust their expectations to those of buyers amid sustained volatility and limited financing options. The apartment sector posted the highest gain in March, 96 bps, increasing to 11.03% YoY and outperforming industrial on a YoY basis for the third time since 2018. Industrial prices rose 64 bps in March, gaining 8.9% YoY, the second dip below double-digit price growth in less than a year.

CMBS secondary market cash spreads were mixed in April with AAA Last Cash Flows (LCFs) tightening by 30 bps to swaps+155, a result of TALF’s inclusion of legacy AAA Conduit CMBS, while BBB-s widening by 36bps to swaps+971. While conduit LCF’s through single As reverted to trading on a spread context, a result of increased liquidity and transparency, BBB-s were still trading on dollar price, with 30+ points of dispersion between higher- and lower-quality credits. While on-the-run BBB-s widened marginally, higher-quality names still saw demand from end accounts. Many dealers opted to sell risk throughout the month and moved away from deploying balance sheet capital as spreads moved tighter.

According to Fitch and DBRS Morningstar, nearly 7,000 loans totaling $149 billion, approximately 26% of the CMBS universe, have inquired about payment issues or have requested payment relief since the COVID-19 outbreak, with about 70% of all requests coming from retail and hospitality. With this, approximately 1.6% of both conduit and SASB loans are within their grace periods for April payments.

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3 Bloomberg  
4 S&P Corelogic Case-Shiller 20-City Home Price Composite  
5 National Association of Realtors Existing Home Sale Index  
6 Freddie Mac Primary Mortgage Market Survey  
7 Mortgage Bankers Association Weekly Applications Survey
Commercial Mortgage-Backed Securities (cont’d)
This number is expected to increase and trickle into the 30+ delinquent bucket. Overall delinquency in the commercial real estate (CRE) market increased by 22 bps to 2.29%, with hospitality experiencing the largest monthly increase of 118 bps to 2.71%. The CMBX market similarly saw a repricing of risk yet again, with AAA 2012-16 reference indices tightening by an average of 23 bps and BBBs widening by an average of 139 bps.

Asset-Backed Securities
ABS performance was sharply negative in March. The ABS sector rebounded in April as markets stabilized and the various federal stimulus programs continued to flow through the economy. The most liquid segments of ABS, as measured by the Bloomberg Barclays US ABS Index, returned 1.34% while esoteric ABS, measured by the ICE BofA US Fixed Rate Miscellaneous ABS Index, returned 2.37%. Generic spreads on the latter index rallied about 90 basis points during April, closing out the month at a spread of 425 basis points (bps) over U.S. Treasuries.

Within the esoteric cohort of the ABS market, several sectors which had experienced heavy selling pressure during March staged strong rallies in April. Aircraft ABS, whole business securitizations, and solar-related ABS were among the top performers as liquidity conditions improved and prices rallied more than 10 points in some instances.

Primary market issuance resumed for ABS during April, with 11 deals pricing in the second half of the month for about $9.5 billion in new issuance. Despite the still palpable uncertainty in the markets for credit spread products, subscription levels for these transactions were healthy. YTD gross issuance for ABS totaled $60 billion as of April 30.

Two sectors which lagged broad ABS performance were unsecured consumer loans and small business loans. Both these sectors are especially sensitive to unemployment levels and are acutely impacted by the various state-mandated “stay-at-home” programs.

Investment Grade Credit
Credit spreads bounced back strongly in April on the heels of unprecedented amounts of liquidity support being provided to the financial markets. April was one of the strongest months for investment grade credit spreads since May 2009. Investment grade credit spreads as measured by the Bloomberg Barclays Credit Index tightened by 64 basis points (bps) to 191 bps for the month, outperforming duration-match Treasuries by 391 bps.

The best-performing sectors for the month on a total return basis were independent energy, refining, midstream, natural gas, and utility (other). The worst performing sectors on a total return basis were airlines, sovereigns, supranationals, packaging and foreign local governments.

At the ratings level, lower-rated segments outperformed. BBs posted a total return of 5.93% vs 4.35% for single-As, and a total return of 2.50% for double-As.

Additionally, across the curve, long duration credit outperformed with a total return of 6.69% versus 3.44% for intermediate duration and 1.78% for short duration credits.

Dollar-denominated investment grade new issuance hit another monthly record with $362.4 billion of gross issuance and $301.6 billion of net issuance. For the first four months of this year we are already at $903.7 billion of gross new supply. This is up 86% YoY from $485.5 billion during the first four months of 2019. Industrials led the way this month with $199.7 billion in gross issuance and $185 billion in net issuance.

After net outflows in March, investment grade funds gathered net inflows of $18 billion in April.

Performance of Select Barclays Indices
Last 12 Months

| Source: Barclays Live |

Total Fixed-Rate Investment Grade Supply
As of April 30, 2020
Collateralized Loan Obligations

U.S. CLO issuance rose marginally in April with 10 deals pricing for a total of $3.8bn. Shorter reinvestment deals and static deals continued to be the predominant structures. Since the start of the year, $21 billion has priced by way of 44 CLOs, representing a 53% decline in primary issuance from this time last year. Refinancing activity was nonexistent in April, but YTD refi/reset totals remain elevated due to the surge in February.

While secondary activity declined 48% from March’s post-crisis record, April’s supply of $4.3 billion Bids Wanted in Competition (BWIC) was well above the historical monthly average. CLO fundamentals declined further in April, following continued negative rating actions and defaults surrounding COVID-19-impacted corporations. “Transportation: Consumer” and “Energy: Oil & Gas” have been two of the hardest-hit industries thus far. “Transportation: Consumer” represents 2% of U.S. CLO industry exposure; “Energy: Oil & Gas” represents 3%. In addition, the “Hotels, Gaming & Leisure” sector is an ongoing concern given that over 5% of U.S. CLO holdings on average are concentrated in this industry.

Market value-based metrics showed some improvement in April, as the loan market inched higher and loan fund outflows decelerated.

CLO New Issuance | September 2012 to March 2020

CLO spreads tightened across the capital stack from their levels in late March. Investment grade tranches led the tightening as underlying loan prices moved higher, while lower-rated mezzanine tranches lagged due to mounting downgrade and default fears.

The JP Morgan CLO Total Return Level Index rose 2.22% during the month of April, bringing the year-to-date return to -5.87%.

Bank Loans

After the steep sell-off in March ended with a return of -12.37% for the month, the bank loan market bounced back smartly in April with a 4.50% return, its best month since July 2009. The average bid price of the market ended April at 86.11, up from 82.85 at the end of March. The market reached its nadir on March 23, bottoming at 76.23, but has since clawed back about half its losses. Despite the rebound, index price and spread levels are still at the lowest levels since the Global Financial Crisis.

The sharp outperformance of BB loans in March partially reversed in April, as single-B returns of 4.99% outpaced BB returns of 4.12%. CCC loans continued to lag but were still up 4.00%. The market has experienced a record number of downgrades to single-B and CCC, taking BB-loans to their lowest share of the market since 2014.

The top-performing sectors were Oil & Gas and Chemicals & Plastics, which were up 9.10% and 7.46%, respectively. The worst performing sector was Beverage & Tobacco, down 1.37%.

On the demand side, collateralized loan obligations (CLOs) priced $3.6 billion of new vehicles in April while retail outflows continued apace, totaling an estimated $3.4 billion per S&P LCD. On the supply side, the new issue market remained largely moribund in April as borrowers opted instead to raise secured bonds in the high yield market.

The trailing 12-month default rate stepped up to 2.71% from 2.02% the prior month and is sure to rise further given the dire economic backdrop.

The aggressive government intervention that calmed risk markets also exerted downward pressure on LIBOR. Three-month LIBOR started April at 1.45% and ended the month at 0.56%, a significant reduction that will directly impact bank loan interest income.

We remain somewhat cautious on the asset class in the near term given significant weakness in the economy, but bank loans remain at historically cheap levels, and we are more constructive on the longer term outlook.
High Yield

High yield corporate bonds rebounded somewhat in April, with the Bloomberg Barclays U.S. High Yield Corporate Index returning 4.51% for the month (-8.75% YTD). The Index yield fell 139 basis points (bps) to 8.05% (+286 bps YTD) while spread tightened 136 bps to 744 bps (+407 bps YTD). High yield benefitted from unprecedented monetary and fiscal policy responses to the COVID-19 pandemic and government-ordered population lockdowns.

By rating, BBs continued to outperform, rising 6.49% (-4.33% YTD). Bs followed, though well behind, increasing 3.20% (-10.19% YTD), and CCCs materially lagged with a return of 0.49% (-20.19% YTD). The three best-performing sectors in April were Independent (+27.60%), Midstream (+20.09%), and Refining (+11.95%). The worst sectors were Airlines (-20.38%), Transportation Services (-8.25%), and Aerospace/Defense (-2.95%).

The par-weighted 12-month default rate ended April at a 10-year high of 4.71%, up 208 bps from the start of the year and 342 bps from the year-ago level. The energy sector continued to account for the lion’s share of defaults, representing 39% of default volume over the last 12 months for a sector rate of 11.61%. The ex-energy default rate ended the month at 3.37%. For reference, current default rate levels compare to 2.63% at the end of 2019 and a 25-year average of 2.90%.

With the swift decline of economic activity and deterioration of many company outlooks, rating agency downgrades continued to far outpace upgrades, both within high yield and between investment grade and high yield. For April, the high yield upgrade/downgrade ratio stood at 0.2x with $187.1 billion of downgrades compared to just $37.0 billion of upgrades. This leaves the YTD ratio at 0.2x with downgrades totaling $463.7 billion compared to $92.1 billion of upgrades. The upgrade/downgrade ratio ended the month at 3.37%. For reference, current default rate levels compare to 2.63% at the end of 2019 and a 25-year average of 2.90%.

After high yield posted a revised third-worst monthly outflows on record of $11.9 billion in March, the asset class attracted record inflows of $13.9 billion in April. These figures bring the YTD total to outflows of just $1.5 billion, which compares to inflows of $18.7 billion in full-year 2019, according to Lipper, and outflows of $46.9 billion in full-year 2018.

Commodities

In April 2020, the broad commodity market declined by 9.68% on the S&P GSCI Index and 1.55% on the Bloomberg Commodity Index.

The energy sector was hard hit in April, declining 19.51% as oversupply in crude oil caused a dramatic price drop with WTI crude falling 40.69%.

Precious metals rallied 6.02% as fear in global markets drove both gold (+6.11%) and silver (4.83%) higher.

Given the slowdown in the global economy, industrial metals defied the trend, rising 0.94%, with bellwether copper up 4.55% while aluminum declined 3.10%.

The agriculture sector depreciated 4.80% in April with corn (-7.62%), wheat (-7.86%) and soybeans (-4.31%) all declining.

Emerging Markets Fixed Income

EM sovereign and corporate external bonds both posted positive performance in April 2020. The positive performance of external EM debt was driven primarily by credit spread tightening, with slightly lower Treasury yields and accrued interest also contributing to performance.

The J.P. Morgan EMBI Global Diversified Index credit spread tightened by 16 bps over the quarter and the J.P. Morgan CEMBI Broad Diversified Index credit spread tightened 58 bps. The Treasury yield curve steepened with 2-year Treasury yields lower by 5 bps and 10-year Treasury yields lower by 3 bps.

Performance across all regions was positive in the corporate index for the period, while Latin America was the only negative region in the sovereign index, as measured by the J.P. Morgan CEMBI Broad Diversified and the J.P. Morgan EMBI Global Diversified. Africa was the best-performing region in both indices, while Asia was the worst-performing region in the corporate index and Latin America was the worst-performing region in the sovereign index.
The corporate index outperformed the sovereign index over the period as corporate spreads tightened more than sovereign spreads, and corporates significantly outperformed their sovereign counterparts in Africa, Latin America and Europe. The high yield sub-index outperformed the investment grade sub-index in the corporate index, while the investment grade sub-index outperformed the high yield sub-index in the sovereign index over the period.

Risk appetite for 2020 will largely be driven by the effectiveness and impact of measures to contain the spread and severity of the COVID-19 outbreak. The pandemic will continue to impact global growth and continue to drive fiscal and monetary policy responses from developed and emerging market central banks and governments. A recovery in commodity prices from a rebound in demand or reduction in supply could also lead to an improvement in investor sentiment toward the sector.

J.P. Morgan Emerging Markets Bond Index Performance
May 31, 2019 to April 30, 2020

Source: J.P. Morgan

International Sovereign

Global government bonds, as measured by the FTSE World Government Bond Index, posted positive returns for April 2020. Positive performance was driven by falling global yields.

The dollar, as measured by the U.S. Dollar Index (DXY), traded sideways over the period. The Federal Reserve kept rates unchanged at near zero, expanded programs to support main street lending and municipal debt markets, and pledged to use its “full range of tools” to support the economy. Congress passed a new $484 billion economic rescue package as weekly jobless claims continued to rise through April. U.S. Treasury rates, as measured by the Treasury 10-year yield, moved slightly lower during the period given the deteriorating economic outlook.

The euro fell against the dollar and was the worst-performing G-10 currency over the period. The European Central Bank (ECB) kept its main policy rate unchanged and expanded its program of bank lending at record-low rates. ECB President Christine Lagarde pledged to use available monetary policy tools to support the economy, which she warned could contract by between 5% and 12% this year. European leaders agreed to a short-term $590 billion emergency financial package, but they continued to debate how to finance a longer-term recovery plan. Tensions continued to build between southern countries, which favor a joint fiscal response, and northern countries, which oppose it.

The Japanese yen appreciated slightly versus the dollar. Core Tokyo inflation went negative for the first time since 2017 while the Japanese government said it would cooperate with the Bank of Japan (BoJ) to ensure the country does not return to deflation. The BoJ expanded its monetary stimulus program by boosting its asset purchase program. In addition, the BoJ reiterated its commitment to buy an unlimited amount of government bonds to keep borrowing costs low. The government also increased its economic stimulus package to $1.1 trillion.

Emerging market currencies reached historically low levels versus the dollar. Emerging market countries continued to face multiple headwinds from COVID-19, a commodity price shock, and capital outflows. Investors are concerned many emerging market countries lack the fiscal and monetary space to offset the economic impact of the pandemic.
Infrastructure

Infrastructure debt generated strong positive returns during April, outperforming the Bloomberg Barclays US Aggregate Bond Index return of 1.78% and slightly lagging the Bloomberg Barclays US Corporate Bond Index return of 5.24%. Investment grade corporate debt continued to benefit from the Secondary Market Corporate Credit Facility (SMCCF) established by the Federal Reserve on March 23.

Nearly every subsector of the infrastructure space enjoyed positive performance, with unsecured corporate debt issued by electric and natural gas utility companies leading the way for the corporate segment and global transportation assets leading the way for the structured products segment. Global transportation assets and renewable energy ABS, which experienced sizeable price declines during March, found their footing during the second half of April as risk sentiment improved.

Debt issues backed by telecom companies, both in corporate and securitized form, were another bright spot for April performance. Broadly speaking, we believe these issuers have strong balance sheets and are poised to benefit from the “work-from-home” trends that could become more permanent in the aftermath of the COVID-19 outbreak.

U.S. Equities

April was the best month for the S&P 500 since 1987, with the index gaining 12.8%. This left the S&P 500 down 9.3% YTD, 13.7% off its all-time highs of February 2020, and a whopping 30.4% rebound from the COVID shutdown-induced low in March.

Growth stocks continued to outperform value in April, with the Russell 1000 Growth Index returning 14.8% and the Russell 1000 Value returning 11.2%. April’s returns brought the Russell 1000 Growth’s return nearly flat for 2020: the Index ended the month down only 1.4% YTD. The outperformance of the largest growth names, including the FANG stocks, is also reflected in the divergence between the capitalization-weighted S&P 500 Index, down 9.3% in 2020 as noted above, and the equal-weighted S&P 500, which had lost 16.1% year-to-date through April. Similarly, April’s gains still left the small-cap Russell 2000 down 21.1% year-to-date.

By the end of April, slightly more than half the companies of the S&P 500 had reported first quarter earnings. Even though the sudden shutdown of the economy occurred late in the quarter, according to consensus estimates compiled by FactSet, S&P500 earnings for the first quarter were expected to have fallen year-over-year by 17.8% with revenues falling 2.9%. At month end, consensus estimates for the second quarter were forecasting YoY declines in earnings of 36.7% and revenues of 9.5%. For the full year, the consensus forecasts 2020 earnings of 17.8% and revenues 2.9% below 2019 and negative year-over-year growth in every quarter.

Given April’s sharp rally in stocks, investors seem to be looking through these dismal 2020 fundamentals – or perhaps counting on the “Fed put” to cushion any downside. At this juncture, a crucial question for equity investors is the longer-term level of corporate earnings once the economy reopens. We believe the COVID-19 pandemic will have long-lasting effects on the economy, making it difficult for the companies of the S&P 500 to return to January 2020 earnings levels for some time.

Global Equities

In April, global equities delivered one of the best monthly performances, rebounding sharply from the fastest bear market in history. The Morgan Stanley Capital International All-Country World Index (MSCI ACWI) rose 10.78% during the month. U.S. equities had an outstanding performance with the S&P 500 up 12.82% and Nasdaq Composite up 15.49%. The Russell 2000 rose 13.74%; the Dow Jones Averages rose 11.22%.

In Europe, equities underperformed the broader market. The Eurostoxx 50 rose only 5.4% in April. Core European equities had mixed results with the DAX returning 9.32% and the French CAC 40 returning 4.07% in April. In the periphery, equities performed much worse with Italian stocks as measured by the FTSE Milano Indice di Borsa (FTSE MIB) up 3.82% and Spain’s IBEX rising 2.47%. UK equities performed in line with the rest of European markets with the FTSE 100 up 4.28%.

Asian equities underperformed slightly in April after some outperformance over the prior two months. Japanese equities, as measured by the Nikkei, were up 6.75% in April. As measured by the Shanghai Stock Exchange Composite Index Chinese equities rose 4.00%. Hong Kong’s Hang Seng Index rose 4.43%. South Korea’s KOSPI rose 11.03%; Taiwan’s TAIEX gained 13.26%.

Emerging market equities performed in line with the broader market, with MSCI EM Index returning 9.18% in April. Indian equities, as measured by MSCI India, were up 15.29% for the month. Brazil’s Ibovespa was up 10.25% while Chilean equities, as measured by MSCI Chile Index, rose 16.16%. Russian equities, as measured by MSCI Russia Index, rose 11.49%.
Definitions/Explanations

AUD - Australian Dollar

ADP Research Institute – ADP generates data-driven discoveries about the world of work and derives economic indicators from these discoveries. Its two primary areas of focus are Labor Market trends, and issues related to People + Performance at work.

Bloomberg Agriculture Subindex - Formerly known as Dow Jones-UBS Agriculture Subindex (DJUBSAG), the index is a commodity group subindex of the Bloomberg CI. It is composed of future contracts on coffee, corn, cotton, soybeans, soybean oil, soybean meal, sugar and wheat. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

Basis Point - A basis point (bps) equals 0.01%.

Bloomberg Barclays U.S. Aggregate Bond Index - An index that represents securities that are SEC-registered, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities. These major sectors are subdivided into more specific indices that are calculated and reported on a regular basis.

Bloomberg Barclays U.S. Aggregate Credit Average OAS Index - The Option-Adjusted Spread calculated on the Bloomberg Barclays U.S. Aggregate Bond Index.

Bloomberg Barclays Asset-Backed Securities (ABS) Index - The ABS component of the U.S. Aggregate Index. It includes securities whose value and income payments are derived from and collateralized (“or backed”) by a specified pool of underlying assets including credit cards, auto loans, etc.

Bloomberg Barclays U.S. Corporate Bond Index - An index that represents the total return measure of the corporations portion of the Barclays U.S. Aggregate Index.

Bloomberg Barclays U.S. Credit Index – The U.S. Credit component of the U.S. Government/Credit Index. This index consists of publically-issued U.S. corporate and specified foreign debs and secured notes that meet the specified maturity, liquidity, and quality requirements. To qualify, bonds must be SEC-registered. The U.S. Credit Index is the same as the former U.S. Corporate Investment Grade Bond Index.

Bloomberg Barclays U.S. MBS Index - An index that measures the performance of investment grade fixed-rate mortgage-backed pass-through securities of the Government-Sponsored Enterprises (GSEs): Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

Bloomberg Barclays U.S. High Yield Corporate Index - An index that covers the universe of fixed rate, non-investment grade debt. Eurobonds and debt issuer from countries designated as emerging markets (e.g., Argentina, Brazil, Venezuela, etc.) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included. Original issue zeros, step-up coupon structures, 144-As and pay-in-kind (PIK, as of October 1, 2009) are also included.

Bloomberg Barclays U.S. Treasury Total Return Unhedged USD Index - Measures U.S. dollar-denominated, fixed-rate, nominal debt issued by the U.S. Treasury. Treasury bills are excluded by the maturity constraint, but are part of a separate Short Treasury Index.

Bloomberg Barclays U.S. Treasury Index - The index is the U.S. Treasury component of the U.S. Government Index. Public obligations of the U.S. Treasury with a remaining maturity of one year or more.

Bloomberg Commodity Index (BCOM) - An index calculated on an excess return basis that reflects commodity futures price movements. The index rebalances annually weighted 2/3 by trading volume and 1/3 by world production and weight-caps are applied at the commodity, sector and group level for diversification. Roll period typically occurs from 6th-10th business day based on the roll schedule.

Bid Wanted In Competition (BWIC) - A situation where an institutional investor submits its bond bid list to various securities dealers. Dealers are then allowed to make bids on the listed securities. The dealers with the highest bids are subsequently contacted.

Broadly Syndicated Loans (BSL) - Any Loan to an Obligor issued as part of a loan facility with an original loan size (including any first and second lien loans included in the facility) greater than $250,000,000.

CBOE Volatility Index (VIX) - A popular measure of the stock market’s expectation of volatility implied by S&P 500 Index options, calculated and published by the Chicago Board Options Exchange (CBOE).

Collateralized Loan Obligation (CLO) - A single security backed by a pool of debt.

CMBX Index - The CMBX is an index, or more accurately a series of indices, designed to reflect the creditworhiness of commercial mortgage-backed securities (CMBS).

Conference Board Leading Economic Index (LEI) - Phenomena, such as the unemploy- ment and new construction rates, used by The Conference Board to predict the financial condition of a particular industry or the economy in general.

Conference Board Consumer Confidence Index (CCI) - Measures how optimistic or pessi- mistic consumers are with respect to the economy in the near future. The index is based on the concept that if consumers are optimistic, they tend to purchase more goods and services. This increase in spending inevitably stimulates the whole economy.

Conference Board Measure of CEO Confidence - A survey of approximately 100 CEOs in a wide variety of industries that details Chief Executive’s attitudes and expectations regarding the overall state of the economy as well as their own industry.

Consumer Price Index (CPI) - A measure that examines the weighted average of prices of a basket of consumer goods and services, such as transportation, food and medical care. It is calculated by taking price changes for each item in the predetermined basket of goods and averaging them. Changes in the CPI are used to assess price changes associated with the cost of living; the CPI is one of the most frequently used statistics for identifying periods of inflation or deflation.

Cotation Assistee en Continu (CAC) - A French stock market index that tracks the 40 larg- est French stocks based on the Euronext Paris market capitalization.

Credit Default Swap Index (CDX) - Formerly the Dow Jones CDX, this is a financial instru- ment made up of credit securities that have been issued by North American or emerging markets companies. The CDX is itself a tradable security – a credit market derivative.

Deutscher Aktien Index (DAX) - A blue chip stock market index consisting of the 30 major German companies trading on the Frankfurt Stock Exchange.

Dot Plot - A simple statistical chart that consists of data points plotted as dots on a graph with x- and y-axes. Dot plots are well known as the method that the U.S. Federal Reserve (Fed) uses to convey its benchmark Federal Funds interest rate outlook at certain Federal Open Market Committee (FOMC) meetings.

Dow Jones Industrial Average (DJIA) - An index that tracks 30 large, publicly-owned com- panies trading on the New York Stock Exchange (NYSE) and the NASDAQ.

EUR - Euro

EUR/USD - The Currency Pair EUR/USD is the shortened term for the euro and U.S. dollar pair or cross for the currencies of the European Union (EU) and the United States (USD). The currency pair indicates how many U.S. dollars (the quote currency) are needed to purchase one euro (the base currency).

EuroStoxx 50 Index - A stock index of Eurozone stocks designed by STOXX, an index provid- er owned by Deutsche Borse Group and SIX group, with the goal of providing a blue-chip representation of Supersector leaders in the Eurozone.

FactSet - Provides computer-based financial data and analysis for financial professionals, including investment managers, hedge funds and investment bankers. It consolidates data on global markets, public and private companies, and equity and fixed-income portfolios.

Federal Family Education Loan Program (FFELP) - A system of private student loans which were subsidized and guaranteed by the United States federal government.

Financial Times Stock Exchange Milan Italia Borsa (FTSE MIB) - The benchmark stock market index for the Borsa Italiana, the Italian national stock exchange, which superseded the MIB-30 in September 2004. The index consists of the 40 most-traded stock classes on the exchange.

Financial Times Stock Exchange 100 (FTSE 100) - A capitalization-weighted index of the 100 most highly capitalized companies traded on the London Stock Exchange.

The Financial Times Stock Exchange World Government Bond Index (FTSE WGBI) - Mea- sures the performance of fixed-rate, local currency, investment-grade sovereign bonds. The WGBI is a widely used benchmark that currently includes sovereign debt from over 20 countries, denominated in a variety of currencies, and has more than 30 years of history available. The WGBI provides a broad benchmark for the global sovereign fixed income market. Sub-indices are available in any combination of currency, maturity, or rating.
G-10 (Group of 10) - The G10 consists of eleven industrialized nations that meet on an annual basis or more frequently, as necessary, to consult each other, debate and cooperate on international financial matters. The member countries are: Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, the United Kingdom and the United States.

FTSEMIB - The benchmark stock market index for the Borsa Italiana, the Italian national stock exchange, which superseded the MIB-30 in September 2004. The index consists of the 40 most-traded stock classes on the exchange.

GBP - British Pound

Gilt - Bonds issued by the U.K., India, and other Commonwealth countries.

Ginnie Mae (GNMA) - Ginnie Mae I is composed of mortgages that pay principal and interest on the fifteenth of every month, while the Ginnie Mae II does the same on the twentieth of every month. Another difference between the two pools is the maturity, with Ginnie Mae I having a maximum of 30 years for single-family and 40 years for multifamily, whereas Ginnie Mae II is 30 years max as it doesn’t include multifamily project or construction loans.

Hang Seng Index - A free-float capitalization-weighted index of a selection of companies from the Stock Exchange of Hong Kong. The components of the index are divided into four subindices: Commerce and Industry, Finance, Utilities, and Properties.

Ibovespa Index - A gross return index weighted by traded volume and comprised of the most liquid stocks traded on the Sao Paulo Stock Exchange. The Ibovespa Index has been divided 10 times by a factor of 10 since January 1, 1985.

ICE BofA U.S. Fixed Rate Stable Maturity Index - A subset of ICE BofA U.S. Fixed Rate Stable Maturity Index including all asset-backed securities collateralized by anything other than auto loans, home equity loans, manufactured housing, credit card receivables and utility assets.

IHS Market Eurozone Manufacturing Purchasing Managers’ Index - A measure of the performance of the manufacturing sector derived from a survey of 3,000 manufacturing firms and including national data for Germany, France, Italy, Spain, the Netherlands, Austria, the Republic of Ireland, and Greece. The index is based on five individual indexes: New Orders (30%), Output (25%), Employment (20%), Suppliers’ Delivery Times (15%), and Stock of Items Purchased (10%), with the Delivery Times index inverted to move in a comparable direction. A reading of above 50 indicates an expansion of the sector, while a reading below 50 represents a contraction and 50 indicates no change.

The IHS Markit/CIPS UK Manufacturing PMI® - Based on data compiled from monthly replies to questionnaires sent to purchasing executives in over 600 industrial companies. It is a composite index based on five of the individual indexes with the following weights: New Orders - 0.3, Output - 0.25, Employment - 0.2, Suppliers’ Delivery Times - 0.15, Stock of Items Purchased - 0.1, with the Delivery Times Index inverted so that it moves in a comparable direction.

Indice Bursatil Espanol (IBE) - The official index of the Spanish Continuous Market. The index is comprised of the 35 most liquid stocks traded on the Continuous Market. It is calculated, supervised and published by the Sociedad de Bolsas.

Institute for Supply Management (ISM) Purchasing Managers Index (PMI) - An indicator of the economic health of the manufacturing sector. The PMI is based on five major indicators: new orders, inventory levels, production, supplier deliveries and the employment environment.

ISM Non-Manufacturing Index (ISM NMI) - An index made up of data from 400 non-manufacturing firms collected by the Institute of Supply Management (ISM).

ISM New Orders Index - The Manufacturing ISM Report On Business is based on data compiled from monthly replies to questions asked of purchasing and supply executives in over 400 industrial companies. For each of the indicators measured (New Orders, Backlog of Orders, New Export Orders, Imports, Production, Supplier Deliveries, Inventories, Customers Inventories, Employment, and Prices), this report shows the percentage reporting each response, the net difference between the numbers of responses in the positive economic direction and the negative economic direction and the diffusion index. Responses are raw data and are never changed. The diffusion index includes the percent of positive responses plus one-half of those responding the same (considered positive). The resulting single index number is then seasonally adjusted to allow for the effects of repetitive intra-year variations resulting primarily from normal differences in weather conditions, various institutional arrangements, and differences attributable to non-moveable holidays. All seasonal adjustment factors are supplied by the U.S. Department of Commerce and are subject annually to relatively minor changes when conditions warrant them.

J.P. Morgan CLO TR Level Index - Holistically captures the USD-denominated CLO market, representing over 3000 instruments at a total par value of US $236.1 billion. It allows market participants to track securitized loan market valuations.

J.P. Morgan Corporate Emerging Markets Bond Broad Diversified Index (CEMBI) - This index is a market capitalization weighted index consisting of U.S.-denominated Emerging Market corporate bonds. It is a liquid global corporate benchmark representing Asia, Latin America, Europe and the Middle East/Africa.

J.P. Morgan Government Bond Emerging Markets Broad Diversified Index (GBI EM) - This index is the first comprehensive, global local Emerging Markets index, and consists of regularly traded, liquid fixed-rate, domestic currency government bonds to which international investors can gain exposure.

J.P. Morgan Emerging Markets Bond Global Diversified Index (EMBI) - This index is uniquely-weighted version of the EMBI Global. It limits the weights of those index countries with larger debt stocks by only including specified portions of these countries’ eligible current face amounts of debt outstanding. The countries covered in the EMBI Global Diversified are identical to those covered by EMBI Global.

JPY - Japanese Yen

Korea Composite Stock Price Index (KOSPI) - The index of all common stocks traded on the Stock Market Division of the Korea Exchange. It is the representative stock market index of South Korea, like the S&P 500 in the United States.

Last Cash Flow (LCF) - The last revenue stream paid to a bond over a given period.

Leveraged Commentary & Data (LCD) - A unit of S&P Global Market Intelligence, LCD provides in-depth coverage of the leveraged loan market through real-time news, analysis, commentary, and proprietary loan data.

LTM - Last Twelve Months

Major Markets - Major markets are defined by Real Capital Analytics as Boston, Chicago, Washington, D.C., Los Angeles, New York City and San Francisco. All markets outside of the Major Markets are Non-Major Markets.

Markit CMBX Index - A synthetic tradable index referencing a basket of 25 commercial mortgage-backed securities.

Mortgage Bankers Association (MBS) Refinancing Index - A weekly measurement that helps predict mortgage activity and loan prepayments based on the number of mortgage refinance applications submitted. When this index is seasonal adjusted, a statistical technique is used that attempts to measure and remove the influences of predictable seasonal patterns (weather, harvests, major holidays, school schedules, etc.) to make it easier to observe the cyclical, underlying trend, and other nonseasonal movements in the series.

Morgan Stanley Capital International All Country World Index (MSCI ACWI) - A market-capitalization-weighted index designed to provide a broad measure of stock performance throughout the world, including both developed and emerging markets.

Mortgage Bankers Association (MBA) Purchase Index - An index that includes all mortgage applications for purchases of single-family homes. It covers the entire market, both conventional and government loans and all products.

Mortgage Bankers Association (MBA) Refinance Index - An index that covers all mortgage applications to refinance an existing mortgage. It includes conventional and government refinances. SA indicates seasonally adjusted and NSA indicates non-seasonally adjusted.

MSCI Emerging Markets (MSCI EM) - An index that covers 24 Emerging Market countries and is designed to capture the large and mid-cap representation across those countries.

MSCI Russia Index - A free-float capitalization-weighted index used to track the equity market performance of Russian securities on the MICEX Stock Exchange.

NASDAQ Composite - A stock market index of the common stocks and similar securities (e.g. ADRs, tracking stocks, limited partnership interests) listed on the NASDAQ stock market with over 3,000 components. This index is highly followed in the U.S. as an indicator of the performance of stocks of technology companies and growth companies. Since both U.S. and non-U.S. companies are listed on the NASDAQ stock market, the index is not exclusively a U.S. index.

NASDAQ 100 Index - A basket of the 100 largest, most actively traded U.S. companies listed on the NASDAQ stock exchange.
NFIB Small Business Optimism Index - The small business optimism index is compiled from a survey that is conducted each month by the National Federation of Independent Business (NFIB) of its members. The index is a composite of 10 seasonally adjusted components based on the following questions: plans to increase employment, plans to make capital outlays, plans to increase inventories, expect economy to improve, expect real sales higher, current inventory, current job openings, expected credit conditions, now a good time to expand, and earnings trend.

Nikkei 225 Index - A price-weighted index comprised of Japan's top 225 blue-chip companies on the Tokyo Stock Exchange. The Nikkei is equivalent to the Dow Jones Industrial Average Index in the U.S.

On-the-Run Treasuries - The most recently issued U.S. Treasury bonds or notes of a particular maturity. “On-the-run” Treasuries are the opposite of “off-the-run” Treasuries, which refer to Treasury securities that have been issued before the most recent issue and are still outstanding.

Personal Consumption Expenditures (PCE) Core Price Index - Measures price changes in consumer goods and services. Expenditures included in the index are actual U.S. household expenditures. Data that pertains to services, durables and non-durables are measured by the index.

Qualified Mortgage (QM) - A qualified mortgage is a mortgage that meets certain requirements for lender protection and secondary market trading under the Dodd-Frank Wall Street Reform and Consumer Protection Act.

Russell 1000 Growth Index - An index that measures the performance of the large-cap growth segment of the U.S. equity universe. It includes those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

Russell 1000 Value Index - An index that measures the performance of the large-cap value segment of the U.S. equity universe. It includes those Russell 1000 companies with lower price-to-book ratios and lower expected growth values.

Russell 2000 Index - A subset of the Russell 3000 Index representing approximately 10% of the total market capitalization and measuring the performance of the small-cap segment of the U.S. equity universe.

S&P CoreLogic Case-Shiller National Home Price Index - An index that tracks the value of single-family housing within the United States. The index is a composite of single-family home price indices for the nine U.S. Census divisions.

S&P CoreLogic Case-Shiller 20-City Composite Home Price NSA Index - Seeks to measures the value of residential real estate in 20 major U.S. metropolitan areas: Atlanta, Boston, Charlotte, Chicago, Cleveland, Dallas, Denver, Detroit, Las Vegas, Los Angeles, Miami, Minneapolis, New York, Phoenix, Portland, San Diego, San Francisco, Seattle, Tampa and Washington, D.C.

S&P/LSTA Leveraged Loan Index - An index designed to track the market-weighted performance of institutional leveraged loans based on the market weightings, spreads and interest payments.

S&P/LSTA Leveraged Loan 100 Index - An index designed to track the market-weighted performance of the 100 largest institutional leveraged loans based on the market weightings, spreads and interest payments.

S&P Goldman Sachs Commodity Index (GSCI) - Standard & Poor’s Goldman Sachs Commodity Index, or GSCI, is a composite index of commodity sector returns which represents a broadly diversified, unleveraged, long-only position in commodity futures.

S&P 500 Index - Standard & Poor’s U.S. 500 Index, a capitalized-weighted index of 500 stocks.

S&P Global Market Intelligence - A provider of multi-asset class and real-time data, research, news and analysis to institutional investors, investment and commercial banks, investment advisors and wealth managers, corporations, and universities.

Secured Overnight Financing Rate (SOFR) - An influential interest rate that banks use to price U.S. dollar-denominated derivatives and loans. The daily SOFR is based on transactions in the Treasury repurchase market, where investors offer banks overnight loans backed by their bond assets.

Shanghai Composite Index - A capitalization-weighted index that tracks the daily performance of all A-shares and B-shares listed on the Shanghai Stock Exchange. The index was developed on December 19, 1990 with a base value of 100.

Spread - The difference between yields on differing debt instruments, calculated by deducting the yield of one instrument from another. The higher the yield spread, the greater the difference between the yields offered by each instrument. The spread can be measured between debt instruments of differing maturities, credit ratings and risk.

TAIEX Index - A stock market index for the companies traded on the Taiwan Stock Exchange. TAIEX covers all of the listed stocks excluding preferred stocks, full-delivery stocks and newly listed stocks, which are listed for less than one calendar month.

Trade Reporting and Compliance Engine (TRACE) - The Trade Reporting and Compliance Engine is the FINRA-developed vehicle that facilitates the mandatory reporting of over-the-counter secondary market transactions in eligible fixed income securities.

U-3 Unemployment Rate - The U.S. Bureau of Labor Statistics U-3 unemployment rate is the officially recognized rate of unemployment, measuring the number of unemployed people as a percentage of the labor force.

U.S. National All-Property Price Index – A transaction-based RCA Commercial Property Price Index (CPPI) that measures commercial real estate price movement using repeat-sales regression methodology. One of over 350 indices which provide direct comparability across markets and property types in 15 countries, this Index focuses on the United States.

U.S. Dollar Index (DXY) - A weighted geometric mean of the United States dollar’s value relative to a basket of 6 major foreign currencies, including the Euro, Japanese yen, Pound sterling, Canadian dollar, Swedish krona and Swiss franc.

U.S. Treasuries (UST) - Commonly used for references to the Treasury debt that the U.S. issues.

Uniform Mortgage-Backed Securities (UMBS) - Single-class securities backed by mortgage loans purchased by either Freddie Mac or Fannie Mae.

University of Michigan Consumer Sentiment Index - The Surveys of Consumers is a rotating panel survey based on a nationally representative sample that gives each household in the coterminus U.S. an equal probability of being selected. Interviews are conducted throughout the month by telephone. The minimum monthly change required for significance at the 95-percent level in the Sentiment Index is 4.8 points; for Current and Expectations Index the minimum is 6 points.

USD/JPY - The Currency Pair USD/JPY is the shortened term for the yen and U.S. dollar pair or cross for the currencies of Japan (JPY) and the United States (USD). The currency pair indicates how many Japanese yen (the quote currency) are needed to purchase one U.S. dollar (the base currency).

Weighted Average Cost of Capital (WACC) - The weighted average cost of capital (WACC) is a calculation of a firm’s cost of capital in which each category of capital is proportionate weighted. All sources of capital, including common stock, preferred stock, bonds, and any other long-term debt, are included in a WACC calculation.

WAL (Weighted Average Life) - The average number of years for which each dollar of unpaid principal on a loan or mortgage remains outstanding.

World Interest Rate Probabilities WIRP (WIRP) - Allows you to analyze the probabilities of various interest rate level outcomes as implied by the futures, options, and OIS markets, so you can quantify to what extent the markets are “pricing in” future central bank interest rate changes.

WTI - West Texas Intermediate Crude Oil Front Month Futures Contract

Z-Score - A numerical measurement used in statistics of a value’s relationship to the mean (average) of a group of values, measured in terms of standard deviations from the mean. If a Z-score is 0, it indicates that the data point’s score is identical to the mean score. A Z-score of 1.0 would indicate a value that is one standard deviation from the mean. Z-scores may be positive or negative, with a positive value indicating the score is above the mean and a negative score indicating it is below the mean.
Underlying Indices for Figure 1:
S&P/LSTA Leveraged Loan Total Return Index - SPBDAL Index
J.P. Morgan CLO AAA TR - JCLAAAP Index
J.P. Morgan CLO BBB TR - JCLBB8P Index
Bloomberg Barclays US Agg Total Return Value Unhedged USD - LBUSTRUII INDEX
Bloomberg Barclays US Treasury Total Return Unhedged USD - LUATSTRUII Index
Bloomberg Barclays US MBS Index Total Return Value Unhedged USD - LUMSTRUII Index
Bloomberg Barclays US Corporate Total Return Value Unhedged USD - LUACTRUII Index
Bloomberg Barclays US Corporate High Yield Total Return Index Value Unhedged USD - LF98TRUII Index
J.P. Morgan EMBI Global Diversified Index - JPRGCOMP Index
Bloomberg Barclays CMBS - LUCMTRUII Index
Bloomberg Barclays CM BS BBB - LC31TRUII Index
Bloomberg Barclays ABS - LUABTRUII Index

An investment cannot be made directly in an index.

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