Market Update
Q4 2019 Review and Outlook

Equity markets rallied in Q4, adding to strong gains for the full year. Growth continued to triumph over value and the US outperformed developed international equities. Fixed income delivered modest returns and the US Treasury yield curve steepened.

The Markets at a Glance

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Representative Benchmark</th>
<th>Q4 Return</th>
<th>YTD Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>US Large Cap</td>
<td>S&amp;P 500</td>
<td>9.1%</td>
<td>31.5%</td>
</tr>
<tr>
<td>US Small Cap</td>
<td>Russell 2000®</td>
<td>9.9%</td>
<td>25.5%</td>
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<tr>
<td>International</td>
<td>MSCI EAFE</td>
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<tr>
<td>Commodities</td>
<td>Bloomberg Commodity</td>
<td>4.4%</td>
<td>7.7%</td>
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<td>Municipal Bonds</td>
<td>BBgBarc. Municipal</td>
<td>0.7%</td>
<td>7.5%</td>
</tr>
<tr>
<td>Taxable Bonds</td>
<td>BBgBarc. Aggregate</td>
<td>0.2%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Cash</td>
<td>FTSE 3-Month T-Bills</td>
<td>0.5%</td>
<td>2.3%</td>
</tr>
</tbody>
</table>

Performance returns are as of 12/31/2019

Q4 Recap

Equity markets rallied in Q4 thanks to an improved economic picture, alleviated trade tensions, and a dovish Federal Reserve. The S&P 500 gained 9.1% during the quarter and ended the year with a return of 31.5%, the highest since 2013. The dominance of growth over value continued this quarter, and investors showed an increased appetite for risk by favoring small-cap over large-cap equities.

International equities also posted solid returns in Q4 as the US dollar weakened. The progress in trade negotiations sparked a resurgence in emerging markets (+11.8%), which outperformed even US stocks. For the full year, international growth outpaced value by over 11%, the largest calendar year deficit for value ever.

The broad US bond market, as measured by the Bloomberg Barclays US Agg Index, returned 0.2% in Q4 and 8.7% for the year. Long-term bonds pared back their lead slightly in Q4, but ended the year with a robust return of 19.6%. Additionally, the US Treasury Yield Curve steepened after the Fed’s third rate cut and is no longer inverted, therefore relieving recession fears for now. The 10-Year Treasury yield ended the year at 1.92%.
Financial markets delivered strong returns across all major asset classes in 2019. The S&P 500 Total Return Index was up 31.5% in for the year, the strongest annual return since 2013. The year began by rebounding from 4Q18’s selloff and ended with a prospective “Phase One” US/China trade deal and massive liquidity injections from the Federal Reserve.

Is the Market Rally Sustainable?

S&P 500 earnings increased from $161.45 in 2018 to $162.35 in 2019 (+0.6%), while the index’s trailing price-to-earnings multiple expanded from 15.5x to 19.9x (28.4%) according to FACTSET’s most recent estimates. Mr. Market was willing to pay more for the index despite an increase in geopolitical tensions, a slowdown in global growth, and flat corporate earnings. While these headwinds seemed insurmountable at times, the market was buffeted by easier monetary policy. Fed Chairman Powell began the year by emphasizing the Fed’s “patience” with respect to future federal funds rate hikes. By the end of Q1 the Fed indicated that it would stabilize its balance sheet runoff by the end of the year. This was followed by three cuts to the federal funds rate beginning in Q3 and a massive liquidity injection in Q4. We find it probable that the nearly half a trillion dollars that were injected into the financial system could have found their way into the financial markets, influencing the 9.1% advance in the S&P 500 Total Return Index recorded in Q4. The accompanying chart (see Figure 1) highlights the magnitude of the recent liquidity injection. Although the Fed guided that its repo operations would be temporary, current guidance indicates that they will be needed through April. We find it likely that the market will be able to overcome future headwinds as long as the Fed is willing to inject enough liquidity.

2020 Vision Remains Blurry

Geopolitical uncertainty receded in Q4 as progress was made on the long-awaited “Phase One” US/China trade deal and a sweeping snap election for UK conservatives in December suppressed concerns related to Brexit. However, 2020 Vision remains blurry. There is still a high degree of uncertainty as to what the “Phase One” trade deal will include; along with speculation regarding how negotiations will proceed for phases two, three and four. A source of uncertainty for investors in 2020 could be the US presidential election, but as Baird Market Strategist Michael Antonelli points out in his “2020 and Beyond” post, “markets care about policies, not politics.” Therefore, volatility could escalate if a presidential candidate proposed radical shifts in policy. We should note that equity performance has been favorable during election years, with the S&P 500 returning on average 11.5% since 1928. Additionally, tensions in the Middle East have already flared this year due to the US assassination of Iranian General Suleimani. The assassination remains a stark reminder that we are living in a world of unforeseeable and non-quantifiable risks. Finally, the path of domestic monetary policy has become uncertain. The Federal Reserve guided that the “Not QE” liquidity injection will come to an end by May. However, the market continues to discount a greater than 50% probability that the Fed will cut rates at least once this year.

The Sisyphean Task of Diversification

2019 saw domestic large cap growth equities continue to outperform every other asset class. As asset allocators we are beginning to feel a bit like Sisyphus, the Greek king condemned to push a large rock up a mountain only to find it roll down as he neared the summit. Each year we advocate allocating money to a diverse set of asset classes to generate superior risk-adjusted returns across a full market cycle, only to find large cap growth equities outperform. We would continue to caution investors who have found clarity by looking in the rearview mirror to have 2020 vision and to focus on risk management through diversification. Continue to participate in the decade-long bull market via an allocation to large cap growth equities, but a diversified approach is likely to deliver superior risk-adjusted returns over a full market cycle. As the Wall Street adage goes, “trees don’t grow to the sky”.

Figure 1: 12-Month Change in the US Fed Liquidity Index
Bolstered by an accommodative Federal Reserve, the easing of trade tensions, and a return of pro-risk cyclicality to markets, US stocks capped a historic year with an excellent fourth quarter. The S&P 500 was up 9.1% in Q4, closing 2019 up 31.5%, the second-best calendar year return in the last two decades. The quarter was marked by a return of cyclicality to the market, with Technology, Financials, and Communication Services among the best performing sectors for both the quarter and the year, while defensive bond proxies underperformed.

More of the Same for US Equities
US Large Cap Growth continued its reign as the top performing equity style with a meteoric 36.4% rise in 2019. Information Technology has been a significant driver of the markets. In 2019 alone, the tech sector returned a whopping 50%, driven by tech behemoths Apple (+89%) and Microsoft (+58%). In contrast, the worst performing sector for the second year in a row was Energy, which returned only 11.8% despite a 34% surge in the price of WTI Crude Oil.

Reviewing the past 1-, 3-, 5-, and 10-year trailing time periods, US large cap growth consistently dominates other categories (see page 4 of the Q4 2019 Rolling Returns Report). Although the past 10 years have been frustrating for value investors, keep in mind value outperformed growth during the multi-year period between the tech bubble and the 2008 financial crisis (see Figure 2).

Risk-On in International Equities
The improved global economic data and advancement in trade negotiations sparked a rally in international equities and a weakening of the dollar during the 4th quarter. Emerging markets rose 11.8%, outperforming the US (+9%) and developed international (+8.2%). Within EM, tech-heavy Taiwan rallied nearly 18% and Russia rallied 17% in Q4 and over 50% for the year as the central bank eased. India rose just 5% as the country faced economic and political turmoil. In developed markets, the UK rallied 10% on more certainty surrounding Brexit and Germany was up 10% on improved economic data. Growth also dominated value in international markets. This year in particular was historic in that value trailed growth by 11%, the widest deficit ever. For emerging markets, value trailed by 13%. Although international equity returns were strong this year, domestic equities were the winners once again. However, just like value, international equities were in vogue for several years in the 2000s (see Figure 3). Although market leadership can be sustained for long periods of time, all it takes is a market event for the market to rotate quickly to reward other asset classes.

Source: MorningstarDirect
Fixed Income Benchmarks

<table>
<thead>
<tr>
<th>Fixed Income</th>
<th>Representative Benchmark</th>
<th>Q4 Return</th>
<th>YTD Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taxable</td>
<td>BBgBarc. Aggregate</td>
<td>0.2%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Treasury</td>
<td>BBgBarc. Treasury</td>
<td>-0.8%</td>
<td>6.9%</td>
</tr>
<tr>
<td>Corporate</td>
<td>BBgBarc. Corporate</td>
<td>1.1%</td>
<td>14.5%</td>
</tr>
<tr>
<td>High Yield</td>
<td>ICE BofAML US HY</td>
<td>2.6%</td>
<td>14.4%</td>
</tr>
<tr>
<td>Municipal</td>
<td>BBgBarc. Municipal</td>
<td>0.7%</td>
<td>7.5%</td>
</tr>
<tr>
<td>Int’l</td>
<td>BBgBarc. Global Agg.</td>
<td>0.4%</td>
<td>6.8%</td>
</tr>
</tbody>
</table>

Performance returns as of 12/31/2019

Fixed Income at a Glance

The broad US bond market, as measured by the Bloomberg Barclays Agg Index, delivered 0.2% in Q4 as rates bounced off their Labor Day lows and credit continued to outperform. Following the Fed’s actions to calm markets with three rate cuts earlier this year, injections of additional liquidity measures served as an effective backstop for financial markets. During the quarter, investors saw the impact of easy monetary policy as global growth expectations and economic data bottomed and reversed course, increasing optimism and market sentiment. The improving economic and inflation picture lifted rates and steepened the US Treasury curve. Demand for US Treasuries waned, pushing the 10-Yr Treasury yield up to 1.92%. Concerns of an inverted yield curve were put to rest during the quarter as increased growth and inflation expectations lifted long dated interest rates.

Credit Delivers Strong Returns

Corporate debt delivered strong returns with investment grade corporate credit returning 14.5%, its best annual performance since 2009. Despite strong performance this past year, market participants questioned the sustainability of this strength with much of the growth in 2019 driven by strong demand. High yield corporates, emerging market debt, and leveraged loans outperformed in Q4 delivering 2.6%, 2.1%, and 1.7% respectively. Non-investment grade issuers rated CCC and lower reversed course in Q4, clawing back relative performance as speculative investors embraced tighter spreads and stronger fundamentals vs. expectations.

Municipals Outperform Taxable Debt

Municipal bonds returned 0.7% in Q4, outperforming taxable peers by 56bps. Strong technicals and encouraging fundamentals continued to support positive performance during the quarter. High yield municipal bonds was the best performing sector returning 0.9%, while Taxable Municipals suffered, returning -0.9% in Q4.

Mixed Securitized Performance in Q4

Securitized credit performance was mixed on the quarter. Supported by the interest rate sell off and a risk-on environment, residential mortgage-backed securities outperformed in Q4 returning 0.7%. Market conditions were broadly supportive of the ABS market this quarter. The strength of the US consumer supported auto loan and credit card receivable, while student loan-backed debt and commercial mortgage-backed securities lagged. Weaker underwriting along with increased issuance are weighing on CMBS performance. It is worth noting that delinquency rates for sub-prime auto lending have moved higher. Investors will watch to see if broad based delinquencies will continue on this path as we move into 2020.

Optimism on Global Recovery

Reduced recessionary fears and increased optimism around prospects for a “Phase 1” trade deal with China drove demand for riskier bonds. Global economic data appeared to hit a bottom while growth looks to be picking up abroad. Most developed central banks followed the Fed’s footsteps and continued loose monetary policy. As seen in Figure 5, roughly half of the world’s central banks are cutting rates. In addition to cutting interest rates, the Fed increased its balance sheet in Q4 to $4.2T, a level not seen since Oct. 2018. Supported by an expansion of global liquidity and increasing global growth expectations abroad, non-US fixed income markets delivered strong absolute returns for investors in Q4 as the Global Aggregate Index, Euro Universal and EM USD Aggregate returned 0.5%, 0.8%, and 2.1% respectively.
Benchmark and Asset Class Definitions

**S&P 500 Index (Large Cap / U.S. Stocks):** A representative sample of 500 leading companies in leading industries of the U.S. economy. These are equity securities of large capitalization (generally $7 billion plus market cap) companies having growth and value characteristics.

**Russell 3000® Growth Index (All Cap Growth / Growth Stocks):** Measures the performance of the 3,000 largest U.S. companies based on total market capitalization with higher price-to-book ratios and higher forecasted growth values.

**Russell 3000® Value Index (All Cap Value / Value Stocks):** Measures the performance of the 3,000 largest U.S. companies based on total market capitalization with lower price-to-book ratios and lower forecasted growth values.

**Russell 1000® Growth Index (Large Growth):** Measures the performance of those Russell 1000® Index companies with higher price-to-book ratios and higher forecasted growth values. These are equity securities of large capitalization ($7 billion plus market cap) companies having growth stock characteristics (high price to earnings, high return on equity and low dividend yield).

**Russell 1000® Value Index (Large Value):** Measures the performance of those Russell 1000® Index companies with lower price-to-book ratios and lower forecasted growth values. These are equity securities of large capitalization ($7 billion plus market cap) companies having value stock characteristics (low forecasted price-to-earnings ratio, low price-to-book ratio, high dividend yield).

**Russell Midcap® Index (Mid Cap / Mid Core):** Measures the performance of the 800 smallest companies of the Russell 1000® Index, which represent approximately 31% of the total market capitalization of the Russell 1000® Index. These are equity securities of middle capitalization ($2-7 billion plus market cap) companies having growth and value characteristics.

**Russell 2000® Index (Small Cap / Small Core):** Measures the performance of the 2,000 smallest companies in the Russell 3000® Index, which represent approximately 10% of the total market capitalization of the Russell 3000® Index. These are equity securities of small capitalization (<$2 billion plus market cap) companies having growth and value characteristics.

**Russell Micro Cap Index (Micro Cap):** Measures the performance of the 1,000 smallest companies in the Russell 2000® Index, which represent approximately 3% of the total market capitalization of the Russell 3000® Index.

**MSCI EAFE Index Net (International / Developed Markets):** A free float-adjusted market capitalization index that is designed to measure the equity market performance of developed markets, excluding the US & Canada. As of May 27, 2010 the MSCI EAFE Index consisted of the following 22 developed market country indices: Australia, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Israel, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, and the United Kingdom.

**FTSE 3-month T-bill Index (Cash):** This index measures monthly return equivalents of yield averages that are not marked to market. It consists of the last one-month and three-month Treasury bill issues, respectively.

**Bloomberg Commodity Index (Commodities):** Composed of commodities traded on U.S. exchanges, with the exception of aluminum, nickel and zinc, which trade on the London Metal Exchange (LME). Sub-indices include Petroleum, Grains, Industrial Metals, Livestock, Precious Metals, and Softs.

**MSCI Emerging Markets Index Net (Emerging Markets):** A free float-adjusted market capitalization index that is designed to measure equity market performance of emerging markets. As of May 27, 2010 the MSCI Emerging Markets Index consisted of the following 21 emerging market country indices.

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**BBgBarc Aggregate Bond Index (Global Bonds):** Provides a broad-based measure of the global investment-grade fixed income markets. The three major components of this index are the U.S. Aggregate, the Pan-European Aggregate, and the Asian-Pacific Aggregate Indices. The index also includes Eurodollar and Euro-Yen corporate bonds, Canadian government, agency and corporate securities, and USD investment grade 144A securities.

**BBgBarc U.S. Aggregate Bond Index (Bonds):** Represents the universe of fixed rate, non-investment grade debt. Eurobonds and debt issues 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 zeroes, step-up coupon structures, 144-A and pay-in-kind bonds (PIKs, as of October 1, 2009) are also included.

**BBgBarc Global Aggregate Bond Index (Global Bonds):** Provides a broad-based measure of the global investment-grade fixed income markets. The three major components of this index are the U.S. Aggregate, the Pan-European Aggregate, and the Asian-Pacific Aggregate Indices. The index also includes Eurodollar and Euro-Yen corporate bonds, Canadian government, agency and corporate securities, and USD investment grade 144A securities.

**BBgBarc Muni Bond Index (Municipal Bonds):** Bonds must have a minimum credit rating of at least Baa, an outstanding par value of at least $3 million, part of a transaction of at least $50 million, issued after December 31, 1990 and have a year or longer remaining maturity.

**BBgBarc U.S. High Yield Bond Index (High Yield):** Covers the universe of fixed rate, non-investment grade debt. Eurobonds and debt issues 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 zeroes, step-up coupon structures, 144-A and pay-in-kind bonds (PIKs, as of October 1, 2009) are also included.

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Appendix Definitions and Disclosures

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