

Capital Market Review

Fourth Quarter 2018

By Jack Peluso, Allegheny Research Team

After years of risk-on market fervor, a reality check was finally issued to investors in the form of a fourth-quarter correction. The broad market [as represented by the S&P 500 Index] began to display significant volatility, finishing the year with a three-month decrease of -13.5%. Although we have been expecting an uptick in volatility for quite some time now, such a sharp drop came somewhat unexpectedly. This decrease is especially surprising when we consider the underlying fundamentals in the U.S., coupled with continued growth in U.S. stock earnings. As we reported last quarter, earnings figures were strong, with 80% of the companies in the S&P 500 reporting EPS above estimates, according to FactSet [the highest percentage since they began tracking this data in 2008]. Third quarter earnings came in just as strong, as this time 78% of the companies in the index reported EPS above estimates [the second highest percentage FactSet has recorded]. Q3 also marked the third quarter in a row with year-over-year earnings growth of at least 25%, coming in at 25.9%, which is the highest growth rate since Q3 of 2010. As of Monday, January 7th, FactSet reported S&P earnings growth expectations for Q4 at only 11.4%. However, based on the average change in earnings growth due to “positive earnings surprises,” FactSet believes the index is likely to report earnings growth above 15%. If the S&P does report growth near that level, it will mark the first time the index has not reported growth above 20% in over a year [since the fourth quarter of 2017] – but, it would also mark the fifth consecutive quarter with double-digit growth. The sharp pullback is a concerning factor, but ultimately, we don’t believe it was the start of the next recession. Considering the continuation of strong underlying fundamentals [and more recently, an “expected” resolution to the U.S. government shutdown], a snapback is generally expected early-on in 2019.

During a historically rocky fourth quarter, we witnessed the S&P index fall by nearly -7.0% in October, and again, just over -9.0% in December. Despite posting a modest gain during November [with the index up 2.0%], the cumulative effect of the final three months was a decrease of -13.5%. As a result, six-, nine-, and twelve-month returns ending

12/31/2018 were all pulled into negative territory as well, with the index falling -6.9%, -3.7%, and -4.4% respectively. December’s 9.0% decline was the worst December return for the S&P since 1931, while stocks were being battered during the great depression [the index fell -14.5% then]. Aside from 2008, when the S&P fell 22% during the fourth quarter, 2018’s fourth-quarter drop of -13.5% was the worse Q4 return since the crash of 1987. Additionally, due to the fourth-quarter sell off, 2018 was the first time the S&P index has ever finished a year in negative territory after being up through the first three quarters. These historically negative figures come as a stark contrast to the record breaking anomalies we’ve recently observed. It’s amazing how quickly things can change. Even more amazing, was the fact that the pull-back took effect across the entire market-place, leaving essentially nowhere for investors to hide. Some critics are already calling 2018 “the most difficult year for all asset-classes since 2008...”

Dampening the blow slightly, the bond market [as represented by the Bloomberg Barclays Aggregate Bond Index] actually held up quite well during the historically awful final quarter. The aggregate index managed to climb out of flat/negative territory for first time this year, producing a modest three-month gain of 1.6%. Following first-, second-, and third-quarter hikes to the Fed Funds Rate, new Fed Chairman Jerome Powell led the decision to raise rates for the fourth consecutive quarter during the December 19th meeting. The December hike marked the fourth increase in just under twelve-months, and the ninth increase since December 2015 [when we hit the lowest possible rate, 0.25%, or effectively zero]. Despite the continuation of these consistent increases, the Chairman’s rhetoric regarding future rate-hikes changed swiftly following the October pull-back. Although Mr. Powell initially gave the impression that these rate increases would not slow down anytime soon [stating in September, “we are a long way from neutral”], given the immediate reaction to those comments along with the market environment that followed, it is almost certain that the Fed will back off during 2019. Despite the sharp pullback in stocks, as of 12/31/2018,

six-, nine-, and, twelve-month returns for the aggregate bond index came in at 1.7%, 1.5%, and 0.0% respectively.

Inflation [as expressed by the Consumer Price Index] displayed positive increases during ten [out of twelve] months this year, with the two negative months falling back-to-back to end the year [as the CPI fell by -0.3% during both November and December]. During the three-, six-, and nine-month periods ending 12/31/2018, the CPI produced mixed results, coming in at -0.5%, -0.3%, and 0.7% respectively. With the twelve-month return [1.9%] now resting slightly below the Fed's inflation target of 2.0%, and a significant pullback taking place during the fourth quarter, further rate hikes seem virtually out of the question for next several months. Many experts have already lowered their expectations for 2019, forecasting a single rate-hike as opposed to three or four [which was the consensus forecast earlier in the year].

Despite recent concerns, interest rates still sit near historical lows, and [thinking long-term] it only makes sense for the Fed to continue raising rates in order to create a buffer for the next upcoming recession. Some Fed critics, like President Trump, disagree. Despite the failures we've witnessed in the past regarding presidential influence of the Fed, Trump has persisted with his comments on the Fed Chairman. The President was quoted late last year saying that the Fed has "gone crazy," and that his single greatest threat to a second-term in office is Chairman Powell's aggressive policy. President Trump believes that the arbiter of his success is the stock market, and he doesn't believe the market can sustain its momentum given the Fed's current course. The fact of the matter is, the market simply can't maintain its momentum indefinitely. Remember, we've been in a bull market now for over a decade! We have been expecting more volatility for some time now, and there is undoubtedly more to come. Markets don't just go straight up [unfortunately for us], they are cyclical, no matter who lives in the White House. All things considered, we believe that the Fed's approach has been measured and responsible. As we've discussed before, lowering rates is one of only a few levers that the Fed can pull to assist in a recession. However, due to a pull-back in inflation and the fourth-quarter correction, further hikes are not expected near-term.

The Stock Market

We saw a dramatic shift during the fourth quarter, with all seven of the major market averages producing negative results, four of which falling double-digits. The Russell 2000 [an index made up of small-company stocks] was far and above the worst performer, finishing the quarter with a three-month loss of -20.2%. The S&P 500 [an

index comprised of large company stocks] was also down substantially, falling -13.5% over the trailing three-month period. The MSCI EAFE [an index consisting of international stocks from developed markets] posted a double-digit loss for the quarter as well, coming in at -12.5%, while the MSCI Emerging Markets [an index international stocks from emerging countries] fared slightly better with a three-month decrease of -7.5%. The Dow Jones Industrial Average dropped by -11.3% over the trailing three-month period, while the Dow Jones US Select REIT index [representing real estate companies] led the pack, but fell -6.6%, continuing its negative trend for the third consecutive quarter. Lastly, the Bloomberg Commodity Index decreased -9.4%, landing in the middle of the pack for the three months ending 12/31/2018.

Six- and nine-month returns ending 12/31/2018 came back almost entirely negative, with only one index [out of seven] producing a positive result, during only one period [the trailing nine-months]. In contrast to last quarter's results, the Russell 2000 Index landed at or near the bottom during both the six- and nine-month periods, falling by -17.4% and -10.9% respectively. The S&P 500 finished the quarter [ahead of the Russell 2000] with six- and nine-month losses of -6.9% and -3.7%. The MSCI EAFE was the only index aside from the Russell 2000 to finish with double-digit losses across the board, coming in with six- and a nine-month decreases of -11.4% and -12.5% respectively. The MSCI EM Index went from the middle of the pack down to the laggard position, producing six- and nine-month losses of -8.5% and -15.8% respectively. The DJ Industrial Average finished the quarter [ahead of the S&P 500], with six- and nine-month losses of -2.8% and -1.5%. Meanwhile the DJ REIT Index fell -5.9% during the six-month period; however, due to a second-quarter spike, it managed to produce a nine-month increase of 3.5%. The Commodity Index migrated from the middle of the group towards the bottom, finishing the trailing six- and nine-month periods with losses of -11.2% and -10.9% respectively.

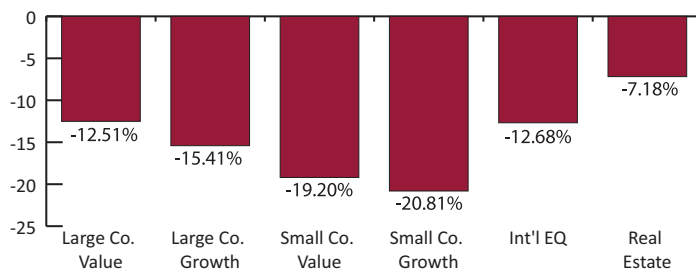
Just like the three- and six-month periods, results came back entirely negative for the trailing twelve months ending 12/31/2018. The Russell 2000 posted another double-digit decrease, falling by -11.0% over the course of the year, while the S&P 500 finished up the twelve month period down -4.4%. Meanwhile, the MSCI indices fared the worst during the trailing twelve months, with the EAFE Index posting an annual loss of -13.8%, and our laggard, the EM Index, down -14.6%. Conversely, the DJ indices fared the best during the twelve-month period, with the Industrial Average posting an annual loss of -3.5%, while the REIT Index came in slightly lower with an annual loss of -4.2%. Lastly, the Bloomberg Commodity index posted another double-digit decrease, falling -11.3% over the twelve months ending 12/31/2018.

Market Returns

	3 months ending 12/31/2018	12 months ending 12/31/2018
S&P 500	-13.52%	-4.38%
Dow Jones Industrial Avg	-11.31%	-3.48%
Russell 2000	-20.20%	-11.01%
MSCI EAFE	-12.54%	-13.79%
MSCI Emerging Markets	-7.47%	-14.58%
DJ US Select REIT	-6.61%	-4.22%
Bloomberg Commodity Index	-9.41%	-11.25%

Comparison of Equity Styles

3 months ended 12/31/2018



Looking at year-end returns by Equity Style, we can see that a small reversion has finally begun to take place with regards to the value/growth trend we've witnessed over the past several quarters and beyond, as growth companies trailed their value equivalents during the three-month time period ending 12/31/2019. As we mentioned previously, some of our managers have been attributing the extended value/growth trend to what they call the "momentum effect". Essentially, they maintain the view that the ongoing upswing in stock prices has evolved into a momentum rally that is significantly disconnected from underlying equity fundamentals. We would generally tend to agree with this assessment. So, was the fourth quarter reversion the start of something bigger, a long-term correction perhaps? Or, simply a short-term shift brought on by an unusually volatile period? It's extremely hard to say. In our opinion, predicting inflection points is nearly impossible. However, as firm believers in reversion to the mean, we would encourage all our advisors to continue thinking long-term; empirical evidence supports value outperforming growth over the long-term.

During the trailing three-month period ending 12/31/2018 all styles produced negative results. Large Growth fell -15.4%, trailing Large Value at -12.5%. Meanwhile, Small Growth

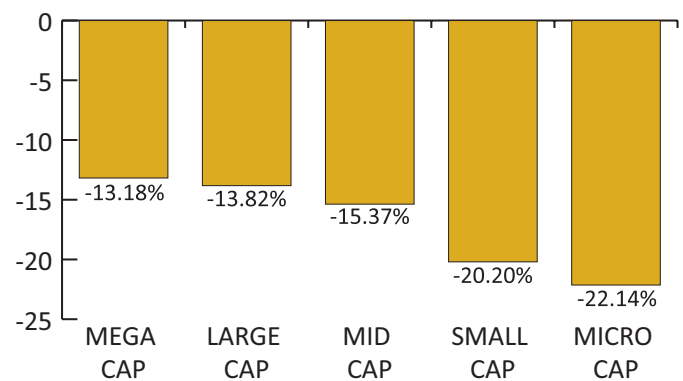
fell -20.8%, trailing Small Value at -19.2%. The average International Equity manager dropped -12.7%, while the average Real Estate manager led the pack, coming in with a loss of -7.2%.

Six- and nine-month returns followed a very similar pattern, as the Equity Styles produced primarily negative results across both time periods [with the exception of Real Estate during the trailing nine months]. Large Growth stocks trailed Large Value again during the six months, falling -9.0% [versus -7.7%], but returned to the previous elongated pattern for the nine-month period, losing -4.4% [versus -6.2%]. Small stocks reverted to the previous pattern immediately, with Growth falling by -15.3% during the six months [versus -18.4% for Small Value] and down -8.0% during the trailing nine [versus -13.0% Small Value]. The average International Equity manager finished the year with six- and nine-month losses of -12.0% and -13.9%, while the average Real Estate manager maintained the leadership position [thanks to a decent second quarter], falling -6.7% during the six-month period and increasing 0.8% over the nine months.

Twelve-month returns followed the same pattern, this time without the lone deviation [Real Estate], as all Equity Styles finished 2018 with negative annual returns. The former value/growth trend was on full display as well, with value companies trailing growth companies by a significant margin. Large Growth saw an annual decline of -4.4%, while Large Value dropped nearly double, falling -8.6% over the trailing twelve months. Small Growth actually led the group, coming in with an annual decline of 6.0%, while Small Value decreased over double that amount, falling -15.4% over the trailing twelve months. The average International Equity manager joined Small Value at the bottom, ending the year down -14.6%, while the average Real Estate manager just barely missed the lead, finishing 2018 with an annual loss of -6.1%.

Return by Market Cap

3 months ended 12/31/2018



Thinking back to the first quarter of the year, you might recall a small uptick in volatility; however, given strong earnings figures and underlying fundamentals, U.S. stocks rallied during the second and third quarters. Despite the continuation of strong earnings and no change in fundamentals, the broad market took a nose dive during the fourth quarter, pulling returns down across the board. Looking at U.S. stocks by market cap, fourth-quarter results came back entirely negative across the all four time periods [three-, six-, nine- and twelve-month periods ending 12/31/2018]. As we pointed out last quarter, the small/large trend we've observed over the past several quarters [with Small-cap leading Large] has completely reverted, and Large-cap stocks outperformed Small-caps exclusively. Unlike last quarter, the Mid-cap segment managed to outperform both Small- and Micro-cap stocks, landing in the middle of the pack – leading to a distinct pattern of increasingly negative returns as you slide down the market-cap structure.

Only one [out of five] market segments outpaced the broad market return of -13.5% during the trailing three months. Mega-cap stocks led the pack for the second consecutive quarter, finishing the three-month period with a loss of -13.2%, while the Large-cap segment produced a slightly large loss, coming in with a three-month drop of -13.8% [finishing just behind the broad market]. Mid-cap and Small-cap stocks also underperformed the broad market, finishing the year with quarterly returns of -15.4% and -20.2% respectively. Meanwhile, Micro-cap stocks [down -22.1%] underperformed the broad market as well, finishing the three months ending 12/31/2018 as the clear laggard.

Just like the three months, only one [out of five] segments outpaced the broad market's six-month loss of -6.9% for the period ending 12/31/2018. Maintaining the top position, Mega-cap was the only segment to outperform the S&P, finished the trailing six-month period with a loss of -5.1%. Large-cap stocks followed, finishing slightly behind the broad market, ending the year with a six-month loss of -7.4%. Mid-cap stocks lost -11.1% over the six-month period, while Small-cap stocks dropped by -17.4%. Lastly, Micro-Cap stocks trailed again, losing a substantial 21.5% over the second half of 2018.

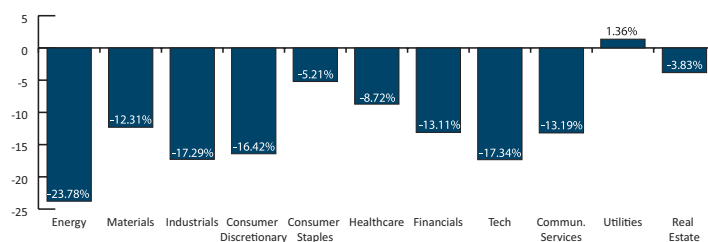
Continuing the same pattern, only one [out of five] market segments outperformed the broad market's loss of -3.7% during the nine-month period ending 12/31/2018. Once again landing in the top-spot, Mega-cap stocks managed to produce a loss of -1.1% over the trailing nine months. Large-cap stocks followed next, coming in just behind the broad market with a nine-month loss of -4.1%. The Mid-cap segment dropped -8.6% over the nine-month period, while

Small and Micro-Cap stocks remained at the bottom, finishing the year with a nine-months decreases of -10.9% and -13.7% respectively.

Maintaining a perfect pattern, only one [out of five] segments was able to outperform the broad market's annual return of -4.4%. Mega-cap stocks [as represented by the Russell Top 50 Mega Cap Index] finished the fourth quarter just ahead of the broad market, coming in with an annual loss of -3.0%, while the Large-cap segment [as represented by the large-cap Russell 1000 Index] came in just behind the broad market, producing an annual loss of -4.8%. The Mid-cap segment [as represented by the Russell Mid Cap Index], fell -9.1% during the trailing twelve-month period, while Small-cap stocks [as represented by the small-cap Russell 2000 Index] produced an annual loss of -11.0%. Consistently lagging the group, Micro-cap stocks [as represented by the Russell Micro Cap Index] finished the fourth quarter with an annual loss of -13.1%.

Stocks by Sector

3 months ended 12/31/2018



As a reminder, the GICs sector methodology was recently updated and the old “Telecom” sector has officially been replaced by the new “Communication Services” sector. Stocks from the Technology and Consumer Discretionary sectors have been repositioned, resulting in nearly \$3 trillion in market capitalization movement. Research distributed an exhibit explaining this change in detail, but in a nutshell; according to GICs, “the changes to the sector name and broadening of the sector are a result of changes in how communication occurs, while Telecom was [previously] a traditional defensive higher yielding sector, these changes will lead to higher beta names [such as Alphabet and Facebook] becoming the largest weights in the sector.”

With Real Estate separated from the Financials sector during 2017, the S&P 500 Index now has eleven individual sectors. The individual sectors, along with their respective quarter-end weightings in the index [as of 12/31/2018] are as follows: Energy 5.3%, Materials 2.7%, Industrials 9.2%, Consumer Discretionary 9.9%, Consumer Staples 7.4%, Healthcare

15.5%, Financial Services 13.3%, Technology 20.1%, Communication Services 10.1%, Utilities 3.3% and Real Estate 3.0%.

Nowhere to hide indeed, as ten [out of eleven] sectors finished the three months ending December 31st, 2018 in negative territory. Energy was the clear laggard, falling -23.8% over the last three months of the year alone [with gas/oil prices continuing to build on their third-quarter decline]. Materials decreased -12.3% during the trailing three-month period, while Industrials finished the fourth quarter down -17.3%. Consumer Discretionary fell by -16.4% over the trailing three months, while Consumer Staples fell by -5.2%. Healthcare managed a three-month loss of -8.7%, Financial Services decreased -13.1%, Technology fell -17.3%, and Communication declined -13.2%. Lastly, Utilities [the only positive performer] and Real Estate led the pack during the three-month period, coming in at 1.4% and -3.8% respectively.

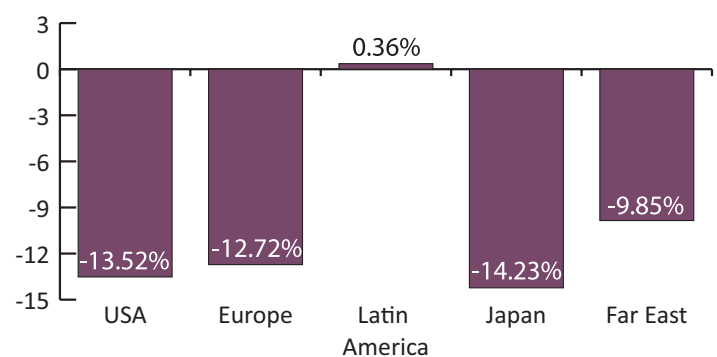
Pulled down due to fourth quarter performance, eight [out of eleven] sectors produced negative returns for both the six- and nine-month periods ending 12/31/2018 [a stark contrast to last quarter's results]. Energy, which remained the laggard over both periods, decreased by -23.3% during the six months and -13.0% during the trailing nine. Materials dropped off -12.0% during the six-month period and -9.7% during the nine months, while Industrials decreased -9.0% during the six-month period and fell -11.9% during the trailing nine. Aided by a strong first half of the year, the Consumer Discretionary sector displayed improved results as we extend our scope further back into 2018 and finished the quarter with six- and nine-month returns of -9.6% and -2.2% respectively. On the flip-side, Consumer Staples [hurt by a poor start the year but rallying in the third quarter] finished 2018 with six- and nine-month returns of 0.2% and -1.4% respectively. Also aided by a strong start, and despite a fourth quarter drop of nearly -9%, Healthcare managed to produce six- and nine-month gains of 4.6% and 7.8% respectively, leading all other sectors over both periods. Technology also experienced a start in 2018, however the fourth quarter decrease [over 17%] was more than enough to mute earlier performance, as the sector finished the year with six- and nine-month losses of -10.1% and -3.7%. The newly created Communication Services sector fell -4.6% during the trailing six-month period and -5.5% during the nine months. Utilities fell from the lead but was the only sector to manage entirely positive results, finishing the year with six- and nine-month gains of 3.8% and 7.7% respectively. Lastly, Real Estate [displaying volatility throughout the year] produced a six-month loss of -3.0% but managed a nine-month gain of 2.9%.

Like the nine-month period, looking at the trailing twelve months ending 12/31/2018, eight [out of eleven] sectors

landed in the red. However, as proof of the first quarter volatility, twelve-month returns came in lower than nine-month across the board [with the exception of Consumer Discretionary]. Energy remained at the bottom of the group, finishing 2018 with an annual loss of -18.1%. Materials and Industrials fared slightly better but still produced double-digit annual losses, ending the year down -14.7% and -13.3% respectively. Aided by a strong start to the year [and a particularly strong first quarter], the Consumer Discretionary sector managed to pull out of the red, finishing the year up 0.8%. Meanwhile, impeded by a poor start to the year [along with a particularly poor first quarter] Consumer Staples went the other direction, finishing 2018 in the red with an annual loss of -8.4%. Just as we saw in the six- and nine-month periods, Healthcare maintained the top-spot [despite the poor fourth quarter], rising 6.5% over the trailing twelve months. Financials finished up the year near the bottom, falling -13.0%. Technology, which was nearly flat [producing an annual return of -0.3%] seemed to be moving in tandem with the Consumer Discretionary sector, as both sectors proved to be essentially immune to the first quarter volatility. Neither one [Technology or Consumer Discretionary] experienced the same luck during the fourth-quarter sell-off. Like most other sectors, Communication Services felt the impact of both periods of volatility [first and fourth quarter], finishing the year with an annual decrease of -12.5%. Utilities was up 4.1% over the trailing twelve-month period, making it the only sector to manage positive results across all four time periods. Meanwhile, Real Estate continued its volatile pattern of mixed results, ending 12/31/2018 in the red, down -2.2% over the trailing twelve months.

Stocks by Region

3 months ended 12/31/2018



Looking at average stock market returns across five main regions [USA, Europe, Japan, Latin America and the Far East], only Latin America was able to produce positive results during any of the four time periods [the trailing three-month, six-month, nine-month, and twelve-month periods ending

December 31st, 2018], which speaks to the breadth of the recent pullback. Also, the lone bright-spot [Latin America], only managed positive returns during two [of four] time periods.

The United States [as represented by the S&P 500 Index] finished with entirely negative results. However, despite producing exclusively negative returns, the U.S. still managed to lead the group over the nine- and twelve-month periods. As of 12/31/2018, the U.S. index fell -13.5%, -6.9%, -3.7%, and -4.4% over the trailing three, six, nine and twelve months.

Like the U.S., Europe [as represented by the MSCI Europe Index] also finished the year with entirely negative results. However, unlike the S&P, the European index dropped by double-digits each period – falling -12.7%, -12.0%, -13.1%, and -14.9% over the trailing three-, six-, nine-, and twelve-month periods ending 12/31/2018. Despite the consistently poor results, Europe only played the laggard during the six-month time frame.

The Japanese region [as represented by the MSCI Japan Index] seemed to be hit the hardest during the fourth quarter, with the Japanese index dropping -14.2% over the final three months of the year. Japan followed a very similar pattern to Europe, coming in with double-digit losses across the board, yet only playing the laggard during the first [three-month] time period. Six-, nine-, and twelve-month results for the region came in at -11.1%, -13.6%, and -12.9%.

Uninterrupted by the fourth quarter drawback, Latin America [as represented by the MSCI EM Latin America Index] was essentially flat, rising slightly [0.4%] over the trailing three months. A decent third quarter for the Latin American index, led to a six-month gain of 5.2%. However, when we extend our scope beyond the second half of 2018, the volatile nature of the region becomes apparent, with nine- and twelve-month returns coming in at -13.5% and -6.6%.

Excluding the outlier [Latin America], the Far East [as represented by the MSCI AC Far East Ex-Japan Index] held-up better than most other regions during the final quarter. That being said, the Far East index was still down substantially, losing -9.9% over the trailing three months – speaking to the severity of the pullback. Widening our scope, we can see the Far East slides consistently downwards in the rankings, ultimately lagging the group during the nine- and twelve-month periods. As of 12/31/2018, six-, nine-, and twelve month returns came in at -11.2%, -16.4%, and -15.1%.

Please note, all data is quoted in U.S. Dollar terms, any change in currencies may therefore influence actual returns.

Bonds Market

Stocks weren't the only area impacted by a bizarre fourth quarter. In contrast to the recent trend, interest rates decreased [somewhat unevenly] across the yield curve, with 2-, 5-, 10-, and 30-year rates all falling [17-43 basis points] from their former [9/30/2018] positions. The notable exception to this reversal was 90-day rates, which continued to climb consistently, rising 26 bps from their 9/30/2018 positions. Staying true to course, Fed Chairman Jerome Powell has led the decision to raise rates during each quarter this year, with the December rate-hike marking the fourth increase in just under a year [and the ninth hike since December 2015, when we hit the lowest possible rate, 0.25%, or effectively zero]. Given the market environment we've witnessed over the past few months, the slight pullback we've seen with inflation, along with a host of other miscellaneous issues [trade/tariff wars, government shutdowns, etc.] now causing somewhat serious concerns, we would expect the Fed to revert back to their former [overly cautious & heavily data-dependent] approach during the near future.

Don't forget [prior to the past several months], the Federal Reserve has acted extremely cautiously over the past few years. One of the main reasons for the Fed's cautious approach was due to the essentially unexplained lack of inflation. The Fed's framework for forecasting inflation applies a modified version of the Phillip's Curve, which posits an inverse relationship between unemployment and inflation rates. This means when the unemployment rate falls, wage rates will go up; this leads to higher prices, which ultimately leads to higher inflation. Over the past few years, there seemed to be a breakdown in this relationship. While we've seen lower and lower unemployment, it has taken much longer than expected for this to lead to higher inflation. Two main theories regarding this breakdown: (1) a fundamental change brought on by anti-inflationary trends, or (2) a simple lag in the Phillip's curve. The latter seems to be the more likely explanation, especially after seeing inflation begin to pick up the pace. As inflation finally began to increase, the Fed began to lift their foot from the brakes, hiking rates in a consistent and measured fashion over the past two years.

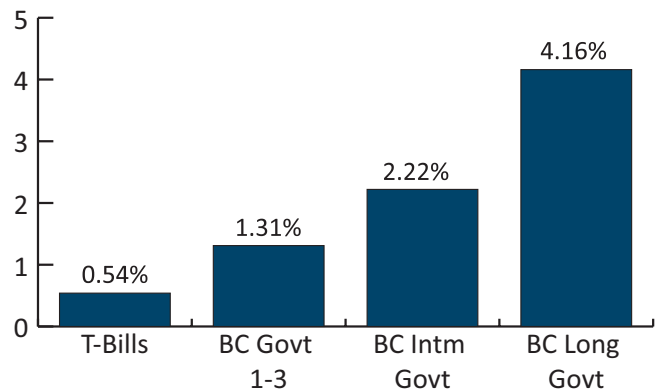
More recently, inflation [as represented by the Consumer Price Index] has slightly declined, falling by about -0.3% during both November and December. Also, after hitting the mark the previous three quarters in a row, the twelve-month figure now rests just below the Fed's target [1.9% versus the target of 2.0%]. This may appear worrisome to some, and for the data-dependent Federal Reserve, might just be enough to warrant a pause. However, what seems to be far more disconcerting is the array of other random issues like trade wars

and government shutdowns consistently grabbing headlines. As was evidenced by the fourth quarter volatility, these problems coupled with an overextended bull market [and impending recession] have resulted in an extremely skittish market, looming with fear and anxiety. While underlying fundamentals remain strong [as we've reiterated multiple times], and interest rates remain historically low, it becomes apparent just how easily emotion and uncertainty can drive the markets. Thankfully, murmurings have recently been circulating regarding a potential resolution to the government shutdown. While still hypothetical, this comes as welcome news to nervous investors, especially for those focused on first- and second-quarter GDP figures.

Fed Chairman Powell's rhetoric during his September meeting might have exacerbated the fourth-quarter downturn, however [in our opinion], it was certainly was not the cause. Early in 2018, the Fed laid the path to continued hiking rates well into 2019. At the time this made logical sense, with underlying fundamentals staying strong and interest rates still at/near historical lows, the Fed needed to prepare a buffer for the next [inevitable] downturn while they still had time. Initially, Powell didn't seem to take the hint when market dynamics began shifting towards the end of the year. Perhaps his statements were more about proving the Fed's independence, rather than providing a genuine forecast for their future course of action (it's very hard to say). Given pressure from the White House, this certainly is not out of the question. Either way, as should always be the case, the Fed takes their cues from the markets. And, given the market's immediately negative reaction to his address, Powell has been stepping back his comments since the moment they were made. Aside from this err, we have to credit Powell for maintaining his course and preparing the small buffer he did, especially now with some critics now suggesting a rate-decrease might be necessary during 2019 [mainly depending on first and second quarter GDP, which has already been impacted by the government shutdown].

Bonds by Maturity

3 months ended 12/31/2018



With most interest rates declining during the fourth quarter, the various maturity sectors of the government bond market reversed course, coming in with almost entirely positive results during all four time periods [the trailing three, six, nine, and twelve months ending 12/31/2018] – with the longer-maturity sectors outperforming shorter-maturity sector over the final three months of the year. Government bonds are generally the most sensitive to interest rates changes, and as with any bond, when maturity extends the sensitivity to rate changes increases. Considering this, it's not surprising to see improved results as of year-end, especially with regards to Long Government bonds in particular. As per usual, U.S. Treasury Bills continued chugging along, producing positive results during each time period and actually leading the group over the trailing twelve months.

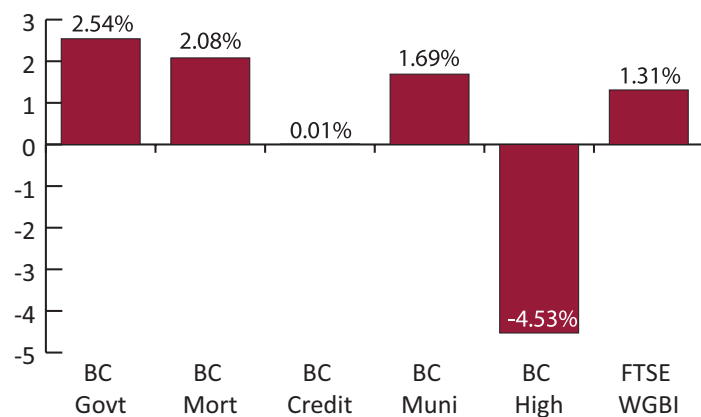
Looking at three- and six-month returns for the period ending 12/31/2018, we can clearly see the effects of the fourth quarter reversal, as all sectors experienced a bump in performance, especially with regards to longer-maturity sectors. The Bloomberg Barclays Long Government Index [which saw negative returns across the board last quarter, and played the laggard during each period], ended up leading the group during the three-month period, increasing by 4.2%. Thanks to this bump, and despite being down almost -3% last quarter, the Long index produced a six-month gain of 1.2%. Meanwhile, the Bloomberg Barclays Intermediate Government Index [which was also negative across the board last quarter] increased 2.2% over the trailing three-month period and gained 2.1% over the trailing six, while the short-term Bloomberg Barclays 1-3 Year Government Index saw smaller increases, rising by 1.3% over the three months and 1.5% over the six-month period. Steady as can be, U.S. T-Bills gained nearly 0.5% for the second straight quarter, leading to a six-month gain of 1.0%.

Treasury	12/31 2018	9/30 2018	6/30 2018	3/31 2018	12/31 2018
2 Year	2.48%	2.81%	2.52%	2.27%	1.98%
5 Year	2.51%	2.94%	2.73%	2.56%	2.20%
10 Year	2.69%	3.05%	2.85%	2.74%	2.40%
30 Year	3.02%	3.19%	2.98%	2.97%	2.74%

Looking at nine- and twelve-month returns [as of 12/31/2018], we can see the elevated impact of the fourth quarter wearing thin, with U.S. Treasury Bills sliding from first place to last [and Long Government moving the opposite direction]. Aided by a strong fourth quarter, Long Government bonds were able to finish the year with a nine-month gain of 1.5%; however, factoring in the poor first quarter, the fourth quarter bump was simply not enough, as the Long Government index fell -1.8% over the trailing twelve months. The Short and Intermediate Government indices, clearly not impacted in the same fashion as the Long Government sector, managed more consistent results. Intermediate Government came in with a nine-month gain of 2.2% and produced an annual return of 1.4%, while Short Government increased by 1.7% during the nine-month period and managed an annual return of 1.6%. U.S. T-Bills finished the year with nine- and twelve-month gains of 1.4% and 1.8% respectively, building on each quarter with consistently positive [albeit modest] returns.

Bonds by Sector

3 months ended 12/31/2018



Looking across all six major sectors of the bond market as of December 31st, 2018, we can see the first three months of the year proved to be the toughest (at least for most of the bond market). This can be seen clearly in the twelve-month time period, as three [out of six] sectors produced negative returns, while two [out of six] were down over the nine- and six-month periods, and only one [out of six] was down during the trailing three-month period ending 12/31/2018. Taking a nose dive during the fourth quarter, and in stark contrast to last quarter's results, U.S. High Yield was the only sector to remain negative across all four time periods [and the only sector to come in negative during the final quarter of the year].

In a reversal from the previous three months, only one [out of six] sectors finished the quarter in the red. The U.S. High Yield sector went from leader to loser, trailing the pack with

a three-month loss of -4.5%. U.S. Credit was the only other sector to experience a downward trend, but still managed to finish the fourth quarter flat [after coming off of a third-quarter gain of 0.9%]. Finishing just behind the Aggregate Index return of 1.6%, the WGBI [World Government Bond Index], which was negative last quarter, gained 1.3% over the final three months. The Municipal Debt and MBS [Mortgage-Backed Securities] sectors finished the quarter ahead of the Aggregate Index, coming in three-month gains of 1.7% and 2.1%, respectively. Moving opposite of High Yield and shifting from the bottom [last quarter] to the top [this quarter], the U.S. Government Debt sector also finished ahead of the Aggregate, gaining 2.5% over the final three months of the year.

Six- and nine-month time periods ending 12/31/2018 showed very similar results, as only two [out of six] sectors ended the year with negative returns. Dragged down by the final quarter, six- and nine-month results came back in the red for the High Yield [as represented by the Bloomberg Barclays US Corporate High Yield Index], as the sector tallied losses of -2.2% and -1.2%, respectively. Hit hard during the middle of the year, and especially during the second quarter, the World Government Bond Index [as represented by the non-USD FTSE WGBI] joined High Yield in the red, falling -0.9% over the six-month period, and took over the laggard position with a substantial [-6.0%] loss during the trailing nine months. Despite a flat quarter, U.S. Credit [as represented by the Bloomberg Barclays U.S. Credit Index] managed a six-month gain of 0.9%; however, after factoring in a second-quarter loss, the sector came back flat over the nine months. Municipal Debt [as represented by the Bloomberg Barclays Municipal Index] and Mortgage-Backed Securities [as represented by the Bloomberg Barclays U.S. Mortgage-Backed Securities Index] posted six-month gains of 1.5% and 2.0% respectively [thanks to an uneventful third quarter], but managed slightly better nine-month results, coming in at 2.4%, and 2.2% respectively. Padded by the fourth quarter gain, U.S. Government [as represented by the Bloomberg Barclays U.S. Government Index] managed to stay at/near the top of the group, posting six- and nine-month gains of 2.0% and 2.1% respectively.

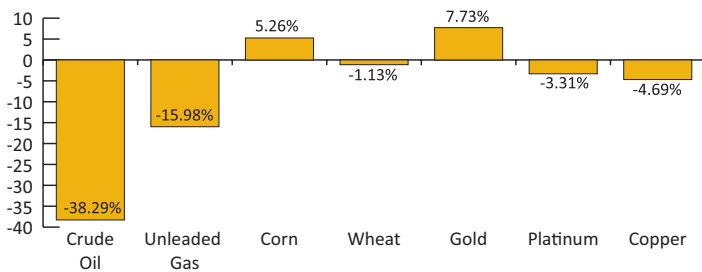
Extending our scope to capture the entire year, we can see the affects of the first quarter coming back into play, as three [of six] sectors finished the year with negative annual returns. U.S. High Yield reclaimed the laggard spot, finishing the year tied with U.S. Credit [which experienced a particularly rough first quarter], as both sectors produced annual losses of -2.1%. Unlike U.S. Credit, the WGBI was aided by a first- and fourth-quarter gains; however, these gains were not enough to offset second- and third-quarter losses, the cumulative effect of which resulted in an annual decrease

of -1.8%. All three of the remaining sectors [Municipal Debt, US Mortgage-Backed Securities, and U.S. Government Debt] were also negatively impacted by the first quarter. Thanks primarily to their fourth quarter rally, all three still managed to finished December with annual gains, rising by 1.3%, 1.0%, and 0.9% respectively.

Please note, the Citi indices were purchased by FTSE, and as you may have noticed, the Citi WGBI Non-USD has been officially renamed the FTSE WGBI Non-USD.

COMMODITIES MARKET

3 months ended 12/31/2018



Despite seeing a small jump during the second quarter, the Bloomberg Commodity Index finished the year with negative results across all four time periods [the trailing three-, six-, nine-, and twelve months ending 12/31/2018]. Performing even worse than last quarter [down -2.0%], the Commodity index dropped -9.4% over the final three months of the year – resulting in a six-month decline over -11.2%. When we factor in the second-quarter increase [0.4%], the index return was slightly better [but still awful], coming in at -10.9% over the trailing nine-month period. Considering that the first-quarter decrease [-0.4%] effectively cancelled out the second-quarter gain, twelve-month results appear identical to the six-month period with the index down -11.2%.

As we saw last quarter, Crude Oil and Unleaded Gas prices reversed course yet again, this time falling in tandem. The same pattern carried through to the fourth quarter, though this time at a much more accelerated rate, with Crude Oil prices dropping by a significant -38.3% [versus -1.3% last quarter] and Gasoline prices dropping -16.0% [versus -1.4% last quarter]. While all tracked commodities fell in unison during the third quarter, fourth quarter results showed much less of a distinguishable pattern. Corn [last quarter's laggard] actually increased by 5.3%, while Wheat fell by -1.1%. Gold increased by 7.7% during the quarter, leading all other commodities, which you might expect given periods of increased volatility. Meanwhile Platinum decreased by -3.1% over the three-month period, and Copper posted a three-month loss of -4.7%.

For the six- and nine-month periods ending as of 12/31/2018, we observed mixed results, though given a fairly flat third quarter, three- and six-month returns came out very similar. Clearly impacted by the steep fourth-quarter drop, Crude Oil and Unleaded Gasoline finished the year with six-month losses of -39.1% and -17.2% respectively, and nine-month of -30.4% and -6.1%, respectively. On the flip-side, Corn [which was padded by a fourth-quarter gain] increased 4.9% over the six-month period but dropped -3.3% over the trailing nine, while Wheat prices increased during both time periods, rising 0.6% over the six months and 11.6% over the trailing nine. Also padded by a fourth-quarter gain, Gold increased 2.3% during the six months but dropped -3.4% over the trailing nine-month period. Meanwhile, Platinum and Copper [which, along with Oil and Gas, managed entirely negative results during each time period ending 12/31/2018] saw six-month losses of -7.4% and -10.0% respectively, and nine-month losses of -15.8% and -11.0% respectively.

Looking at the twelve-month period ending 12/31/2018, results are primarily negative with the exception of food prices alone. Despite a decent start to the year, Crude Oil produced an annual loss of -25.3%, while Unleaded Gasoline prices dropped off -1.8%. The lone bright spot during the twelve-month time period was food prices, with Corn producing an annual gain of 6.9% and Wheat leading the way with an annual gain of 17.9%. Just like the nine-month period, Metals prices came back entirely negative once again, with Gold producing an annual loss of -0.9%, Platinum finishing with an annual loss of -14.8%, and Copper falling by -17.5% over the trailing twelve months.

CURRENCY MARKET

3 months ended 12/31/2018



During 2016 and the majority of 2017, most foreign currencies had [generally] been appreciating versus the U.S. Dollar. This trend began slowing during 2017, with the rate of appreciation for most currencies dropping off dramati-

cally to start 2018. Starting around mid-year, it was apparent that not only did this trend slow to a halt, but it had actually reversed course. This reversal can likely be attributed to a handful of factors; recent U.S. Foreign Policy [tariff war, threat of a trade war, etc.], the U.S. Federal Reserve [continued rate hikes], and generally strong fundamentals in the U.S. [as compared to the rest of the world]. All of these factors are still relevant, and as of 12/31/2018, most foreign currencies we watch continue to depreciate versus the U.S. Dollar [aside from the Japanese Yen, which saw a small uptick over the fourth quarter].

Given weaker growth throughout eurozone economies [versus the US] and considering political/economic uncertainty across European countries [such as Germany, Italy], it should come as no surprise that the Euro continued to decline versus the US Dollar. The general expectation is that the European Central Bank will begin shutting down its €2.6 billion Quantitative Easing [QE] Program in January and start raising rates during the latter half of 2019. Directionally, the Pound followed the same pattern as the Euro [which is usually the case] with both currencies falling versus the US Dollar over all four periods ending 12/31/2018. However, during the final quarter of the year, the British currency was hit a bit harder than the Euro – falling -2.3% over the three month period, versus a -1.4% drop for the Euro. We can see the deviation between the two currencies carry through to the six-, nine-, and twelve-month periods ending 12/31/2018, as the Euro returned -3.6%, -9.1%, -5.6% respectively [versus -2.0%,

-7.1%, and -4.5% for the Pound]. This diversion can likely be attributed to a potential Brexit resolution being shot-down late in the year.

The Australian Dollar [which is strongly influenced by commodity prices along with the Chinese economy], unsurprisingly continued on its negative trend throughout the fourth quarter. As of 12/31/2018, the three-, six-, nine-, and twelve-month returns for the Australian currency came in at -2.3%, -4.8%, -8.1%, and -9.6% respectively. As per usual, the Canadian Dollar followed a very similar pattern, producing negative results across the board. Unlike Australia, the Canadian currency experience a small uptick during the third quarter, leading to a less consistently tapered return pattern. As of 12/31/2018, the three-, six-, nine-, and twelve-month returns for the Canadian currency were -5.4%, -3.7%, -5.4%, and -8.0%.

Despite being hit hard last quarter, the Japanese Yen experienced an uptick during the final few months of the year. The bump in performance resulted in three- and six-month gains for the Japanese currency, as the Yen rose 3.4% and 0.6%. The small fourth-quarter gain was not enough to offset a steep second-quarter drop, however, as the Yen fell -3.4% over the trailing nine-month period – and, after factoring in strong first-quarter performance, the currency once again appreciated versus the US Dollar, producing an annual gain of 2.4%.



The information included herein was obtained from sources which we believe reliable.

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