LGIMA's Multi-asset Market Update

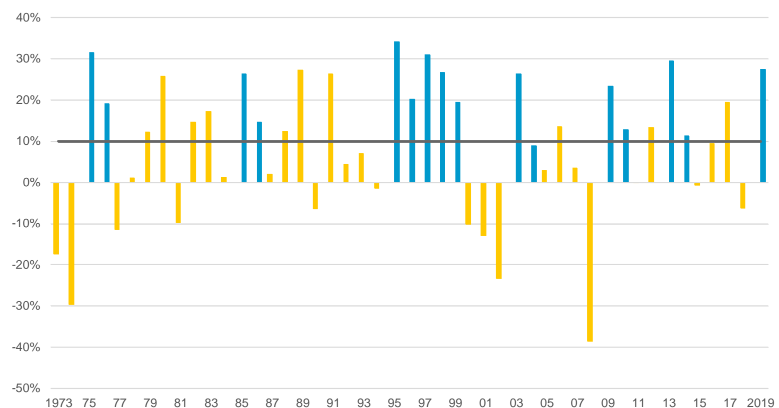
December 2019

Equity market

We write again with equities up for another month, bringing the S&P 500 total return for the year to +30%. Such a tail wind has made two themes in client conversations even more prevalent: anxiety about what's next and, relatedly, hedging through 2020. We obviously share some of the anxiety, expressed through our short equity view. However, vacillating dynamics in fundamentals and valuations versus those in market sentiment and positioning are challenging our bearish conviction. The Phase I deal and UK general election results remove some uncertainty but leave us wondering what good news is left to price in. Economic fundamentals remain sound but valuations are somewhat stretched. Flows and positioning indicate that investors are buying into the market rally but not with classic overexuberance. Together, these are some of the current factors that make it so difficult to position in a late cycle environment.

The dilemma between risk and return is therefore more acute. As noted in the email, total returns like those of 2019 occur with some regularity, and subsequent years of double-digit returns following those of similar current magnitude are not unheard of (see chart, right). However, starting from valuations comparable to today's, the average annualized return over the next three years is a meager 0.8% (and only 2.3% over the subsequent ten years). Such low prospective returns could be interpreted a couple ways if history is to repeat—or at least rhyme. The first interpretation, relative to most long-term capital market assumptions, is that a significant drawdown will occur in the coming years with reasonably positive returns otherwise. The second interpretation could simply be a protracted period of sub-par returns.

S&P 500 Annual Price Return



Source: Bloomberg, as of 12/17/19

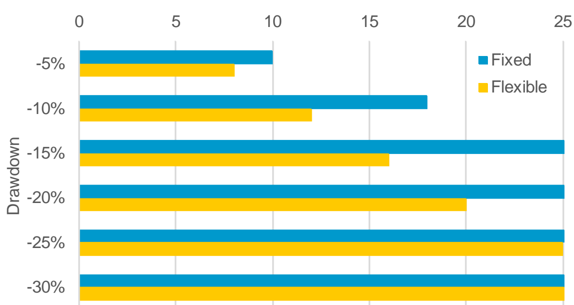
These possible scenarios should encourage investors to limit downside exposure and/or could minimize the opportunity cost of foregone upside. A put-spread collar is ideally suited to that environment, and your author—for one of the few and possibly only times—relied on the expression "pounding the table" to emphasize this point at a recent client meeting. The Equity Volatility section below will elaborate on the current market dynamics and opportunities for equity hedging. Here, we will focus on why we believe collaring risk exposure is so critical.

We recognize that the timing of any potential drawdown as in our first scenario above is highly uncertain, that there is a reasonable probability of meaningful equity gains yet to come and that most institutions do

not have the desire or ability to turn outright short on equities. A put-spread collar can be a more strategic approach to materially limiting downside while retaining attractive upside potential. We also recognize that using valuations to time hedges is an imperfect solution. Notably, a valuation threshold that is too low for implementing a hedge creates a drag on long-term returns, while one that is too high leaves investors subject to large risks. Nevertheless, it is the avoidance of large risks that is our current motivation when speaking to clients because drawdown risk is magnified for institutions with net negative cash flows (e.g., most pensions, healthcare organizations that rely on investment returns on operating assets to fund operations, or foundations receiving limited external support).

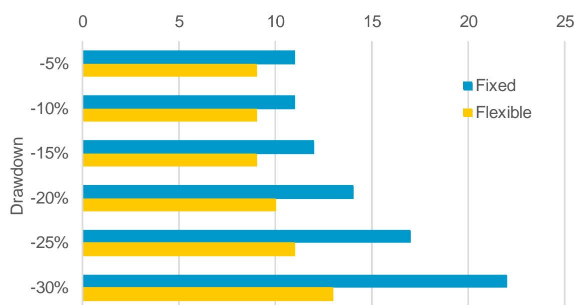
For example, consider an institution with a 6.5% expected return on assets[1] but 5% net outflows each year. Those outflows can be fixed as in the case of a pension paying nominal benefits, or flexible as in the case of a foundation paying out a given proportion of its assets. The chart on the left shows the time to recover the beginning asset level after a drawdown assuming steady returns of exactly 6.5% thereafter. The results of a V-shaped recovery, much like those we've experienced in recent years, are better but still leave long-lasting damage as depicted in the chart on the right. It is this exact dynamic that led another client to remark recently that one of the most frustrating facets of markets over the last few years is observing huge equity gains and a flat line in funded status.

Time to Recover – Steady Returns



Source: Bloomberg, as of 12/17/19

Time to Recover – V-Shaped Recovery



Source: Bloomberg, as of 12/17/19

Put simply, the effects of a large portfolio drawdown for institutions required to pay out assets each year can be longer-term than even the institution's long-term horizon. At times, the avoidance of those large drawdowns is a better risk-reward trade-off than the benefits of accreting additional gains. Given current valuations, our cycle view and lingering tail risks, we believe one of those times is now.

Equity volatility

S&P 500 implied volatility levels remain relatively low and "normal," commensurate with recent realized volatility. By "normal" we mean that short dated at-the-money implied volatility is tracking recent historical volatility with a modest premium. For example, three month at-the-money calls have an implied volatility of about 12% while the S&P 500 60-day historical volatility is about 10%. Term structure is upward sloping, such that longer dated at-the-money contracts approach 16%, which is approximately the historical average.

The combination of strong year-to-date equity market performance and subdued realized volatility in the fourth quarter contributes to attractive hedging entry points in current option market pricing. Just as we

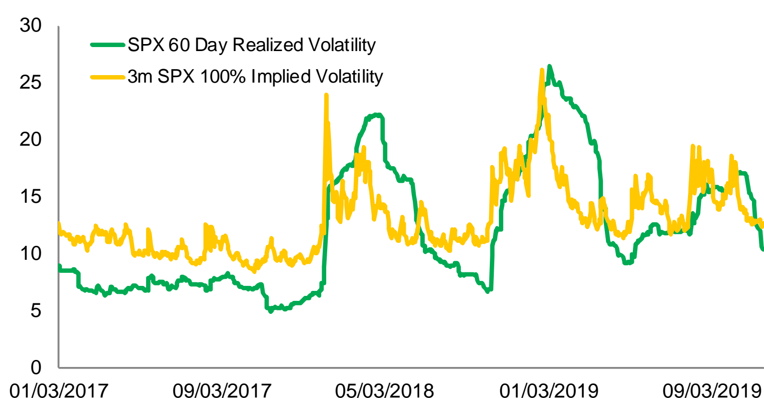
[1] This illustration would be consistent with a portfolio of 60% equity, 40% fixed income with expected returns of ~8% for equity and ~4% for fixed income.

highlighted last month, longer dated skew remains relatively steep. This dynamic favors structures such as put spread collars, which simultaneously buy and sell pairs of option contracts.

Longer-dated option contracts typically allow a plan to structure a more favorable upside versus downside trade-off profile than shorter dated maturities. Additionally, clients frequently consider their hedging plans on a calendar year basis, and therefore we look to one-year structures. Doing so can add protection while maintaining a moderate amount of upside potential.

Dealer commentary has recently noted that, despite the ongoing equity rally, the option market attention was more on short-dated, deep out-of-the-money puts. This seems to reflect client concerns about a repeat of either repo driven liquidity problems or protecting year-to-date risk asset performance. It is understandable that investors may be apprehensive through year-end, especially after the fireworks in 2018. However, by taking a longer-term perspective (by option market standards), we believe clients who wish to hedge their equity exposure can achieve more favorable trade-offs.

Realized vs. Implied Volatility



Source: Bloomberg, as of 12/17/19

Rates market

Rates moved higher over the past month on the back of a tentative US-China trade agreement and a conservative win in the UK elections. Despite seemingly risk-on events, the 30-year Treasury rate has stayed range bound, failing to return to the 2.40 level reached in early November. Going into month end, trade negotiations seemed to stall and US rates traded sideways despite Q3 GDP getting an upward revision and personal consumption data surprising to the upside. The 30-year Treasury rate closed out November at 2.21. The first few days of December proved to be fairly volatile for rates in both directions. A combination of a strong PMI print in the EU coupled with long-end supply helped spur a seven basis point sell off. The selloff would probably have been more extreme if not for a weak ISM print in the US. The Fed also announced they were increasing the size of the next term repo facility as the previous few

US Rate Environment

Index	12/17/2019	1-month ago	3-months ago	1-year ago
Fed Funds Rate	1.75%	1.75%	2.25%	2.25%
2 year	1.62	1.61	1.72	2.73
5 year	1.71	1.65	1.66	2.73
10 year	1.88	1.83	1.80	2.89
30 year	2.31	2.30	2.27	3.14

Source: Bloomberg, as of 12/17/19

30-Year Treasury Rates

Source: Bloomberg, as of 12/17/19

had been oversubscribed. The next day, sentiment quickly reversed course as Commerce Secretary Ross confirmed reports that the December 15th tariffs would be implemented if a trade agreement was not reached and the President said the deal might have to wait for the 2020 elections. The curve bull steepened and the long-end rate rallied to 2.16. However, a Bloomberg report the next day stating that trade talks were progressing and the outlook was positive sent rates higher as the 30-year Treasury rate sold off to 2.23. The selloff continued at the end of the week as the employment report beat expectations with 266k new jobs created compared to the 180k consensus and upward revisions to previous months and the unemployment rate dipped back down to 3.5%.

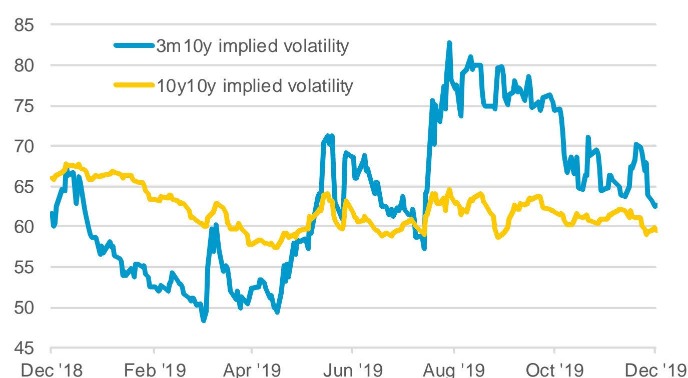
Rates traded sideways until the December FOMC meeting. As expected, the Fed left rates unchanged, but the overall tone of the message sent by the Fed was more dovish than expected. The statement added a mention of "global developments and muted inflation pressures" and the dot plot now shows no rate changes expected in 2020. In the press conference following the meeting Chair Powell stressed that inflation is not going up even with unemployment at record lows. He needs to see higher inflation before the Fed would consider raising rates. Fed speakers have confirmed their agreement with the expectations that rates will stay on hold for the foreseeable future.

One day after the FOMC meeting, it was announced that a Phase One trade agreement with China had been reached, sending the long-end Treasury rate to 2.31, its highest level of the month. The selloff continued overnight as Boris Johnson and the conservative party won a decisive majority in the UK elections, paving the way for a potential Brexit deal to be reached by the January 31 deadline. Some of the exuberance waned later in the day as some trade details (or lack thereof) emerged and uncertainty around the mechanics of implementing the deal began to surface. The 30-year Treasury closed the week at 2.25. After a weekend with no headlines, rates began to drift higher, and the 30-year rate is now back above 2.30. While the Fed intends to stay on hold for now, the market is pricing in a more than 50% chance of further cuts by the end of next year. Going into year-end, the focus will continue to be on any further trade developments and if the Fed's intervention into the repo market will be enough to quell any funding issues as we move into the new year.

Rates volatility

Short dated volatility had a small jump higher as rates sold off the first week of December, but since then they have continued to trend downward, particularly on the left-hand side of the volatility surface. As rates sold off, swap spreads widened, which helped push short dated volatility higher (dealers were short gamma in swaps and hedge by buying gamma on Treasuries on the exchange, but swaps out-delivered Treasuries in the move higher). Volatility dropped sharply in the wake of the December FOMC meeting and the US-China trade agreement. The combination of rates being at relatively low levels, the curve being relatively flat, inflation refusing to go up, recession concerns slowing, and the Fed emphasizing their desire to stay on hold for at least a year all point to lower implied volatility and rates trading range bound. The low volatility expectation is especially pronounced in the upper left where 3m2y volatility has plummeted from 84abpv in October to its current

3M10Y Implied Volatility and 10M10Y Implied Volatility



Source: Citibank, as of 12/17/19

Current Implied Volatility Levels and Change Over One Month

P/TAIL	1Y	CHANGE	2Y	CHANGE	5Y	CHANGE	10Y	CHANGE	30Y	CHANGE
1M	27.1	-20.8	41.1	-18.9	54.8	-12.9	59.6	-7.1	56.9	-6.6
3M	32	-17.2	46	-11.5	59.9	-4.9	62.8	-2.1	60	-2.7
6M	42.1	-11.5	52.7	-8.6	61.9	-2.4	63.7	-1.7	61	-2
1Y	52.7	-8.5	58.3	-6.2	63.5	-2.5	64.4	-2.1	60.6	-2.3
2Y	63.8	-1.1	64.3	-1.1	64.4	-1.6	64	-1.4	59.1	-2.4
3Y	65.3	-0.7	64.7	-1.4	64.6	-1.2	63.6	-1.3	57.8	-2
4Y	65.2	-0.6	64.9	-1	64.6	-0.9	63.2	-1.1	56.8	-1.9
5Y	65.4	-0.8	64.8	-0.8	64.5	-0.7	62.8	-1.1	56.2	-1.9
7Y	63.8	-0.8	63.4	-0.5	63.3	-0.7	61.4	-1.2	54.8	-1.9
10Y	62.2	-1.2	61.8	-1.2	61.6	-1.1	59.5	-1.4	53.1	-1.9

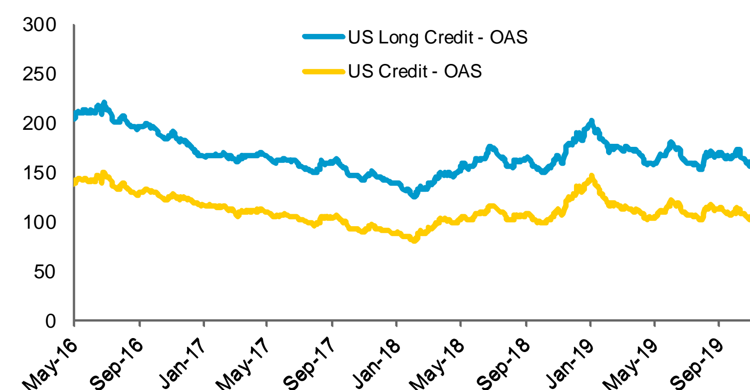
Source: Citibank, as of 12/17/19

level of 46abpv. The upper left is starting to look cheap and some fast money accounts have started selling intermediate expiries on short tails to buy shorter-dated options. In longer-dated vega implied volatility is down 1-2abpv. Dealer callable books have been selling longer dated volatility due to the dvega/drate dynamics in the selloff. Additionally, there is an expectation of a much higher callable redemption rate in 2020 compared to 2019, which would lead to further long-dated callable supply issuance, pushing long-dated volatility down further. These duel effects have been somewhat mitigated by buying of forward volatility structures to take advantage of the inverted volatility surface on 30y tails. Skew has been quiet over the past month. While receivers continue to trade slightly rich to payers, the spread between the relative volatility has essentially remained unchanged.

Credit market

The fourth quarter of 2019 feels quite the opposite to that of 2018. During 4Q18, the US long duration credit market widened 46 bps, whereas bond spreads have tightened 24 bps in 4Q19 thus far. Furthermore, the corporate bond market has continued to rally in conjunction with risk assets over the past month, as spreads have tightened 15 bps on the back of a confluence of macroeconomic and technical catalysts. First, the announcement of a "Phase One" trade deal between the US and China has the market more optimistic on a positive shift in trade policy. In the announcement regarding the agreement, the US Trade Representative (USTR) addressed "intellectual property, technology transfer, agriculture, financial services, and currency and foreign exchange." The announcement also included "a commitment by China that it will make substantial additional purchases of U.S. goods and services in the coming years." Second, uncertainty has been reduced with respect to Brexit as the Conservative majority won the UK election, essentially removing the parliamentary block. The UK will now leave the EU and enter a transition period. Third, the monetary policy outlook was confirmed by the Fed in the latest FOMC meeting, as Fed Chairman Powell communicated that the current policy stance was judged as "appropriate." Fed minutes also indicated that the central bank is unlikely to hike in 2020. It was a unanimous decision to keep rates on

US Credit Spreads



Source: Citibank, as of 12/17/19

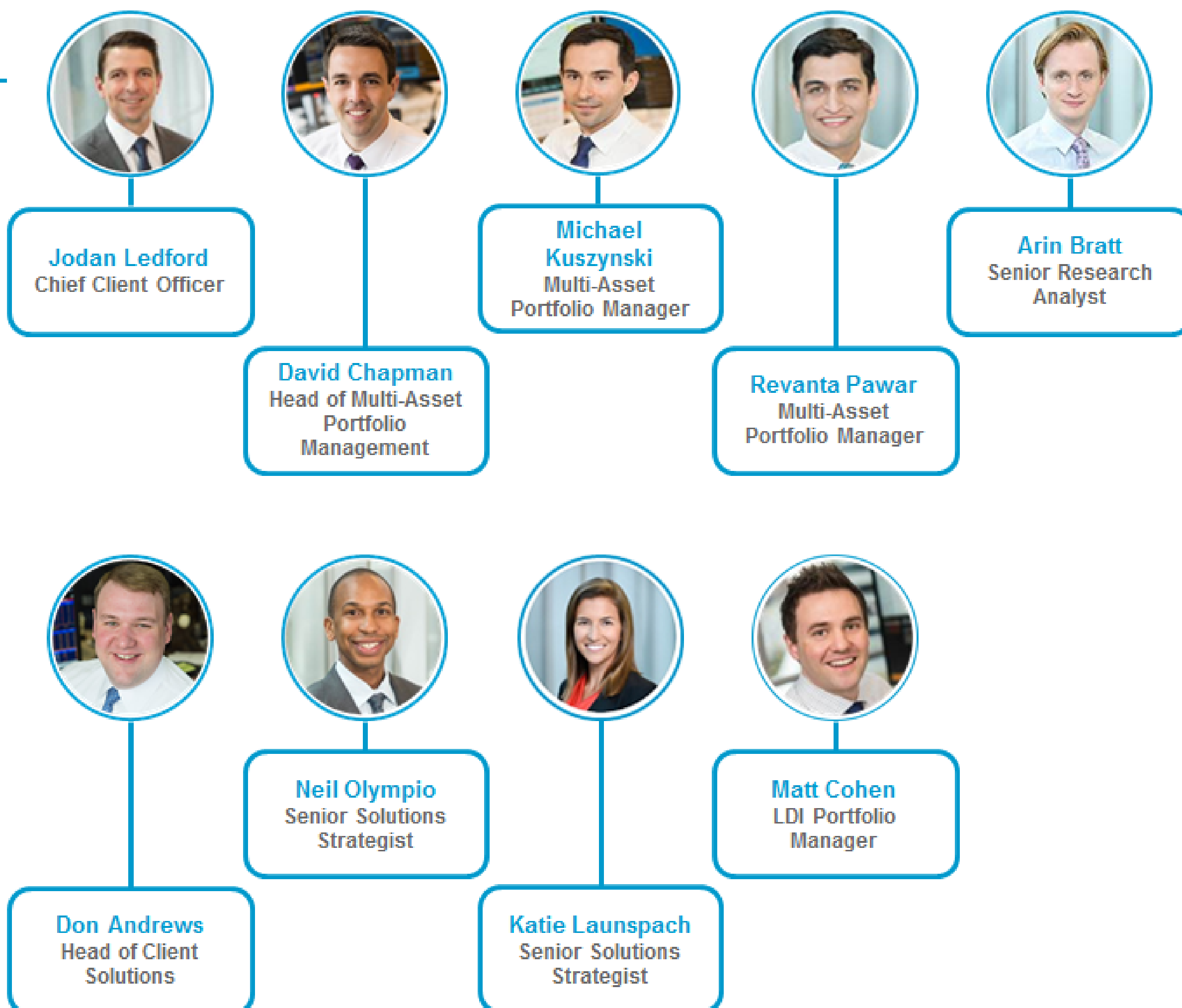
hold, and it would take a significant and persistent overshoot of inflation to resume hikes. Fourth, the solid November non-farm payroll number of 266k has verified the strength of the US economy. Lastly, from a market technical standpoint, investment grade fixed income bond funds and ETFs are hovering near record inflows. Over the last four weeks, the cumulative inflow reached $21.9bn – the highest on record apart from October 2014. Furthermore, the inflows, combined with strong foreign buying and $45 billion of negative net supply in December, have only strengthened the positive supply/demand technicals in the bond market.

Scenario-Based Asset Allocation

Scenario Summaries

Name	Description	Risk Assets	Inflation	Rates	USD	Probability (last month)
Global Recession	• Dominated by fears of imminent recession, US growth below 1%, China faltering and below 5%, Europe in recession • US & UK rates near 0 • Commodities drop, political uncertainty contributes to recession	▼	▼	▼	—	15% (25%)
Slugflation	• Sluggish global growth and manufacturing remains in a mild recession • Forcing continued Fed rate cuts (totalling 100-150bps) • Inflation remains below target • Simmering trade war tensions	▼	▼ / —	▼	—	25% (15%)
Economic Stabilisation (Roadmap)	• US grows around trend • Steady Europe growth and inflation • China stimulus helps stabilize growth given trade war uncertainty • Fed on hold and inflation back to target	▲ / —	▲ / —	—	—	25% (25%)
Global Growth	• US growth strengthens, buoyed by 3 early cuts, strong consumer consumption and no material trade war escalation • China stimulus leads to an overshoot of 6.5%+ • Europe rebounds with EM growth • Other economic data does not point to material overheating	▲	▲	▲	▼ / —	10% (10%)
Rates Rebound Risk Off	• US inflation picks up rapidly, forcing the Fed to hike within the coming 12 months • Global government bond yields rise fuelled by rising rate and future expectations • Equity markets sell off on the back of higher yields	▼	▲	▲	▲	10% (10%)
Trumpilocks	• Growth improves • Inflation does not pick up, so little prospect of central bank hikes and limited response from long-term yields	▲	▼ / —	▲	▼ / —	15% (15%)

Contributors



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