For institutional clients only.

LGIM America

Investment Outlook
The Cost of Credibility

Q4 2022

Macro environment

Jason Shoup
Deputy Head of US Fixed Income

"Volatility and risk premiums are likely to remain elevated until the Fed stops hiking, which means the fourth quarter could be the most challenging of the year."

If there is a silver lining to a difficult third quarter, it is that the Federal Reserve appears to have finally caught up to inflation after being well behind the curve at the beginning of the year. To accomplish this, the Fed has had to raise rates at the fastest pace in 40 years. Yet after the upcoming November hike, it is likely that forecasts will show the Fed is close to the peak in Fed Funds. Increasingly, the Fed's task is not to accelerate the pace of hikes, but to convince markets that it will follow through and not loosen policy prematurely next year. However, as monetary policy enters territory restrictive to economic growth, the disruptions to financial markets and the global impact of the Fed's actions are becoming increasingly apparent.

One issue is that while the Fed has worked to restore its creditability in inflation fighting, other central banks have struggled to keep up. This is most evident in the dollar's continued rise and investors' recent focus on currency risk. As policy rate differentials grow, the currencies of all the Fed's major central bank peers have depreciated this year. While a weaker currency may help improve export competitiveness, it has the opposite effect on inflation control. Consider oil prices: Brent is still more than 30% higher this year in euro

terms, while US prices have almost fully round-tripped.

For foreign governments, the tightening of US monetary policy is reducing policy space while challenging the credibility of their central banks. In recent weeks, China and Japan have intervened in the foreign exchange market in an attempt to halt the decline of their currencies. The problem is that both interventions appear to be inconsistent with the current monetary policy and unsustainable over the medium-term time horizon. The contradictions are most glaring in Japan, where the Bank of Japan continues to pursue yield curve control and thus bears responsibility for the yen's weakness.

It is from this perspective that the current situation in the UK is yet another example of a common global issue. In an environment of already high inflation and tight Fed policy, there is little capacity to pursue policies than can be perceived as inflationary. The volatility in UK markets during the month of September (additional details are highlighted in our LDI section) has culminated in the Bank of England purchasing long-end gilts while simultaneously guiding investors to further rate hikes — actions that are seemingly at odds.

As central banks find it increasingly difficult to follow the Fed's lead, systemic risk appears to be growing along with the possibility of contagion to the US. Clearly, the incredible volatility in gilts over the past month has had a pass-through effect on US and Eurozone yields. Likewise, credit and equity markets away from the UK have been negatively impacted as the spillover has gone beyond government bonds. As a result, US financial conditions are now tighter than at any point this year, with the most recent tightening occurring much more abruptly than the Fed would prefer.

The Fed appears to be in no hurry to pivot after spending so much time this year rebuilding their credibility. For Fed officials, the labor market is still too tight and core inflation remains too far above target, even in a framework that allows for the typical lags in monetary policy. Still, investors and the Fed appear to be nearing agreement for the first time this year on how much more tightening is necessary, with terminal rate estimates settling in at 4.5%. If that proves accurate, the Fed could be done raising rates early next year.

Volatility and risk premiums are likely to remain elevated until the Fed stops hiking, which means the fourth quarter could be the most challenging of the year. However, risk market valuations have begun to more adequately reflect the heightened systemic uncertainties and may appropriately compensate investors if any US recession proves milder and without specific credit concerns, as appears possible. In other words, as the Fed nears the end of its historically rapid rate hike cycle, the outlook for US markets is becoming more balanced.

Pension Solutions Monitor[1]

Chris Wroblewski, CFA
Solutions Strategist

"US pension funding ratios increased over the third quarter of 2022."

Our analysis of market movements impacting US corporate defined benefit pension plan leads us to estimate that pension funding ratios increased over the third quarter of 2022. Based on market movements, the average funding ratio is estimated to have increased from 94.0% to 95.6% during this period.

Equity markets saw a decline over the quarter with Global Equities[2] and the S&P 500 falling 6.7% and 4.9%, respectively. Plan discount rates[3] were estimated to have increased roughly 90 basis points over the quarter with the Treasury component rising 78 basis points and the credit component widening 12 basis points. Plan assets with a traditional "60/40" asset allocation decreased 5.9%. Although assets experienced negative performance, the impact of higher discount rates weighed heavily on liability values, resulting in a 1.6% increase in funding ratios over the third quarter of 2022.

The third quarter saw continued volatility; most notably, in the Treasury market. In the face of escalating inflationary pressures, we saw a significant increase in Treasury yields and continued weakness in the equity market. Despite the negative asset performance, liabilities have fallen due to higher discount rates which has contributed to an increase in funding ratios, especially for plans who have not fully hedged their interest rate risk. We've seen heightened demand for custom hedging strategies as a way to lock in funded status gains or to better manage interest rate risk given the current market dynamics.

The Pension Solutions Monitor assumes a typical liability profile using an approximate duration of 12 years and 60% MSCI AC World Total Gross Index/40% Bloomberg Barclays US Aggregate Index ("60/40") investment strategy, and incorporates data from LGIM America research, ICE indices and Bloomberg.

Pension funded status market summary:

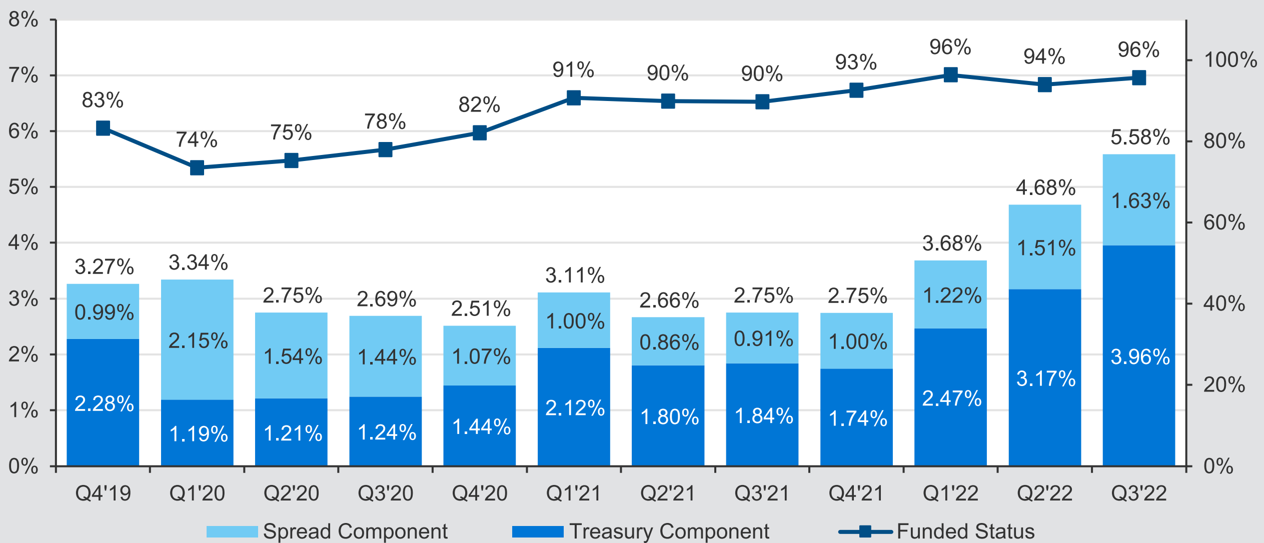
- Equity markets performed poorly with global equities down roughly 6.7%.
- Plan liabilities decreased due to higher discount rates.
- Funding ratio levels increased as falling liability values outweighed the drop on the asset side.

Funded status risk - Q3 2022

Equities	↓
Interest rates	↑
Credit spreads	↑

Sources: LGIM America, ICE indices and Bloomberg. Data as of September 30, 2022.

Figure 1 – Discount rates



Sources: LGIM America, ICE indices and Bloomberg. Data as of September 30, 2022.

Fixed Income

Anthony Woodside, CFA, FRM
Senior Solutions Strategist

"We caution that policy-induced accidents will likely become more commonplace in the coming quarters as markets hunt for a new equilibrium."

Regime change tends to bring about growing pains, particularly when the status quo is upended at breakneck speed. In the aftermath of the financial crisis, global central banks kept the financial system awash with liquidity through the liberal use of zero (and in many cases, negative) interest rate policy and aggressive balance sheet expansion, leaving an indelible impact on the decision-making heuristics of investors along the way. However, the legacy of the pandemic looks posed to not only be remembered for the havoc introduced to the social order, but also for the fracturing of the bond between central banks and market participants. Perhaps no central bank embodies this evolution more effectively than the Fed. After finally backpedaling from its characterization of inflationary pressures as transitory, the Fed's outlook on the impact of required tightening has become progressively more pessimistic – from aspirations of achieving a soft landing in Q1, to hopes of a soft-ish landing in the middle of year, to current expectations that "there are going to be some losses and there are going to be some failures around the global economy as we transition to a higher-interest rate environment, and that's the nature of capitalism."[4] Whereas investors have grown accustomed to the central bank providing a floor for asset prices through the Fed put, we now find ourselves in a new era where policymakers appear focused on imposing a ceiling on valuations if it allows them to sidestep the inflation blunder of the 1970s.

For much of the year, the hostile policy backdrop left investors doubled over in search of a second wind that has yet to materialize. The third quarter was no different as the Fed delivered its third straight 75 basis point hike in September, with the accompanying dot plot pointing to 125 basis points of additional tightening this year and a terminal rate of 4.6% for this cycle. As noted earlier, global central banks have not only joined the fray in taking away the monetary punch bowl, but they have also mirrored the Fed's affinity for jumbo hikes. This synchronized unwind of stimulus has left markets struggling to adjust to this seismic shift in the monetary policy playbook. In rates, US Treasuries resumed their violent sell-off in the third quarter, with 2-year yields increasing 133 basis points to end the quarter above 4.2% (highest in 15 years) while 10- and 30-year yields rose 80 and 59 basis points, respectively.[5] Higher yields have certainly enabled Treasuries to claw back some of its diversification properties, while the deeply inverted yield curve continues to fuel recession worries. Meanwhile, 10-year real yields surged by 100 basis points during the quarter, the fastest increase on record, fortifying headwinds on risky assets (see Figure 2). Investment grade credit also succumbed to the tumultuous backdrop with option-adjusted spreads for market credit and long credit indices hovering around year-to-date highs.

Unsurprisingly, disorderly price action has thrust financial stability concerns into a spotlight previously monopolized by inflation. Outsized moves seen in rates, equities and credit have recently spread to currency markets, where the US dollar has strengthened rapidly against peers. With the new normal becoming increasingly entrenched, investors have weighed in with their feet, fleeing currencies with weaker fundamentals and/or monetary policy regimes that have arrived unfashionably late to the normalization party. Notably, the Bank of Japan intervened in currency markets on September 22nd to prop up the yen as the currency fell to its weakest level versus the dollar since 1998, collapsing over 20% year-to-date.[5] Moreover, as our ending LDI section highlights, the Bank of England was forced into action to stabilize the market after the historic collapse in long-end UK gilts. Alarmingly, deteriorating liquidity has added to the challenging backdrop, with market depth in Treasuries hovering around levels last seen during the peak of the COVID-19 crisis. However, the critical difference between then and now is the Fed came to the rescue by ramping up quantitative easing in 2020, while the central bank is currently accelerating its pace of balance sheet reduction to resolve today's inflation quandary.

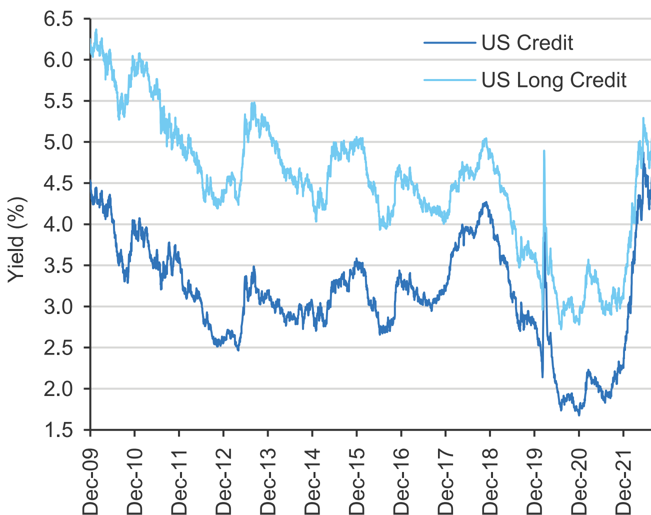
As we enter the fourth quarter, the outlook for investment grade credit has become more complicated considering the rapidly changing landscape. At first glance, there appears to be compelling reasons to finally become constructive on corporate credit after maintaining a defensive stance for over a year. Firstly, valuations have cheapened meaningfully with spreads trading wide of long-term medians and all-in yields currently standing at the highest levels since 2009 (see Figure 3). Additionally, the market has finally caught up to our long-held view that the terminal rate would need to breach the 4% threshold if the Fed is to have any chance at arresting runaway inflation. Lastly, with significant dry powder sitting on the sidelines, risks appear skewed for a near-term bounce. However, the deteriorating technical backdrop emanating

from disorderly unwinds across several asset classes and a base case view that the US economy will fall into recession next year are enough to restrain us from chasing market beta despite improved valuations. At this juncture we are shying away from sizable macro bets with a wide distribution of outcomes, preferring to focus our attention on attractive idiosyncratic opportunities in domestic-oriented credits with positive catalyst to de-lever. With the fall of the old monetary regime occurring at breakneck speed, we caution that policy-induced accidents will likely become more commonplace in the coming quarters as markets hunt for a new equilibrium.

Figure 2 – Real yields surged in Q3, creating a stiff headwind for risky assets

Source: Bloomberg. Data as of September 30, 2022.

Figure 3 – Significant value restored in IG credit



Source: Bloomberg. Data as of September 30, 2022.

Equity Markets

Dave Chapman, CFA
Head of Multi-Asset and LDI

"We are growing concerned about how long equities can withstand the onslaught of higher rates, persistent supply-side limitations and the growing disconnect between earnings estimates and price performance."

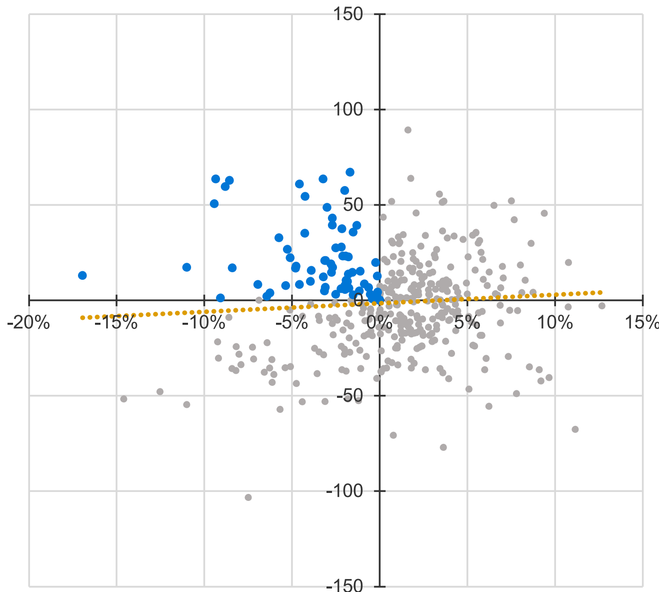
Equity market performance for the third quarter is unsurprising in light of the macro dynamics Jason described in the macro overview section. Globally, equities declined 6.8%, with meaningful regional divergences largely driven by currency effects. The S&P 500 was down nearly 5% compared to over 9% for the MSCI World ex-US Index and 11.6% for the MSCI Emerging Markets Index.[5] Considering the approximately 7% appreciation of the dollar against baskets of either developed or emerging market currencies, non-US equities were surprisingly resilient to the onslaught of volatility and geopolitical and policy surprises.

Unfortunately, we are growing concerned about how long equities can withstand the onslaught of higher rates, persistent supply-side limitations and the growing disconnect between earnings estimates and price performance. We anticipate the start of an earnings downgrade cycle. Year-to-date, the S&P 500 is down nearly 24%, yet earnings estimates are up 6%.[5] While it is typical for earnings revisions to lag market performance, the magnitude of the current divergence is quite unusual. Earlier in the quarter, we also downgraded our outlook for fundamentals and, subsequently, witnessed disappointing earnings across many sectors for companies reporting off-cycle. That being said, we do not expect an earnings recession yet. In our opinion, revenue and earnings growth are likely to stay positive on a year-over-year basis.

Nevertheless, we are considering the potential scenarios for clients if our expectations for a slower decline are disappointed, and we receive a more significant correction. If, in fact, we do enter an earnings recession, our expectations

for further equity declines would still be consistent with the framework we laid out last quarter. What makes this scenario interesting, and possibly even more challenging, is the current environment features a more positive stock-bond equity correlation, yet most institutional portfolios built upon a traditional mean-variance optimization assume a moderately negative one.

Figure 4 – Monthly changes in S&P vs. US 10-year Treasury



Source: Bloomberg. Note the chart shows a slightly positive relationship between equity returns and yield changes; this is equivalent to a modestly negative relationship between equity returns and bond returns given the price and duration relationships to yield changes. Data as of September 30, 2022.

We will have more detailed views on the role of correlation assumptions, horizons and tracking error sensitivity in rebalancing policy in the coming months. For the time being, we will summarize that our concern is focused on the ability of institutions to raise liquidity as needed or otherwise rebalance in the event that equities decline and rates continue to rise. Institutions with the most capital allocated to illiquid, private assets and/or very high duration fixed income portfolios would be the most challenged. Additional details on this are provided in the LDI section.

The good news is that tail hedges may still be viable. Undeniably, implied volatility levels in options markets remain extremely high. However, realized volatility was actually lower in Q3 than Q2, despite the spot price decline, and the implied-to-realized spread is still positive, which may provide room for implied volatilities to decline in the coming weeks and months, thereby offering better entry points. While option premium sticker shock may be more biting in the current environment, truncating outcome distributions and/or providing convex liquidity for stress scenarios could be a worthwhile insurance policy.

Liability Driven Investing (LDI)

Andrew Carter
Head of LDI Solutions

"Global central banks have entered a new regime of action centered on aggressively containing runaway inflation."

The third quarter was quite turbulent in the face of escalating inflationary pressures. Yield movements were relatively benign for the first two months of the quarter, trading in a 0.5% (50 basis points) range. We ended August with yields about 20 basis points higher than at the end of June. However, as we approached September, rates volatility increased and yields rose significantly. The 10- and 30-year Treasury yields ended the quarter roughly 80 basis points and 60 basis points higher, respectively, and are now near 10-year highs.[5]

This move has been very beneficial to the funded status of the average pension plan that has not fully hedged the interest rate sensitivity of their liabilities. Despite the negative performance across asset classes, our previously mentioned Pension Solutions Monitor, which tracks the funded status of a typical US corporate defined benefit pension plan, estimates that funding ratios increased roughly 2% over the third quarter. For those plans utilizing LDI programs, higher rates may be a double-edged sword. The liabilities are falling rapidly due to increases in the discount rate, which results in funded status gains. Said differently, each dollar lost in an LDI investment should be offset by more than a dollar drop in the liability value, improving funded status. However, because leverage is a component of the hedging program, many plans now need to rebalance in order to recapitalize their LDI strategy in the face of higher yields.

Over the last thirty years, and until recently, the correlation between equity and bond returns has been negative, which means that when equities fall, bond prices rise, and vice versa. Based on this relationship, many participants may have anticipated a higher yield regime to be associated with booming economic conditions, and thus, higher equity markets. In this situation, it may be an easy decision to sell equities at higher levels to recapitalize their LDI programs. However, given the change in the macro environment and with equities down on the year, many plans are instead faced with the difficult decision of what assets to sell to replenish their LDI program.

In these conditions, we advocate that plans consider these decisions within the context of a funded status-based framework. After all, contributing capital and maintaining an LDI program is not a balance sheet issue – funded status is either stable or improving in many cases due to the assets losing less value than the liabilities – but it can be a cashflow challenge. If funded status has materially improved, can the plan de-risk out of equities to recapitalize the LDI program? If the plan is overweight equities or credit versus strategic asset allocation targets, then this is where collateral should likely be sourced, even if this means selling at lower levels.

For those plans that wish to retain equity exposure, synthetic equity replication strategies may be an additional option to retain equity exposure while boosting the overall collateral pool.

Given the prevalence of LDI strategies among US pensions and the benefits to those plans of utilizing leverage in the strategy, we believe it is also important to consider recent developments in the UK. A significant move in Treasury yields over a short period of time is not our expectation, but it is not out of the realm of possibility. While it hasn't happened for decades, a 1% or higher move in yields over a short period of time is more feasible in this new regime of high inflation and high rates volatility. We believe that the rapid movement in gilt yields serves as an excellent reminder to have a prudent amount of collateral and plans in place to replenish that collateral in a short period of time.

The current pricing on rates options further illustrates the high level of volatility in the markets. Realized volatility (a measure of how much rates have moved from close-to-close) on a 1-month lookback has reached levels above 8.5 basis point a day, a statistic reminiscent of the financial crisis in 2008-2009 and the COVID-19 outbreak in March of 2020. A combination of persistent decades-high inflation, fears of a looming recession, uncertainty around the Fed's hiking (and potentially future cutting) path, along with global central bank rhetoric that curbing inflation is the top priority has led to implied volatility on rates options (and therefore, the cost of buying rates protection) to rise to the highest levels in the past decade. These high prices are not limited to short dated options, which tend to have the most outsized reactions to realized volatility in the markets. Even options with a 10-year expiration date have reached new highs in the past decade.

It is also important to note that many of the factors that posed challenges for UK pensions as a result of the rapid changes in gilt yields are not features of the US market. UK liabilities tend to have a much higher duration than the US, mainly due to guaranteed Cost of Living Adjustments (COLAs) for inflation, as required by law. The higher duration and need for inflation protection pushes UK pensions into very long-dated nominal gilts, index-linked gilts (UK TIPS) and derivatives, as well as long-dated interest rate swaps and inflation swaps. Thus, the market for long-dated gilts and index-linked gilts has come to be dominated by UK LDI accounts hedging their pension liabilities. Further, the investment grade credit market in the UK is much smaller and less diverse than the US. As such, it is common for British pensions to utilize USD-denominated bonds as part of their LDI program, and then hedge the currency exposure back to the British pound.

As yields moved higher and the pound simultaneously falling against the dollar, the collateral demands grew exponentially. This resulted in an unfortunate feedback loop: sell gilts to raise capital to settle derivative losses, which pushed gilt prices even lower, resulting in even more gilt-based derivative losses. Given the diverse nature of investors at the long-end of the US Treasury market, as well as the significantly shorter duration of US pension plans, this specific illiquidity spiral appears far less likely to occur in the US market.

As ever, we stand ready to help clients work through these difficult times and tough decisions, and we remain diligent at monitoring collateral levels.

1. For illustrative purposes only. LGIM America prepares the Pension Solutions Monitor data assuming a typical liability profile using an approximate duration of 12 years and a traditional 60/40 portfolio of 60% MSCI AC World Total Gross Index/40% Bloomberg US Aggregate Index, incorporating data sourced from LGIM America, ICE, MSCI and Bloomberg. These results are based on simulated or hypothetical assumptions that have certain inherent limitations. Unlike the results in an actual performance record, these results do not represent actual trading. Because these trades have not actually been executed, these results may have under- or over-compensated for the impact, if any, of certain market factors, such as lack of liquidity. Simulated or hypothetical trading programs in general are also subject to the fact that they are designed with the benefit of hindsight. No representation is being made that any account will or is likely to achieve profits or losses similar to these being shown.
2. "Global equities" referred to here is represented by the MSCI AC World Total Gross Index.
3. Discount rates based on a blend of the Intercontinental Exchange Mature US Pension Plan AAA-A and Intercontinental Exchange Retired US Pension Plan AAA-A discount curves.
4. Words of Neil Kashkari, President of the Federal Reserve Bank of Minneapolis, during a talk hosted by Bremer Financial Corporation Kashkari Says Fed Is 'Quite a Ways Away' From Pausing Rate Hikes - Bloomberg.
5. Source: Bloomberg

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