Q3

PGIM QUANTITATIVE SOLUTIONS

June 2023

Q3 2023 OUTLOOK

PGIM Quantitative Solutions Multi-Asset Team

Executive Summary

Economic Outlook

- The global growth outlook for the balance of 2023 appears tenuous. Although a number of major economies entered a “technical recession”[1] during the first quarter of 2023, the residual impact of COVID-related monetary and fiscal stimulus has kept demand robust.
- In the US, the strong labor market has helped the economy weather March’s regional banking crisis and May’s debt ceiling drama. Recent economic strength supports the view that the US could avoid recession. However, recession risks remain beyond the immediate horizon.
- European economies risk the prospect of the winter’s technical recession extending into the rest of the year. Rising interest costs are already weighing on Eurozone consumers, while weaker demand from China is a negative for manufacturing.
- Meanwhile, the Japanese economy received a tailwind in the first half of 2023 from strong consumption and business spending bolstered by the government’s ongoing easing of COVID restrictions.
- China’s eagerly anticipated reopening has been uneven in the first half of 2023. Consumption spending and industrial activity remain weak while the real estate sector, which had previously been an engine for Chinese growth, continues to struggle.
- On the inflation front, expectations are for a significant decline from last year’s levels. Weakening energy prices and more favorable base effects have already driven headline inflation in developed economies notably lower, although core inflation remains elevated.
- At its June meeting the US Federal Reserve (Fed) announced a “hawkish” pause and signaled that it was likely not done hiking rates. Strong underlying price pressures suggest that core inflation will remain elevated, supporting the odds that policy rates will remain high.
- Japan’s relatively slower pace of inflation growth has allowed the Bank of Japan (BoJ) to hold rates low, though new BoJ Governor Ueda announced a monetary policy review that sets the stage for a change in policy.
- With China’s economy struggling to regain its footing in the face of reopening, the People’s Bank of China surprised with a cut in lending rates in mid-June. Additional targeted policy support in the second half of the year is likely.

[1] A “technical recession” is defined as two consecutive quarters of falling real GDP.

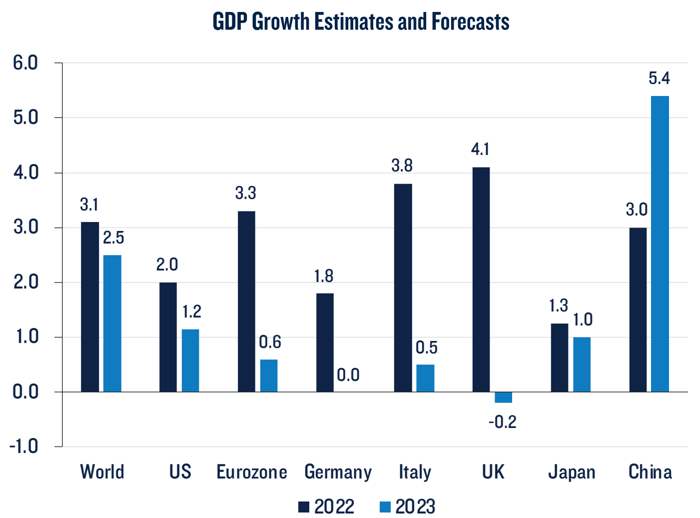
Market Outlook

- Global equity markets led by the US posted strong gains in Q2 as companies exceeded quarterly earnings expectations and communicated stronger outlooks.
- Driven by significant optimism around the prospects for AI, the performance of the S&P 500 year to date has been top-heavy, with mega-cap tech firms accounting for nearly all of the index's gains.
- While the forthcoming end of the Fed hiking cycle, economic resiliency, and optimism about AI’s impact are positives, the mosaic of forward-looking macro and market data is historically consistent with recessions and lackluster risk asset returns.
- A still-hawkish Fed, stricter bank lending, negative business surveys, and high valuations are all reasons to opt for a cautious investment strategy and favor themes like quality and safety.
- Forward PE multiples for US equities are currently at the most expensive decile over a 20-year history. Comparing the equity earnings yield to fixed income real yields, investors are demanding the smallest premium to hold risky equities since 2007.
- With comparable earnings growth and profitability but more attractive valuations than in the US, we find Japan and pockets of Europe relatively more attractive.
- While China’s reopening tailwinds have not materialized and returns have disappointed, renewed support by policymakers in China is a positive. A Fed pause might support emerging market equities, but slower global growth is a negative, especially for exporters.
- The intense investor focus on Commercial Real Estate has subsided a bit, but the problems still remain. Prices from market transactions will likely result in more accurate marks in private asset investor books, which could precipitate further selling and forced deleveraging.
- Commodities have had a difficult first half of 2023. Slower cyclical growth will continue to weigh on industrial metals and energy. Furthermore, China’s lackluster reopening has not provided the tailwinds for commodities that we expected.
- The conflicting outlook between fundamentals and sentiment prevents us from decisively planting a flag in either a bullish or bearish camp at the moment. Therefore, we believe it is appropriate to take only measured active positions in the major asset classes.

Recession Risks Tempered by Still Solid Growth Data

The global growth outlook for the balance of 2023 appears tenuous (Figure 1). Although a number of major economies entered a technical recession during the first quarter of 2023, the residual impact of COVID-related monetary and fiscal stimulus has kept demand robust. In the US, the strong labor market has helped the economy weather March's regional banking crisis and May's debt ceiling drama. Despite the surprisingly positive economic data in the first half of 2023, recession risks in the US remain, although they do not appear on the immediate horizon. Revisions to growth in late 2022 and falling consumer spending in early 2023 contributed to the Eurozone's technical recession over the winter. However, positive revisions to economic data reversed Japan's recession in the second half of 2022. Moreover, the Japanese economy received a tailwind in the first half of 2023 from strong consumption and business spending, bolstered by the government's ongoing easing of COVID restrictions. Surprisingly, China's economy has struggled to regain its footing in the face of reopening, prompting the People's Bank of China (PBOC) to make a surprise cut in lending rates in mid-June.

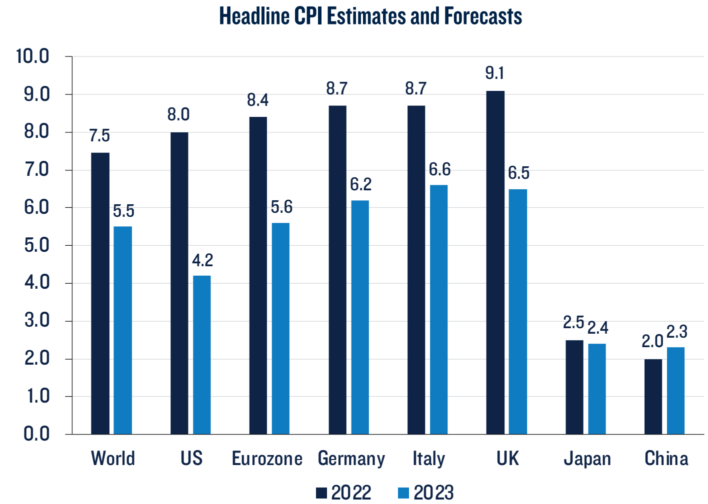
Figure 1: Growth Expectations Remain Weak



Source: Bloomberg as of 6/5/2023

While the PBOC is easing monetary policy, developed central banks remain in tightening mode, although there is light at the end of the tunnel. Helped by weaker energy prices and base effects (as last year's large price increases fall out of the calculation), annual headline inflation is easing across most of the world (Figure 2). As a result, the Federal Reserve (Fed) and the European Central Bank are slowing the pace of rate hikes. At its June meeting the Fed announced what many investors considered a "hawkish" pause and signaled that it was likely not done hiking rates, driving markets to price in a high probability of a July hike. Strong underlying price pressures suggest that core inflation will remain elevated, supporting the odds that policy rates will stay high. Persistent upside surprises to UK inflation have ignited fears about the Bank of England's ability to achieve its price stability target and are likely to force the bank to keep rates elevated for the remainder of 2023. In contrast, Japan's relatively slower pace of inflation growth has allowed the Bank of Japan (BoJ) to hold rates low, though new BoJ Governor Ueda announced a monetary policy review that sets the stage for a change in policy.

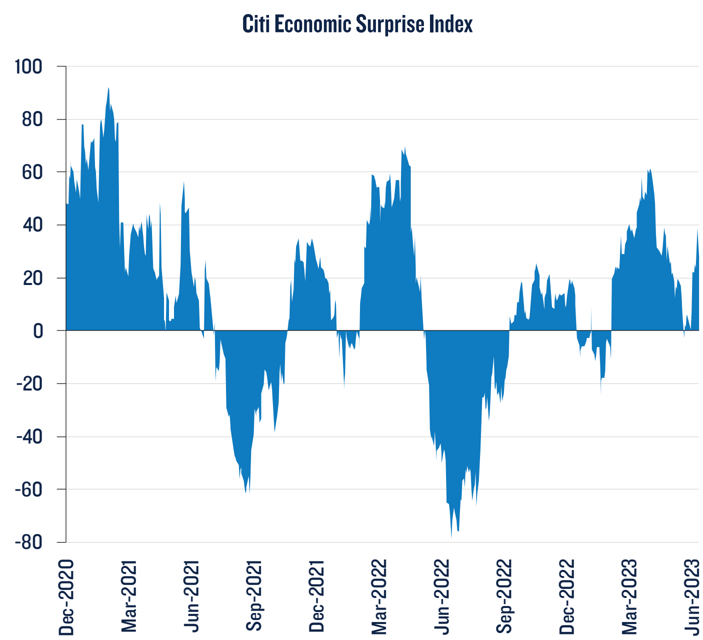
Figure 2: Headline Inflation Easing from Elevated Levels



Source: Bloomberg as of 6/5/2023

While central banks have been singularly focused on reining in inflation since the beginning of 2022, the course of monetary policy going forward depends on the path of the economy. Consensus expectations for 2023 global GDP growth remain roughly unchanged from last quarter. Among developed economies, the US and Japan are expected to post the strongest GDP growth in 2023. US economic data continues to surprise on the upside (Figure 3) despite the shocks from earlier in the year.

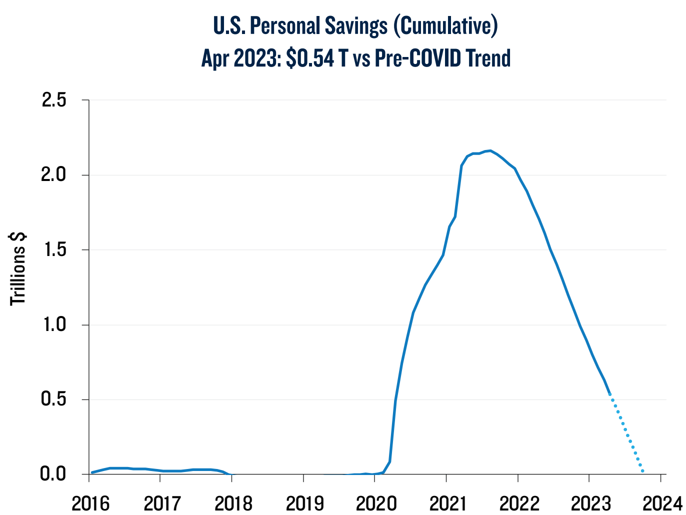
Figure 3: Economic Data Surprised on the Upside in H1 2023



Source: Datastream, Citi as of 6/5/2023

Consumers in the US have remained resilient, helped by the fiscal stimulus and excess savings (Figure 4) built up during the COVID pandemic. As a result, spending has held up well, with low unemployment and increasing payrolls further contributing to consumer strength. However, rising interest rates have constrained investment spending, particularly in the housing sector, keeping the pace of growth below trend. And while banking sector stress has somewhat receded, exposure to commercial real estate loans remains significant, leading banks to pull back on extending credit. Japan is benefiting from low interest rates, the depreciating yen, and the relaxation of the government's COVID restrictions. In contrast, European economies risk the prospect of the winter's technical recession extending into the rest of the year. Rising interest costs are already weighing on Eurozone consumers, while weaker demand from China is a negative for manufacturing.

Figure 4: Excess Savings Level Continues to Support Consumption

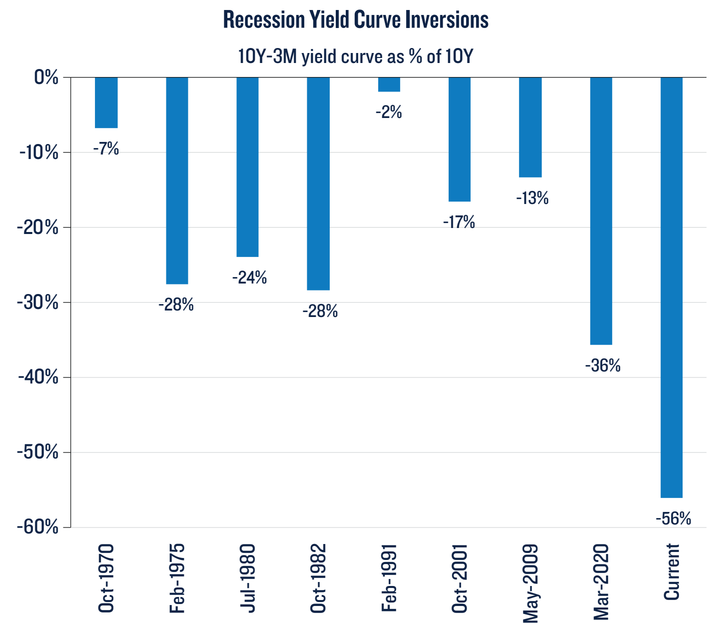


Source: Haver Analytics as of 4/30/2023

On the global inflation front, consensus expectations are for a significant decline from last year's levels. Weakening energy prices and more favorable base effects have already driven headline inflation in developed economies notably lower, although core inflation remains elevated. As a result, expectations are for central banks to slow or end the pace of rate hikes.

While the recent flow of economic data suggests that the US may avoid recession, several indicators still point to heightened recession risks. The Treasury yield curve, across its various definitions, is at a level of inversion not seen in decades. The yield curve tends to invert when bond investors expect the Fed to cut rates in the future, a pattern that often precedes recessions. One measure of the shape of the yield curve that we closely monitor is the spread between the 10-year and 3-month yield. This spread, when normalized by the level of interest rates (Figure 5), is at its deepest inversion in 60 years. Nevertheless, the timing of a potential US recession remains uncertain as the yield curve tends to be a longer-term leading indicator and recent economic data suggests the economy is still on firm footing. The inverted yield curve is one component of the recent downward trend of the Conference Board Leading Economic Index (LEI), a composite measure of 10 economic and financial indicators that helps identify turning points in the US economy. While the LEI has seen a persistently negative trend and is at levels that have coincided with past recessions, the economy has so far weathered a significant correction in residential investment spending, one of the more interest rate sensitive components of GDP that typically declines prior to a recession. And although housing starts data for May rose firmly ahead of expectations, commercial real estate may nevertheless be the next shoe to drop.

Figure 5: Normalized Yield Curve Most Inverted in History



Source: Datastream as of 6/9/2023

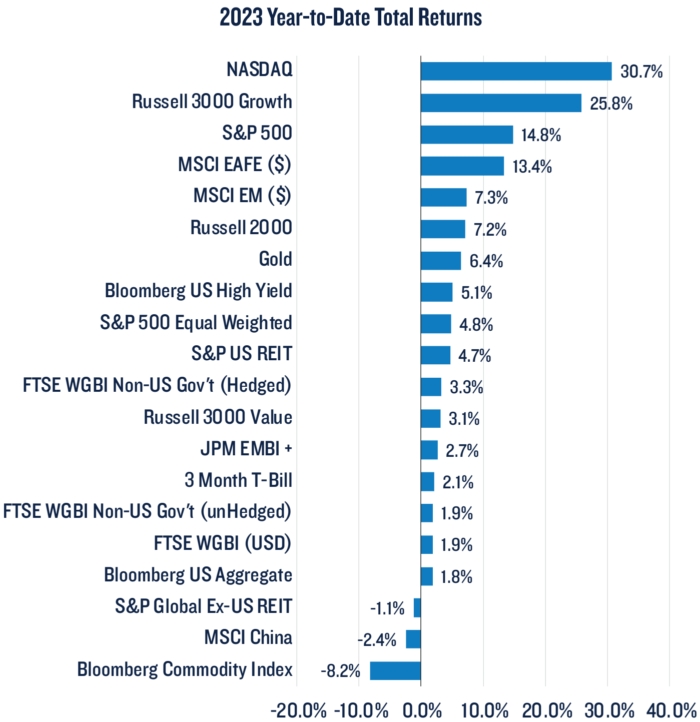
If the US falls into a recession and unemployment spikes higher, the Fed may be forced to cut policy rates even as inflation remains elevated. However, strong underlying price pressures may keep the Fed from cutting rates as significantly as in past recessions. Central banks in other developed markets may follow suit if growth rates in those economies deteriorate.

In emerging markets, China's eagerly anticipated reopening has been uneven in the first half of 2023. While solid Q1 GDP growth sparked hope that China's economic upturn would help put a floor on global growth, disappointing data in Q2 prompted PBOC easing and the possibility of more significant measures to be announced during the July Politburo meeting. Slower global growth could also cast a shadow on major exporters, providing another vector for central bank easing. Meanwhile, the real estate sector, which had previously been an engine for Chinese growth, continues to struggle amid weaker demand following regulations enacted in 2020 to constrain the sector's leverage.

The Hour is Not Yet Darkest, So Why the Dawn?

Markets waited on tenterhooks in early April for first quarter earnings results to roll in. Following disappointing fourth quarter 2022 results and increasingly lackluster revisions, early 2023 felt like a pivotal moment for whether the US economy was on the verge of a recession. However, as Q2 2023 earnings surprised on the upside and companies guided toward stronger outlooks, previously nervous market participants began to sidle up to the idea that risk assets might gain momentum. Indeed, after an unmemorable start, the S&P 500 rocketed from its second quarter lows to end at its highest level in more than a year (as of 6/14/2023). The rally was supported by solid economic data, including strong May retail sales and slowing inflation, but some point to NVIDIA's dazzling earnings report as the match that sparked the flame after the firm projected an exceptionally strong outlook for corporate America's adoption of generative AI. Buoyed by significant optimism around the prospects for AI, the performance of the S&P 500 year to date has been top-heavy, with the mega-cap FAANGM+NT[2] stocks accounting for nearly all of the index's gains.

Figure 6: Risk Assets Post Strong Gains in First Half

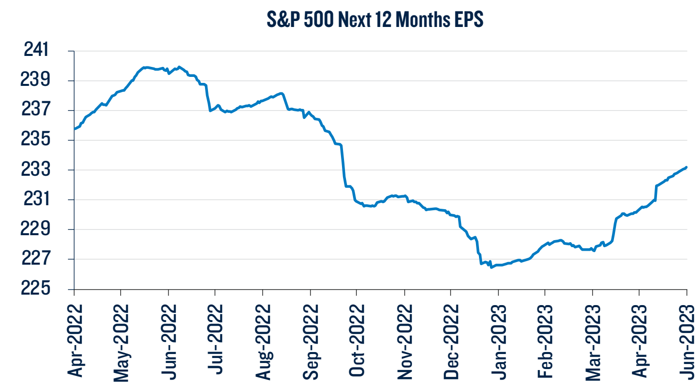


Source: FactSet as of 6/14/2023

The strong gains in risk assets (Figure 6) elicited increasingly divergent views from market analysts. Some pointed to the economic resiliency of "hard data" and the probable end to the Fed's hiking cycle, along with generative AI's impact on productivity and profits of tech firms, as reasons for earnings to rebound. The contrasting view noted the lagged effects of tighter monetary policy working its way through the economy as well as the impact of negative economic "soft data," such as the ISM Manufacturing Index and service sector surveys. From our perspective, comments from the Fed and implied expectations of the Treasury market suggest we are nearing the tail-end of interest rate increases. Along with tightening lending standards and narrowing employment slack, we see a set of classical end-cycle measures that are likely to impart economic consequences: 1. The lagged effects of the drastic interest rate hiking cycle are likely to have material impacts on the real economy, and in turn corporate earnings. 2. The rising cost of capital will impact spending and investment, which we believe is already being felt by the canaries in the coal mine – America's small and mid-sized businesses. 3. Despite the halo effect of AI on the technology sector, many tech firms are heavily dependent on consumer spending and advertising, cyclical areas of the economy that would be sensitive to a slowdown in corporate spending or the labor market.

However, the sustained strength in the economy – as outlined in the economic outlook – has made it difficult to make sense of the market environment. The Fed views the economy and inflation as robust enough to withstand further rate hikes later this year. And despite easing labor shortages, job gains in the US remain exceptional. Although earnings growth was less than stellar, the negative trend has stabilized, and earnings guidance has been positive. Earnings growth expectations for 2023 are close to flat but positive expectations for 2024 have been received well by risk markets (Figure 7).

Figure 7: Earnings Expectations Improving After Declines

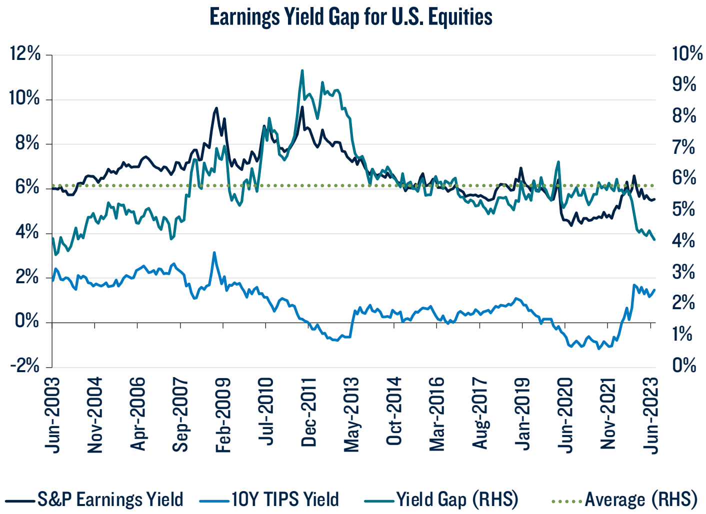


Source: FactSet as of 6/14/2023

In contrast, equity valuations have given us pause, specifically in the US. Although valuations are poor predictors of short-term performance, they are reasonably good predictors of returns over longer periods. Relative to their own history, forward PE multiples in the US are currently at the most expensive decile over a 20-year history. Comparing the equity earnings yield to fixed income real yields, we see that investors are demanding the smallest premium since 2007 to hold risky equities (Figure 8). However, forward PE multiples in Europe and Japan sit at or below their 20-year medians, while China is close to its cheapest quartile. Earnings growth and profitability in the US have demanded higher valuations since before COVID. As long as a growth disparity exists between the US and other regions, we expect the valuation gap to persist as well. However, there is room for disappointment. If companies fail to deliver on upwardly revised earnings expectations, valuation levels could prompt a much greater drawdown in the US than elsewhere. And with comparable earnings growth and profitability to the US, but more attractive starting points for valuations, we find pockets of relatively more attractive opportunities in Europe and Japan. Although tailwinds from China's reopening have not materialized, renewed support by policy makers is a positive. For emerging markets generally, while a Fed pause may be supportive to equities, slower global growth is a negative, especially for exporters.

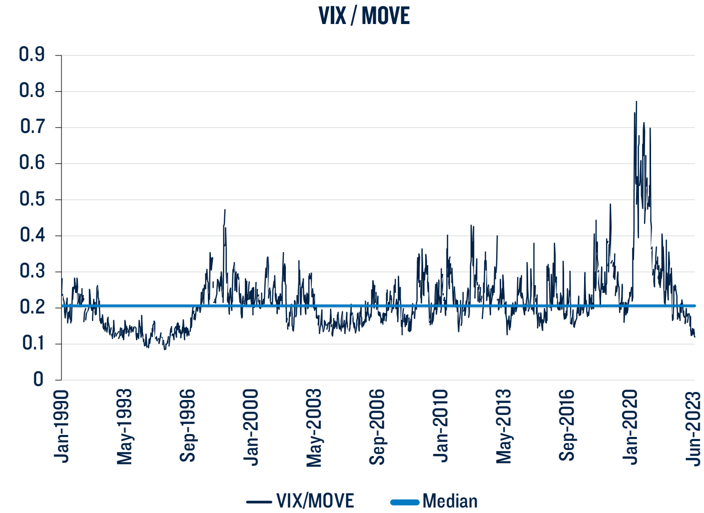
[2] FAANGM+NT is Facebook (Meta), Apple, Amazon, Netflix, Google (Alphabet), Microsoft, NVDIA, and Tesla. Performance through 6/14/2023.

Figure 8: Equity Risk Premium Remains Low



Source: FactSet as of 5/31/2023

Figure 9: Ratio Between VIX and MOVE Reaches Extreme Low Levels



Source: FactSet As of 6/9/2023

Valuation gaps aside, we believe the larger square to circle is the dichotomy between fixed income and equity market volatility. The implied volatility of US Treasury rates, as measured by the MOVE index, has remained historically elevated during much of this year, and even reached Global Financial Crisis (GFC) highs during March's banking crisis. Although it has since moved lower, it still sits at its highest quintile over a 30-year history. The excessive volatility in fixed income markets is likely related to the oversized impact of the Fed's aggressive tightening campaign and the still-uncertain effects. We are increasingly of the view that interest rates will remain higher for longer, but rate volatility is more likely to get a reprieve as we approach the end of the current rate hike cycle. What's even more striking is the level of interest rate volatility compared to the remarkably low level of implied volatility in equities, as measured by the VIX index (Figure 9). The ratio between the two has reached levels not seen in almost 20 years. However, the relative tranquility of equities is likely to come to an end given the still-hawkish Fed and the slower growth environment we expect in coming quarters.

Turning to real estate, while the intense focus on Commercial Real Estate (CRE) that was evident in March has since subsided, the sector's problems still exist. In fact, given our rates-higher-for-longer view, we're surprised that there have not been more indications of trouble. The recent large sales of CRE should begin to provide some much-needed price discovery in this space. Prices from market transactions will likely result in more accurate marks in private asset investor books and could precipitate further selling and forced deleveraging. Small and mid-sized regional banks would also be affected by this turbulence. That said, these potential issues are nowhere near the scale and size of the fissures in the residential real estate market that triggered the GFC and in our opinion do not present a systemic risk.

Commodities have had a difficult first half of 2023. In our last quarterly outlook, we had a less sanguine view due to perceived cyclical headwinds. We believe slower cyclical growth will continue to weigh on industrial metals and energy. Furthermore, China's lackluster reopening has not provided commodities the tailwinds that we expected and has instead added new reasons to remain wary. Despite economic uncertainty, gold may be challenged in the near term. If our higher-for-longer view on rates holds true, increased carrying costs for precious metals will raise the opportunity costs of holding them. And with inflation flattening, precious metals are less attractive as a near-term inflation hedge.

We see the current mosaic of macro and market data as historically consistent with recessions and lackluster risk asset returns. Despite the positive performance of risk assets in the first half of 2023, we err on the side of caution, preferring to wait for evidence that supports the continuation of the risk-on rally. A still-hawkish Fed, stricter bank lending, negative business surveys, and high valuations are all reasons to favor quality and safety. We remain skeptical that markets have somehow skipped the end of the business cycle; markets rarely bottom before a recession. At the same time, sustained economic strength at the end of the cycle could keep investor optimism higher for longer. The conflicting outlook between fundamentals and sentiment prevents us from decisively planting a flag in either a bullish or bearish camp at the moment. Therefore, we believe it is appropriate to take only measured active positions in the major asset classes.

AUTHORS

Manoj Rengarajan, CFA, Portfolio Manager
Peter Vaiciunas, CFA, Portfolio Manager
John Hall, CFA, Portfolio Manager

CONTRIBUTORS

Edward L. Campbell, CFA, Co-Head of Multi Asset and Portfolio Manager
Lorne Johnson, PhD, Head of Multi-Asset Portfolio Design and Portfolio Manager
PGIM Quantitative Solutions Multi-Asset Team

FOR MORE INFORMATION

To learn more about our capabilities, please contact PGIM Quantitative Solutions by email at contactus@pgim.com or by phone in the US at +1 (866) 748-0643 or in the UK at +44 (0) 20-7663-3400.

ABOUT PGIM QUANTITATIVE SOLUTIONS

As the quantitative and multi-asset specialist of PGIM, we combine the agility of an independently run boutique with the stability and scale of a leading global institutional asset manager*. For over 45 years, we have designed proprietary methods that seek to solve beyond alpha by combining the latest technology with scalable, rigorous risk controls to nimbly build and manage diversified and customized solutions that help solve clients' evolving challenges. We manage portfolios across equities, multi asset, liquid alts and retirement for a global client base with $93 billion** in assets under management as of 3/31/2023.

*PGIM is the investment management business of Prudential Financial, Inc. (PFI). PFI is the 11th largest investment manager (out of 444 firms surveyed) in terms of worldwide institutional assets under management based on Pensions & Investments' Top Money Managers list published June 2023. This ranking represents institutional client assets under management by PFI as of December 31, 2022. Participation in the P&I ranking is voluntary and open to managers that have any kind of U.S. institutional tax-exempt AUM. Managers self-report their data via a survey. P&I sends the survey to previously identified managers and to any new managers asking to participate in the survey/ranking. No compensation is required to participate in the ranking.

**AUM totals shown include assets of PGIM Wadhwani LLP, which is a separate legal entity.

SPECIAL RISKS

Foreign investments may be volatile and involve additional expenses and special risks, including currency fluctuations, foreign taxes and political and economic uncertainties. Emerging and developing market investments may be especially volatile. Investments in securities of growth companies may be especially volatile. Due to the recent global economic crisis that caused financial difficulties for many European Union countries, Eurozone investments may be subject to volatility and liquidity issues. Value investing involves the risk that undervalued securities may not appreciate as anticipated. Small and mid-sized company stock is typically more volatile than that of larger, more established businesses, as these stocks tend to be more sensitive to changes in earnings expectations and tend to have lower trading volumes than large-cap securities, creating potential for more erratic price movements. It may take a substantial period of time to realize a gain on an investment in a small or mid-sized company, if any gain is realized at all. Diversification does not guarantee profit or protect against loss.

Emerging markets are countries that are beginning to emerge with increased consumer potential driven by rapid industrial expansion and economic growth. Investing in emerging markets is very risky due to the additional political, economic and currency risks associated with these underdeveloped geographic areas. Fixed-income investments are subject to interest rate risk, and their value will decline as interest rates rise. Unlike other investment vehicles, U.S. government securities and U.S. Treasury bills are backed by the full faith and credit of the U.S. government, are less volatile than equity investments, and provide a guaranteed return of principal at maturity. Treasury Inflation-Protected Securities (TIPS) are inflation-index bonds that may experience greater losses than other fixed income securities with similar durations and are more likely to cause fluctuations in a Portfolio's income distribution. Investing in real estate poses risks related to an individual property, credit risk and interest rate fluctuations. High yield bonds, commonly known as junk bonds, are subject to a high level of credit and market risks. Investing involves risks. Some investments are riskier than others. The investment return and principal value will fluctuate and when sold may be worth more or less than the original cost.