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CURRENCY QUARTERLY

Q2 2023

SUMMARY

Despite surprisingly resilient economic data in Q2, it is increasingly clear that tighter monetary policy is having an impact, and in our view further economic weakness lies ahead. This sets a complex backdrop for global currency markets as US exceptionalism fades, but amidst an environment of broader global economic weakness.

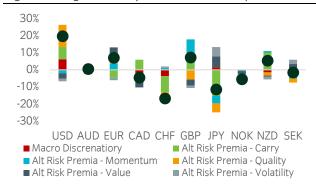
As the world returns to a more normal backdrop for interest rates, we have witnessed a re-emergence of the Momentum and Carry factors as drivers of currency returns. This suggests that the US dollar (USD) may remain expensive for a while yet. However, this is an environment in which idiosyncratic factors could be an important driver of return dispersion. Two currencies are particularly notable in this regard. In the UK, interest rates could reach a level where they shift from being supportive for the British pound (GBP) to a negative. In Japan, and more broadly in Asia, the strength of the US dollar is becoming problematic, and could lead to some pushback from the region's central banks.

In our educational topic this quarter, we look at the medium-term outlook for inflation. Although we agree that there is significant downward momentum to inflation in the short term, the medium-term picture is less clear. If central banks cut too early, they risk the medium-term outlook and raise the probability that inflation remains stubbornly sticky above central bank targets

THE ALPHA VIEW

In our view, a combination of alternative risk premia and macro fundamentals are the key drivers of currencies over short-to-medium-term time horizons. That said, for the moment, we would caution against taking aggressive positions based on macroeconomic fundamentals given the notable crosscurrents. Indeed, we continue to view 2023 as favoring an environment for more tactical and quantitative trading than in 2022. A more definitive turn lower in US core inflation could change this. For the moment, the bulk of our recommended currency exposure for medium-term investors stem from our Alt Risk Premia model. As can be seen in Figure 1, we still hold a long USD bias along with more modest longs in the euro (EUR), GBP, and New Zealand dollar (NZD). Against that, we are short low-yielding currencies such as the Swiss franc (CHF) and Japanese yen (JPY).

Figure 1: Insight Currency Absolute Return Exposure



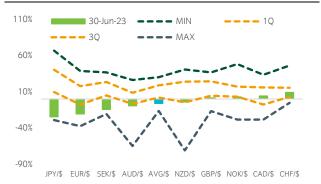
Source: Insight. Data as of July 3, 2023. Note: Black dot shows aggregate position.

LONGER-TERM VALUATION OVERVIEW

As the investment horizon extends to a multi-year window, valuations are likely to dominate the price action in currency markets. The highlights from our long-term valuation model are:

- The USD remains overvalued, but not against all crosses;
- JPY, EUR, and Swedish Krona (SEK) look very cheap by historical standards;
- Australian dollar (AUD) and NZD look only very moderately cheap;
- GBP, Canadian dollar (CAD), and CHF do not look cheap.

Figure 2: Local currency overvaluation (+) and undervaluation (-) versus USD



Source: Insight. Data as of June 30, 2023. Past performance is not indicative of future results.

MACRO OUTLOOK: GROUNDHOG DAY?

One of the remarkable features of the past 18 months remains the resilience of the global economy to aggressive rate hiking cycles and various shocks. The last quarter was no different. Despite significant dislocations in the banking sector, consensus expectations for global growth in 2023 have been revised higher from 2.4% to 2.6% – this was in addition to the 0.3% upward revision made during the previous quarter. The extent of the global economy's resilience is clearly highlighted by the JP Morgan Global Composite Purchasing Managers Index (PMI) shown in Figure 3, which remains at a healthy 52.7 in June 2023 – up from the recent lows of 48.4 in December 2022.

Figure 3: Global Composite PMI¹ (3M Moving Average)



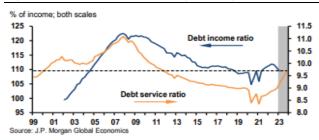
Market price action in the last three months has been equally benign, with implied volatility falling and the MSCI World Index rallying by over 5% – the Nikkei 225 Index and Nasdaq Index have rallied by respectively 19% and 14%². The fact that this has occurred at the same time as a 124bp sell off in the US two-year Treasury yield² and an aggressive rebuild of the US Treasury's cash account (Treasury General Account) following the resolution of the recent debt ceiling scare – something that was feared could lead to a liquidity crunch – is a testament to the importance of growth. This is no different for currencies where, despite the significant repricing of expectations around US rates, the USD was up by just over 1% against all other developed market currencies², a figure that would be much closer to flat if we were to exclude the JPY.

The big question for markets is whether the worst of the economic storm has passed and whether a sustained economic upswing lies ahead. Unfortunately, our sense it that this is not the case, with economic weakness more likely.

One reason for this is that tighter monetary policy is clearly having an impact, although more slowly than expected. There has been a sharp deceleration in credit growth in both the US and the eurozone, and the manufacturing sector is sluggish at best, with the global manufacturing PMI below 50 since August 2022².

However, the service sector, which makes up the lion's share of GDP in developed economies, remains remarkably resilient – the global service PMI was 52.7 in June 2023². Although the service sector has been supported by healthy labor markets, strong wages, falling energy prices and excess savings, the pass through of higher rates to mortgages is a building headwind. The different structures of mortgage markets help to explain the difference in the extent to which central banks have had to be more or less hawkish. For example, the US has had one of the more aggressive rate hiking cycles as the high percentage of long-term fixed rate mortgages means that US consumers have a lower sensitivity to interest rate rises than elsewhere. On the other hand, the Norges Bank has not had to raise rates as much due to the higher percentage of floating rate mortgages. Although the difference in market structure influences the speed of the impact of monetary policy, if rates are held at high levels – as we expect they will – the impact of higher rates will steadily build as people move or fixed mortgage rates are reset. As can be seen in Figure 4, the debt service ratio has further to rise. We expect higher debt serving costs to combine with easing labor markets, a decline in excess savings, and the fading impact of lower energy prices to slow the consumer down.

Figure 4: Household debt servicing, developed markets³



A second reason is that central banks target inflation not growth, and service inflation remains sticky, suggesting it is too early to talk about cutting interest rates. As can be seen in Figure 5, the momentum in US and global core CPI remains significantly above levels considered to be consistent with price stability – we explore this topic in more detail in our educational section later in this publication.

Figure 5: Momentum in Core CPI⁴



³ Source: JPM Daily Econ Briefing: This froggy has legs. 6/22/23.

⁴ Source: Macrobond. Data as of June 14, 2023.

¹ Source: Macrobond. Data of July 6, 2023.

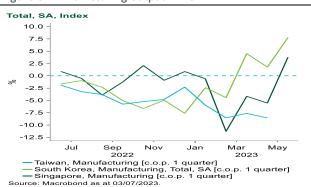
² Source: Bloomberg. Data of June 30, 2023.

Central banks are cognizant that the pace of monetary tightening has been aggressive and are keen to pause to assess the impact of their actions, but a pause does not necessarily indicate the end of the rate cycle. Although there are signs of easing pressure in the form of lower vacancy rates and lower wage growth, especially in the US, it is clear labor markets remain too tight. Indeed, the Bank of Canada, the Reserve Bank of Australia and the Norges Bank are all timely examples of how a pause in the tightening cycle does not necessarily immediately foreshadow the start of an easing cycle, as all three central banks were forced to further hike rates following a pause.

Although this outlook would suggest a stiff headwind for growth sensitive assets, it's worth highlighting that the expected slowdown could well be peppered by temporary windows of optimism. More specifically, good news for markets could come from a few areas and help to mitigate the negative impact of slower growth:

- A further deceleration in the momentum of US core inflation could give markets greater confidence that the peak in Fed Funds rates is in sight. This would be a significant development and signal that growth has sufficiently slowed to bring inflation back to target and give notable support to growth sensitive assets.
- We could start to see a bottoming of manufacturing growth and an easing of growth in services. This would be a more market friendly slowdown as manufacturing tends to have higher productivity than services, for any level of growth, meaning inflationary pressures should ease. Preliminary evidence that the manufacturing sector may be bottoming is starting to surface in 'bell-weather' economies such as South Korea and Singapore (see Figure 6) and in the recent improvement in the global manufacturing orders to inventory ratio.
- The Chinese leadership could announce more measures to support consumption and the housing market. Our sense is that any support is likely to be limited in scope and impact.

Figure 6: Manufacturing output in Asia⁵



All of this suggests to us that growth is very likely to slow in the second half of 2023, but that certain developments such as the more conclusive evidence of decelerating US inflation and a bottoming out of the manufacturing cycle could help to support – or at least dampen – the impact of slower growth on growth sensitive assets, including currencies.

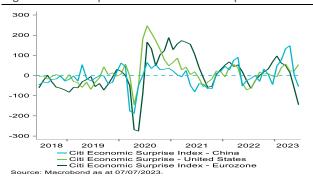
Up to now, we have focused on the outlook for the overall level of global growth, but what is equally important, especially for currencies which are inherently relative assets, is the difference in performance of different countries. There have been a few key themes we are closely watching.

The theme of fading 'US exceptionalism': In the last Currency Quarterly, we mentioned that a prerequisite for a more sustainable decline in the USD is further evidence of a loss of 'US exceptionalism'. Once again, the news has been mixed. Forward looking indicators such as the PMI data continue to point to loss of 'US exceptionalism' (see Figure 7) but data in other parts of the world, namely the eurozone and China, has slowed relative to both expectation and to the US (Figure 8).

Figure 7: 'US exceptionalism': Business Surveys⁶



Figure 8: 'US exceptionalism': Economic Surprises⁶



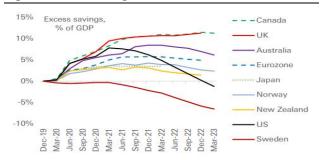
This has been reflected in the underperformance of US Treasuries relative to German bunds over the last few months as well as in the fact that the Fed Funds target rate is the second highest base rate across developed markets – only New Zealand has higher rates. Our sense is that the progress in the loss of 'US exceptionalism' is tied to the underperformance of the Chinese economy and the manufacturing sector – Europe is heavily exposed to both.

⁵ Source: Macrobond. Data as of July 3, 2023.

⁶ Source: Macrobond. Data as of July 7, 2023.

Although a revival in the manufacturing sector is likely to be required for a more forceful revival of theme, it is worth highlighting that US excess savings have been used much more aggressively that elsewhere (Figure 9), suggesting that any weakness in the US labor market is likely to cause a more aggressive slowdown in US growth than other markets.

Figure 9: Excess savings as a % of GDP⁷



Developments in China: As mentioned above, the surprising weakness in Chinese growth has increased speculation of an imminent policy response. Our sense is that the Chinese leadership is likely to announce some targeted measures to support growth, possibly at the upcoming Politburo meeting in late July, but we expect the impact on growth to be limited. The appetite for more significant stimulus is likely to be limited both because of the reluctance to reinflate the housing market and the limited fiscal space particularly at the local government level. Overall Chinese government debt is estimated to be close to 95% of GDP if Local Government Funding Vehicles (LGFV) is included. We therefore expect a modest improvement in Chinese growth in the months to come which is likely to give only limited support to countries with close economic ties such as the eurozone and Australia.

Higher UK rates reach a tipping point: Fears of un-anchored UK inflation have pushed up expectations for further rate hikes, supporting GBP. However, there could become a point where higher rates become a negative rather than a positive for sterling. Interestingly, the correlation between GBP/USD and the relative differential of two-year government yields has recently fallen from a peak of 50% in June 2023 to -76% in early July 2023. Higher UK core inflation both relative to expectations and other developed markets has caused a significant re-adjustment of the expectations for policy. This is adding an element of idiosyncratic risk to the UK economy. Indications from the Bank of England is that rates will be hiked as needed, but the lack of a clear peak in inflation is making markets nervous.

All in all, our sense is that growth will ease further in the months to come, and that monetary policy will need to remain tight to ensure inflation will return to levels consistent with price stability. That

said, developments in US inflation, the broader manufacturing sectors, as well as idiosyncratic developments in both China and the UK, will need to be monitored closely. Of these factors, evidence of more persistent disinflation in the US is likely to meaningfully reduce the impact of a deteriorating global outlook on growth sensitive assets.

MACRO IMPLICATIONS FOR CURRENCIES

Perhaps not surprisingly, a combination of a healthier than expected global backdrop and an aggressive upward repricing in US rates has resulted in a higher than usual dispersion in currency performance. This is clearly seen in Figures 10 and 11 which shows the dispersion of rolling three-month returns across developed market currencies versus the USD having reached the highest level of the last 12 months and the broad correlation with the USD having fallen sharply. Both developments suggest an increase in crosscurrents and greater idiosyncratic risk that we believe will persist.

Figure 10: Dispersion in 3M returns across DM currencies⁸

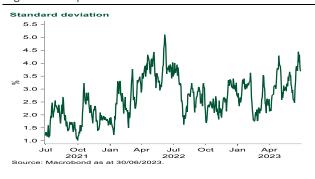
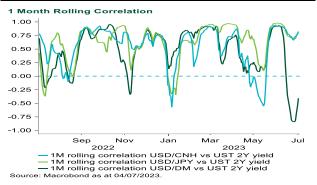


Figure 11: Importance of rates for currencies9



When thinking about the outlook for the US dollar, the current choppy price action is likely to continue. Yes, the USD is expensive (Figure 12) and we expect the theme of USD exceptionalism to fade, but carry is very attractive as US rates are among the highest in developed markets and global growth is likely to slow.

⁷ Deutsche Bank FX Blog: Scarce excess savings, 6/27/23.

⁸ Source: Macrobond. Data as of June 30, 2023.

⁹ Source: Macrobond. Data as of July 4, 2023.

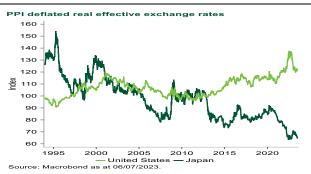
Figure 12: USD valuations (negative figures signal overvaluation)¹⁰



That said, our sense is that the USD will struggle to rally much against crosses like the EUR, AUD and CAD as softer growth will go hand in hand with less inflationary pressures and hopes of a peak in US rates.

Two USD crosses stand out as having had a different dynamic: the JPY and the Chinese yuan (CNH). These two have been the most sensitive to the market's repricing of Fed expectations. This relationship is understandable given the dovishness of both central banks and the healthy carry available to the investors willing to short them. Looking ahead, we expect even these relatively clean trends will be frustrated as both Japanese and Chinese officials have started to indicate their discomfort with the extent of the weakness the currencies. The weakness in the yen is especially notable (see Figure 13).

Figure 13: The yen has weakened significantly in real terms¹¹



This increases the probability of policy action to stem USD strength. This policy action could take different form: Japanese officials could directly intervene in the FX space – especially if USD/JPY rises meaningfully above 145 – or change the BoJ monetary policy setting, as they did in Q4 2022, while Chinese officials could more aggressively enforce a Counter Cyclical Factor (CCF) and possibly increase in the Reserve Requirement Ratio (RRR) for foreign exchange transactions, as they have done in the past. Action by the Japanese and Chinese authorities might not lead to meaningful support for either currency, but it could bring about choppier, and range bound price action. Only a clearer signal of

monetary policy tightening could help to give the JPY and CNH some support and we don't expect this to happen in either case in the foreseeable future.

THE RISE OF MOMENTUM AND CARRY FACTORS

In the previous sections we spoke about the notable cross currents leading to a challenging macro environment, but it is worth highlighting that several interesting developments have taken place in the quantitative sphere as well. To explore these themes, we use Insight's quantitative Currency Engine, which is a risk premia factor-based, full-cycle model focused on offering consistent exposure to structural factors and providing reliable and repeatable performance that is lowly correlated with traditional asset classes. Some of our risk premia (such as Momentum, Value and Volatility) target inefficiencies related to currency market participant behavior, while others are either procyclical (Carry) or defensive (Flight to Safety, part of Quality) and rely on structural and well-established behavior in currency markets reflecting global risk aversion dynamics.

Momentum and Carry have re-emerged as drivers of currency returns

Figure 14: Insight's Alt Risk Premia information ratio by Factor¹²



This is interesting as both factors lagged significantly in the post global financial crisis (GFC) world of zero interest rates. One of the key questions facing investors is if this trend is likely to fade or if the improvement is more structural. While momentum and carry strategies have performed well and some pullback in their performance is certainly possible, our sense is that their revival is more structural and is tied to the return to a more 'normal' environment of higher and more volatile interest rates.

 In the case of carry, the improvement in performance is likely to be tied to the rise in the spread between lower and yielding currencies – this spread currently stands at the highest level since the GFC (Figure 15 and 16).

¹⁰ Source: Insight. Data as of June 30, 2023.

¹¹ Source: Macrobond. Data as of July 6, 2023.

¹² Source: Insight, Data from January 2008 to June 2023.

Figure 15: Max yield differential in DM currencies¹³

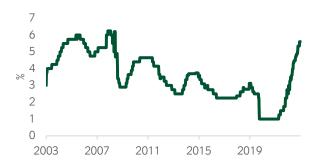
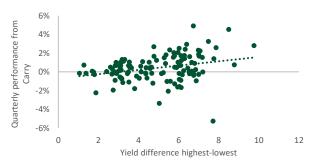


Figure 16: Yield spread and return from Carry factor (DM)¹³



 For momentum, the story is different, and the improved performance is likely to be linked to the higher level of interest rate volatility. As shown in Figures 17 and 18, almost all positive performance in our Momentum factor occurs when interest rate volatility is above a minimum threshold.

Figure 17: Annualized yield volatility¹³

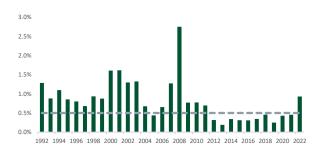
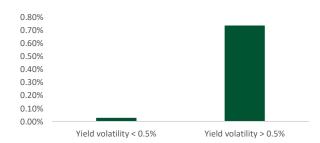


Figure 18: Momentum returns in yield volatility regimes¹³



If the current level of interest rate divergence lasts, we believe carry strategies are likely to continue to perform. On the other hand, if the volatility in interest rates subside and central banks maintain the current 'higher for longer' mantra, momentum strategies might have a harder time. Against this backdrop, we believe that a well-diversified set of currency drivers, rather than single factor strategy, will put active currency investors in the best position to take advantage of evolving market conditions.

Beyond the rise of momentum and carry, something else stands out as being interesting about 2023, namely the fact that the strong performance of the Carry and Momentum factors has happened alongside strong performance by the Volatility factor.

The three-pronged driver of currency behavior being carry, momentum and volatility is highly unusual. The last six months is the first time this combination of drivers has occurred in our entire dataset dating back to 1992. It makes for a challenging environment for traditional currency management. This is likely to be linked with the higher degree of economic and broader market volatility and highlights how strategies that are predominantly mean reverting in nature can perform along with others that are momentum driven.

HOW TO POSITION IN THE CURRENCY SPACE

For those with a medium-term view, we would caution against taking aggressive positions based on macroeconomic fundamentals given the crosscurrents mentioned above. Indeed, we continue to view 2023 as favoring an environment for more tactical trading than in 2022. As such, the bulk of our recommended currency exposure stem from our Alt Risk Premia model. As can be seen earlier in Figure 1, we still hold a long USD bias along with more modest longs in EUR, GBP, and NZD. Against that, we are short low-yielding currencies such as the CHF and JPY.

For less agile longer-term investors whose investment decisions lean more heavily on valuation metrics, the current levels of extreme exchange rates, as seen earlier in Figures 2 and 12, respectively, should, in our view, represent good opportunities to start to fade the strength in the USD, particularly versus currencies like the JPY, EUR, and SEK which look particularly cheap. Interestingly, currencies like the AUD offer less attractive valuations and GBP is roughly at fair value, suggesting a more mixed longer-term outlook.

TRADERS CORNER: EPISODE 8: I, ROBOT

Richard Purssell, Head of Currency Trading

I thought I would be 'on trend' for a change and write a piece on Foreign Exchange automation and what easier way to do this than ask my new friend ChatGPT to do it for me. This is all very cutting edge for a trading 'veteran' but nevertheless, I managed to create

¹³ Source: Insight, Data from January 1992 to June 2023.

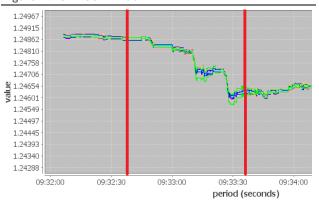
an account and asked it for a humorous article on this topic which, impressively, was delivered in just over 30 seconds. Well, Chat regales us of tales of the lovestruck algorithm, created accidentally by a programmer, that falls head over heels in love with a particular currency pair. Every time the pair moved, the algorithm would swoon and place trades without considering any other factors. A lovestruck algorithm that is more concerned with candlestick hearts than profitable trades. It sounds more Walt Disney than Isaac Asimov so, hopefully, my role writing pieces for the FX Quarterly is secure for a while longer.

Trading automation remains very topical, and the trend has accelerated following the recent pandemic. I have been convinced for some time now that an FX execution algorithm, if used enough times by the same trader, could eventually learn how that individual reacts to changing market dynamics and replicate this behavior by adjusting its own parameters in flight. Furthermore, Transaction Cost Analysis (TCA) has evolved to such an extent that the impact of these adjustments could be measured, and the best 'cyborg' algorithm identified for each currency pair. When I joined Pareto Partners, subsequently Insight, 25 years ago they had already coded up the Chief Investment Officer's brain into a decision-making model for fixed income investment. As Asimov said, "today's science fiction is tomorrow's science fact".

Back in the real world, Insight is working with our partners at FlexTrade and BestX to increase the automation of low-touch FX execution and free up our experienced traders to focus on the client flow that would benefit the most. The key is to combine human knowledge and experience with extensive data to create trading rules that build on and improve on our current outcomes. One example would be the placing of orders at the WMR 4pm benchmark where you could create a rule that selects the available bank with the best price in the currency pair. This approach fails to consider numerous other factors such as netting opportunities, quality of forward pricing and which banks have the lowest market impact between order placement and fill. A smarter set of rules would hold the orders to maximize the chances of a net and then query both the TCA database and fee schedule to determine the likely best outcome for each order.

The automation of price requests brings with it additional challenges as you need to identify the optimal counterparty panel for specific currency pairs and trade sizes. Insight has opted into the BestX client database which allows us to use their Par-Adjusted Win Ratio metrics to identify suitable banks based on the broader trading universe. At the most extreme, you need to avoid the signalling risk created by asking prices from banks that are unlikely to win the quote or from holding out the request for too long, as demonstrated below:

Figure 19: GBP/USD Value14



I suspect the trade size in question was significant and that the client has asked their full panel to price but the TCA is unlikely to look poor unless they are factoring in the implementation shortfall which would show a substantial opportunity cost. Insight was an early signatory to the FX Global Code, and we need to ensure that any automation preserves our market reputation. The last thing we want is to be subjected to the market making equivalent of counting traffic lights or fire hydrants before our trades are accepted.

FlexTrade are working on including the BestX Expected Cost model in their trade automation workflow which introduces another parameter that we can incorporate in our rules. The intention is to start with smaller trades and take an iterative approach. The system could be coded to hold a trade for a defined period to search for a netting, request a price from the banks most likely to win, and then execute within seconds providing the spread is less than the BestX expected cost. The winning and losing quotes would be fed back into BestX to enhance the Par-Adjusted Win Ratio statistics with banks encouraged to price tightly in those currencies where they have an edge in order to remain on the system selected panel.

What we are trying to achieve is a blend of human experience with new technology to ensure that we deliver ever improving outcomes without compromising our reputation or damaging the FX ecosystem. Come on Chat, put the kettle on.

¹⁴ Source: Royal Bank of Canada, as of June 2023.

WHY INSIGHT FOR CURRENCY SOLUTIONS?

Full scale currency solution provider with extensive experience in currency markets. Insight has a proven track record for delivering both quantitative (since 1991) and discretionary solutions (since 2005). We offer a broad spectrum of currency capabilities ranging from passive hedging, dynamic hedging, to unconstrained quantitative and discretionary alpha strategies. Our modular approach allows for fully customized solutions to meet specific client objectives.

Experienced and highly regarded currency team. The investment team is well-established and has an average experience of 18 years. Our dedicated client relationship team will

work in partnership with you and our local offices offer client service, quantitative research and product specialist/solution design capabilities.

Best execution and efficient trading. Insight's dedicated and experienced currency trading team can provide access to multiple sources of liquidity to ensure competitive pricing. Insight is an independent transaction cost analysis (TCA) provider, utilizing technology and analytics through BestX.

Proven and scalable technology infrastructure. We have the flexibility to implement highly tailored client solutions with risk control at each step of the process.

EDUCATION CENTER



Why central banks may struggle to solve the inflation puzzle

Over the months ahead, headlines are likely to focus on moderating rates of inflation and growing hopes that central banks can start to ease policy. Although we agree that there is significant downward momentum to inflation in the short term, the medium-term picture is less clear. If central banks cut too early, they risk the medium-term outlook and raise the probability that inflation remains stubbornly sticky above central bank targets. In our view:

- Service sector inflation is more complicated and tends to be more persistent, so there is good news from energy prices, but tight labor markets suggest wages will remain a problem
- There is still an open question about inflation persistence, as inflation expectations remain anchored for now, but sticky inflation remains a problem
- If growth meaningfully weakens, central banks will be faced with a dilemma, as early cuts may prolong inflationary pressures
- Longer-term inflationary pressures are building, and may make it more difficult to bring inflation back to target on a sustained basis
- Ultimately, if inflation proves to be structurally sticky and economic activity meaningfully weakens, there is a risk that pressure will grow to raise inflation targets



Insight Investment

200 Park Avenue, 7th Floor New York, NY 10166 212-527-1800

Client Relationship Management

institutionalna@insightinvestment.com

Consultant Relationship Management

consultantsna@insightinvestment.com



@InsightInvestUS



company/insight-investment-north-america



www.insightinvestment.com

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