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Investment Institute *Macroeconomics*

Will humble and nimble Fed policy avoid recession?

The outlook for US rates, the Fed's balance sheet and the economy

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Key points

- Inflation is too high and looks set to remain so throughout 2022. The Federal Reserve has embarked on a swift policy tightening to quell domestic pressures
- The US has achieved few soft landings. It will be difficult again this time given the significant structural uncertainties in the post-pandemic economy
- The Fed's own policy implementation faces additional uncertainties. The impact of policy depends on the tightening in financial conditions and this relationship is complex. Conditions have tightened beyond thresholds that have historically seen the Fed relent in previous tightening phases. Going forwards the Fed will be torn between slowing activity sufficiently to rein in inflation and the risk of tipping the economy into recession
- The Fed's balance sheet unwind – quantitative tightening (QT) – adds additional uncertainty. This is both through uncertainty over the impact of QT and large amounts of overnight reverse repo holdings
- On balance, we think the US can still avoid recession over the next 12 months, but this likely depends on the Fed's cycle ending before markets currently expect (at 3.25%) and conditions not tightening further on other developments.

Fed policy tightening – but how much is enough?

Expectations for Federal Reserve (Fed) tightening have surged this year. At the end of 2021 markets expected the Fed Funds Rate (FFR) to close 2022 at around 0.75% – they currently expect a rate over 3.50% and consider a peak around 4.00% next year. In the latest Fed meeting, the FOMC raised its outlook for FFR to a median 3.4% by end 2022 (from 0.9% in December) and 3.8% in 2023 (from 1.6%). Yet Fed Chair Powell only described the 3.8% projection as "in the range of plausible numbers" that will be required to restore price stability.

In this paper, we consider why there is always uncertainty as to how much policy tightening will be sufficient, but that this cycle is more difficult given exogenous developments including the ongoing structural effects of the pandemic and the war in Ukraine. But we also explain how the Fed's own tools – its quantitative tightening (QT) programme – adds significant uncertainty at this stage.

Finally, we argue that economic activity is likely to slow materially across 2022. With quarterly annualised growth recording three quarters in excess of 6% in 2021 this was always likely to be the case, but we expect an average annualised quarterly pace of just over 1% this year. With such a slowdown in progress many have begun to consider whether this slowdown will culminate in a US recession. We review our recession models and suggest that while there is a clear risk of recession, it is not our central forecast for the coming 12 months. However, we review some risks that may leave the economy more vulnerable in 2024.

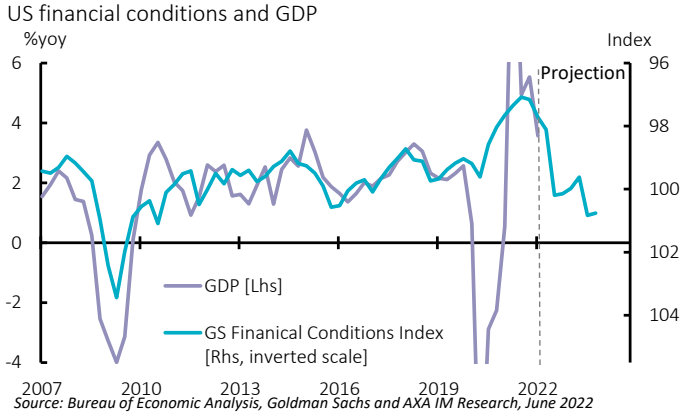
Financial conditions key to policy tightening

The Fed faces an inflation rate which is far too high. Although we expect inflation to have peaked at 8.6% in May, any easing over the coming months is likely to be modest and would be at risk from further increases in energy prices. Much of this inflation has been due to external factors beyond the Fed's control, including supply chain disruptions, not least from China's latest COVID-19 outbreak, and the significant disruption to energy and other raw materials supply resulting from the war in Ukraine. While the Fed may no longer use the term "transitory" it will still be expecting these pressures to fade unless new or additional shocks emerge.

The tightness of the domestic labour market is likely to be more of a long-term concern for the Fed. Unemployment has fallen back to close to the pre-pandemic low of 3.5%. However, with the economy likely undergoing structural realignment after the pandemic, the natural rate of unemployment[1] should be considered to have risen. This would mean that the labour market is even tighter than it was pre-pandemic, consistent with current elevated vacancy rates and strong rates of pay growth.

To ease the tightness of the labour market, the Fed needs to slow the pace of economic growth below its trend rate. To make this happen it will use its policy tools, but as Exhibit 1 illustrates, the impact on GDP growth is effective through the broader impact on financial conditions[2].

Exhibit 1: Financial conditions guide GDP growth



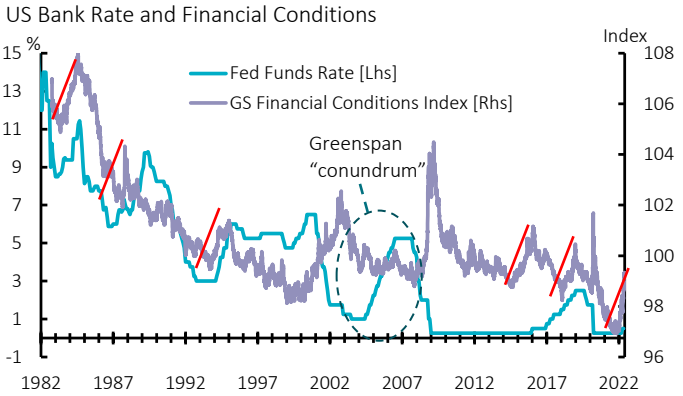
Source: Bureau of Economic Analysis, Goldman Sachs and AXA IM Research, June 2022

However, Exhibit 2 shows that the Fed's influence on financial conditions is not straightforward. Broadly speaking, increases in the FFR have historically tightened financial conditions, an effect that can be seen in the rate hike cycles of the 1980s and early 1990s. However, the chart also provides some examples of non-standard reactions.

In the early 2000s, the Fed raised the FFR sharply from 1.00% to 5.25%. Amid this tightening, then Fed Chair Alan Greenspan presented a "conundrum" to Congressional hearings – the Fed was tightening, but longer-term bond yields were not rising, and financial conditions were barely changed. This and the apparent resolution of this conundrum in the subsequent years of the 2008 global financial crisis can be clearly seen.

Yet sometimes financial conditions act the other way. In 2015, the Fed was keen to start a moderate tightening cycle and hiked in December 2015. However, financial conditions had tightened so much in anticipation of this lift-off, with excess reserves from the quantitative easing (QE) programme frozen and shrinking in proportional terms, that the Fed only managed one hike in 12 months. It was finally able to carry out a more standard rate hike cycle as conditions eased from mid-2016.

Exhibit 2: Financial conditions and the Fed Funds Rate



Source: Federal Reserve Board (FRB), Goldman Sachs and AXA IM Research, June 2022

To judge the scale of appropriate monetary tightening we need to first determine how far the Fed will want to tighten financial conditions. Exhibit 1 suggests that for the Fed to deliver a sufficient economic slowdown to ease present labour market tightness, it would have to consider tightening financial conditions materially (over 100 on the index illustrated).

Exhibit 2 highlights the tightening in financial conditions that resulted in the Fed pausing its tightening cycle from December 2015 to December 2016 with a red line. We replicate that exact movement in other red lines, showing that this exact adjustment in financial conditions has been consistent with the Fed shifting (pausing or outright reversing) policy tightening throughout the last 40 years (1983, 1987, 1994 and 2018). Historically this has been the market pain threshold that has led to the Fed pulling back from the brink. We also note that where conditions have tightened by much more than that, the economy has subsequently fallen into recession (in 2001 and 2008)

[1] The natural rate of unemployment, or non-accelerating inflation rate of unemployment (NAIRU) is the lowest unemployment rate that can be sustained without causing inflation to rise. Like the natural rate of interest (r*) it is more theoretic concept than observed variable.

[2] There are several measures of financial conditions. We use the Goldman Sachs index which was created while William Dudley was the Goldman Sachs US Chief Economist. Dudley went on to become President of the New York Fed, where we assumed that he would have followed his old metric.

The challenge for the Fed is that the level of tightening that appears necessary to slow the economy sufficiently now appears greater than the Fed's historic market pain tolerance. If conditions tighten by much more than the Fed's historic tolerance, the economy could go beyond a tipping point which results in a faster collapse of activity, that is, recession. However, the question is how much the Fed will want to test this threshold. This is even more relevant now as conditions have tightened abruptly following recent inflation news and the Fed's June meeting and currently suggest a tightening in excess of their traditional reversal point.

Then, we must determine what a given monetary tightening will do to financial conditions. While we may anticipate the impact of a higher Fed Funds Rate on term Treasury yields, the impact on risk assets – credit spreads and equity – and the dollar is each subject to error margins and influenced by broader developments and market sentiment.

Our models suggest a rise in the FFR to 2.5% (with 10-year US Treasuries also around this level[3]) would be consistent with a rise in financial conditions to average 99.5 over the coming years, with an expectation that conditions would continue to tighten as policy rate increases are passed through.

Intuitively, this is consistent with recently-observed market behaviour. Financial conditions have already tightened to around the pain threshold as markets have actively considered the policy rate being tightened in excess of this level. This occurred in May with both short-term and long-term yields suggested markets considered the Fed cycle peaking at 3.25%, and more recently.

The Fed is thus part of an endogenous process, both influenced by, and influencing, broader financial markets to implement policy. Exogenous developments will also play an uncertain further role in shaping broader conditions, including developments of the war in Ukraine, COVID-19 developments in China and beyond and other unforeseen events. However, we think that for now, the Fed would want to tighten conditions only marginally more than its historic pain threshold – this underpins our expectation for the Fed to stop tightening policy at the end of this year, having reached 3.25%.

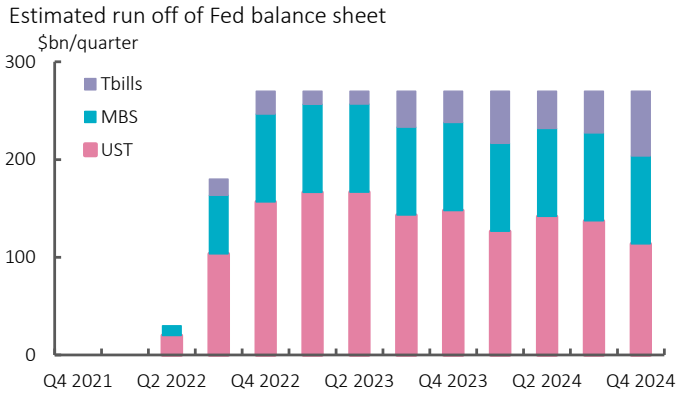
However, these estimates are imprecise and support the Fed's desire to be "humble and nimble" to events and developments. If the Fed is concerned that conditions are tightening too quickly or slowly it can alter communication – forward guidance over the pace of rate adjustment has been effective recently. As such, if conditions continue to tighten over the coming months, the Fed is likely to signal that it will slow the pace of future rate hikes. If conditions ease again, the Fed can discuss a quicker pace of tightening.

[3] We would consider this as a sign that the markets broadly expected this to be the peak in the policy rate cycle.

Quantitative tightening's uncertain impact

To add to the usual uncertainty surrounding the pass-through of monetary policy to broader financial conditions the Fed has also initiated quantitative tightening (QT) – the process of unwinding the balance sheet assets accumulated during quantitative easing. In May, the Fed announced that it would begin to allow assets to mature from June, initially capped at $30bn for US Treasuries (UST) and $17.5bn for mortgage-backed securities (MBS), but with that cap rising to $60bn and $35bn respectively by September. Exhibit 3 illustrates the likely pace of maturities over the coming few years. Exhibit 4 illustrates our projections for the balance sheet.

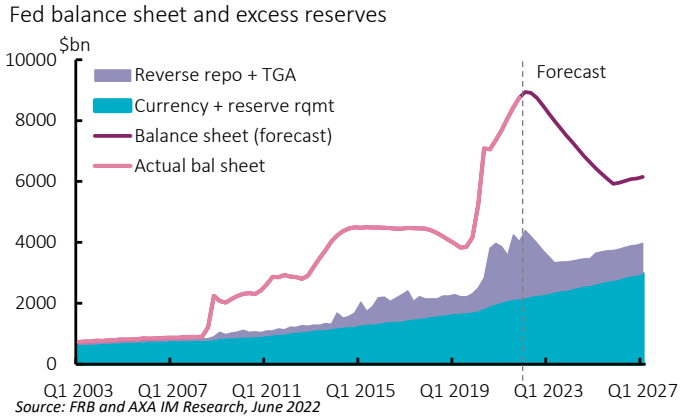
Exhibit 3: Pace of balance sheet run-off



Source: FRB and AXA IM Research, June 2022

This is not a totally new operation. In October 2017, the Fed began to allow its assets to mature, although by 2019 it appeared to have allowed excess reserves to shrink too much, creating shortages in short-term money markets and leading to an abrupt conclusion of the programme. However, this short episode (immediately followed by the pandemic) has made it difficult to fully assess the monetary policy impact of QT.

Exhibit 4: The Fed's balance sheet and outlook



Source: FRB and AXA IM Research, June 2022

One of the most intriguing questions is whether QT will have a symmetric impact on the economy as QE. In the main, central bankers internationally are leaning towards a view that this will not be the case, with Fed and Bank of England officials having suggested that the most potent impact of QE is in alleviating a distorted market, whereas QT would be conducted in more normal market conditions. However, this asymmetry is difficult to formalise in the prevailing assessment that it is the stock of excess reserves that affects markets, rather than the flow of purchases.

Exhibit 5 illustrates a range of estimates published by the Fed of the impact of balance sheet policy expressed as the equivalent adjustment in the FFR. Different studies have suggested different results, but more recent estimates of the impact of QT were much lower than the estimated impact of QE. If it is difficult to assess the impact that the FFR will have on the economy given the uncertainty of pass-through to financial conditions, it is even more difficult to assess the balance sheet impact.

Exhibit 5: Estimates of impact of balance sheet policy

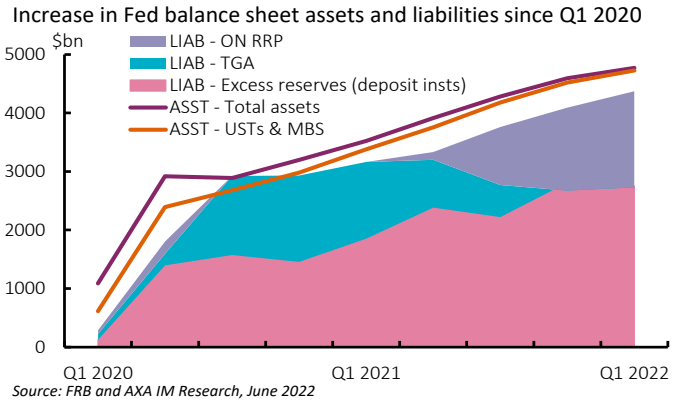
Pre and post QT estimates of balance sheet and FFR equivalences				
Study	Study size of LSAP	GDP equivalent	FFR equivalence	Average $100bn
Pre QT				
Bemanke (2011)	$600bn	$884bn	75bps	
Williams (2014)	$600bn	$786bn	75-100bps	
Eugen, Laubachetal (2015)	$2700bn	$758bn	133bps	12.2
Post QT				
Kansas City Fed, 2017	$650bn	$767bn	25bps	
Fed notes, July 2019	2% of GDP	$460bn	20bps	
		$575bn	20bps	3.7

Source: Federal Reserve Board and AXA IM Research, June 2022

This is likely to be even more the case as we expect the large levels of liquidity prevalent in the US financial system to need to be absorbed before the impact of QT will truly be felt in US markets. At the time of writing, the Federal Reserve has $2.4tn in overnight reverse repo (ON RRP) on its balance sheet – this has increased dramatically from under $300bn in Q1 2020, which largely reflected foreign official and overseas holdings, which had averaged around $250bn from 2016 onwards. The increase was driven by "other" domestic holdings which rose to $2140bn from $0.133bn.

Exhibit 6 illustrates the impact of the Fed's asset purchases on its liabilities during the most recent pandemic-induced QE from 2020. Initial purchases resulted in the creation of excess reserves in the banking system, as had been the case in prior episodes of QE. These reflected Fed asset purchases affecting portfolio holdings across the economy, but ultimately expanding reserves in the banking system. The federal government then absorbed the additional creation of reserves in H2 2020 by issuing large amounts of Treasury bills and expanding its cash holdings at the Fed. This stopped the creation of excess banking reserves, effectively pausing traditional QE. As the government then unwound its liquidity holdings at the Fed from the start of 2021, traditional QE resumed until mid-2021. At this point, the combination of ongoing QE and the government unwind of previous liquidity resulted in increases of ON RRP. Traditional excess reserves only rose by a further $367bn, while assets increased by $1,067bn.

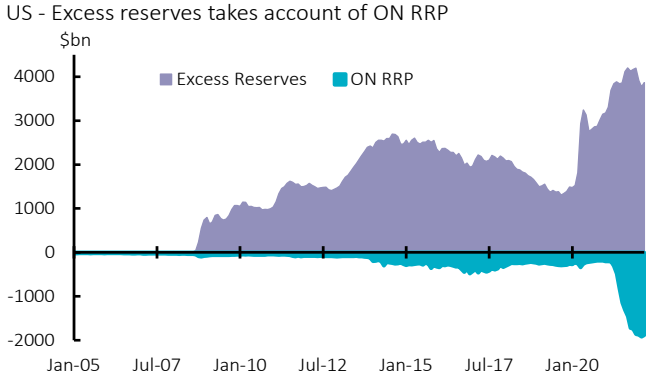
Exhibit 6: The impact of Pandemic QE



Source: FRB and AXA IM Research, June 2022

These ON RRP holdings are effectively cash withdrawals (at the current ON RRP rate of 1.55%[4]) that the Fed uses to manage short-term rates and ensure that excess liquidity does not depress the overnight Effective Fed Funds Rate below the policy range. This is a necessary tool to manage money market operations in an abundant reserves monetary system[5].

Exhibit 7: ON RRP considered on top of excess reserves



Source: FRB and AXA IM Research, June 2022

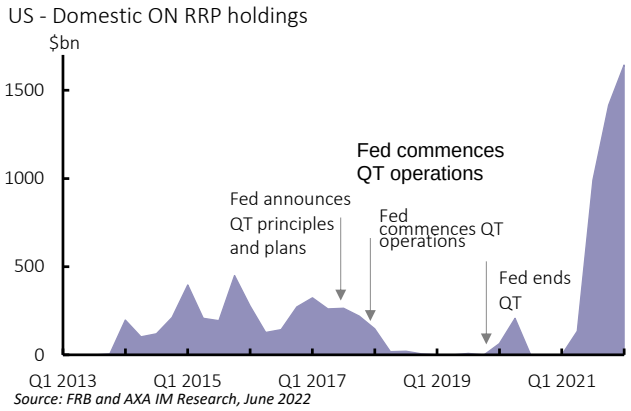
However, from a monetary policy perspective, we argue that these reverse repo holdings can be seen as 'excess, excess reserves'. These reserves do not appear to have sparked the same portfolio redistribution as seen in previous episodes, or the earlier phase of this QE. We might consider some of this build-up to be ineffective QE. Moreover, these ON RRP holdings are likely to be absorbed by the Fed's QT – possibly before the excess reserves in the banking system, which have more of an impact on longer-term asset prices (Exhibit 7).

[4] In March, the Fed raised the FFR rate by 0.25% but only raised the ON RRP by 0.05%, presumably to discourage further increases in holdings.

[5] Page, D., "Fed policy tightening: When, how and how far?", AXA IM Research, June 2015

Given the novelty of this significant build-up of ON RRP holdings, there is significant uncertainty about how this has influenced the QE transmission channel and on its future behaviour. However, during the previous period of QT, where ON RRP holdings with other counterparties were much smaller, these only fell back as the Fed announced and then implemented reductions in excess reserves via QT (Exhibit 8).

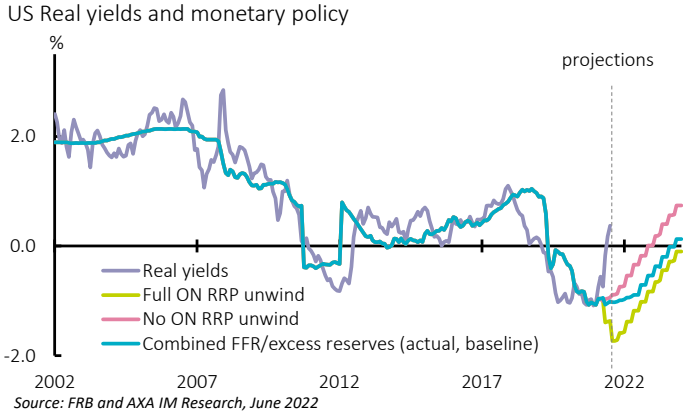
Exhibit 8: ON RRP unwind took place at start of last QT



Source: FRB and AXA IM Research, June 2022

With only one previous episode of QT as a guide, it is difficult to predict how these vast ON RRP holdings will unwind. If, as before, ON RRP holdings are the first to be eroded by QT, then excess reserves will remain relatively high for longer – which should delay any real asset price/monetary policy impact of QT. However, if excess reserves fall back and ON RRP remains elevated, then the impact of QT in monetary policy terms should be felt more quickly.

Exhibit 9: Real yield and overall monetary policy



Source: FRB and AXA IM Research, June 2022

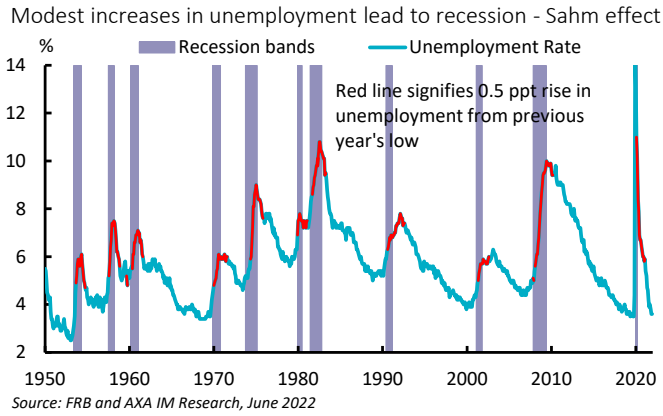
Exhibit 9 illustrates that recent adjustments in yields and particularly real yields suggest efficient markets are pricing the impact of the Fed's tightening in advance of its delivery. A similar anticipation occurred at the end of 2018 as markets began to anticipate the need for looser Fed policy. However, market reaction at the end of 2008 – and on a smaller scale the start of 2016 – proved to be premature, with yields quickly falling back in line with current monetary conditions, before rising again more slowly over time.

The prospect of recession

In the face of a sharp tightening in monetary policy, a number of factors have led some to conclude that recession is now an imminent threat to the US. These include the actual contraction of Q1 GDP by -1.5% on a seasonally-adjusted annual rate (saar), recent inversions of parts of the yield curve and the Fed's track record in delivering soft landings. Indeed, the unemployment rate is currently at 3.6%, close to its historic low of 3.4% (at the end of the 1960s) while the Fed maintains that the long-term rate is 4.0%. With a labour market characterised by Powell as "too tight", one of the Fed's objectives must be to loosen it and recent forecasts look to an increase to 4.1% in 2024. However, the Sahm Effect[6] states that if the 3-month average rate of unemployment rises by more than 0.5 percentage points (ppt) over a 12-month period it signifies that the economy is in recession – or is about to be. Exhibit 10 refines this to illustrate that each time the unemployment rate has risen by 0.35ppt over 12 months it has resulted in recession.

We are cognisant of the risks of recession particularly if the economy is impacted by further exogenous shocks – another new COVID-19 variant, an escalation of the Ukraine war, or other unforeseen developments. However, absent these, we do not envisage a recession over the next 12 months.

Exhibit 10: Real yield and overall monetary policy



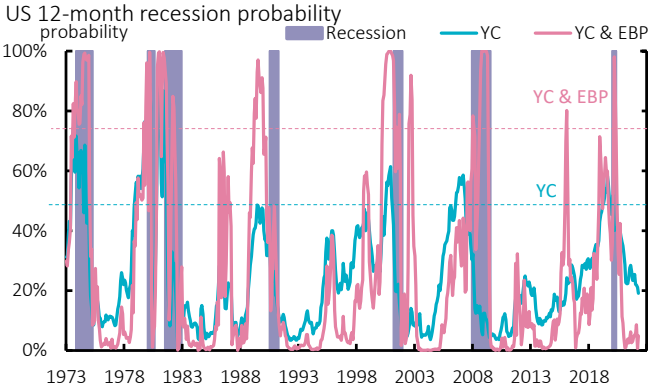
Source: FRB and AXA IM Research, June 2022

The contraction of Q1 GDP to our minds had more to do with erratic factors – a drop in net trade and unwinding inventory accumulation – than underlying demand: Final domestic sales rose by 2.8% (saar), in line with the average increase between 2016 and 2019. Moreover, we believe the economy has economic buffers – including excess savings and pent-up demand in the labour market, which will cushion the slowdown from the real income squeeze and tightening in financial

[6] Named after ex-Fed economist Claudia Sahm

conditions. This view is consistent with our recession probability indicator[7], based on the slope of the yield curve (three months to 10 years) and the Fed-calculated excess bond premium (EBP). This does not signal a high probability of recession over the coming year (Exhibit 11).

Exhibit 11: Recession probability remains low for now



Source: FRB and AXA IM Research, June 2022

Looking further ahead, our outlook for quarterly growth has slowed, and we forecast it slipping to a low of 0.8% (annualised) – it would not take much to lower these growth forecasts further and into negative territory. However, as we move through 2023, we expect to see a material decline in inflation, which will alleviate the real income squeeze on households, particularly if wage growth decelerates more slowly. We would also expect to see a rising contribution from business investment as the economy begins to cope with the structural adjustments caused by the pandemic and the war, particularly the increased energy demand for US shale oil and gas production.

Yet this pre-supposes that the Fed sees the risk of over-tightening financial conditions and that eventual rate hikes fall short of current projections. Otherwise, the risks of recession over the coming quarters will rise.

We do not forecast 2024 in detail yet, but we consider three key risks at this stage:

1. Over this year and next we have assumed that the economy will be supported by the spending of excess savings accumulated during the pandemic – something that will cushion consumer spending from the ravages of the real income squeeze. We have little idea how much of these excess savings will be spent, nor how quickly. But we do assume that they will be spent over the coming two years, meaning that as we go into 2024 this buffer to growth is likely to have been consumed.

2. With an expected divided executive and legislative branches of government beyond the upcoming midterms elections, there seems little prospect of additional fiscal support over the coming years. These risks are compounded by the fact that current "public health emergency" is already seeing maximum non-discretionary support to households, reducing the economy's automatic stabilisers.

3. The Fed's announced pace of QT suggests that it will have absorbed the excess, excess liquidity in ON RRP by 2024. As such, QT should have a more material impact on the real economy by this time.

All these factors add to downside risks for 2024.

Humble, nimble (and a little bit of luck)

The transmission of monetary policy is always uncertain and in part this might be why the US appears to have seen so few soft landings. We illustrate that the effect of monetary policy should be seen through its impact on broader financial conditions, but that the relationship between monetary policy and financial conditions has never been stable. We estimate that a rise in the FFR to 3.25% this year should be sufficient to see financial conditions rise to slow the economy, without tipping it into recession. However, we also show that with the Fed combining swift rate hikes with a much quicker QT, the uncertainty of the impact on asset markets has grown significantly.

Commentary has started to include the prospect of the Fed tightening so much as to cause a recession. This is a clear risk, particularly if the US suffers further exogenous shocks.

We expect the Fed to be very aware of these risks. It has moved quickly from signalling accommodative to tightening policy over the past six months and we expect it to be equally nimble if it believes the risks of recession are rising sharply. We expect the Fed to change down a policy tightening gear from June's 0.75% hike to deliver 'just' a 0.50% hike in July and September, with 0.25% hikes for the rest of the year and to stop tightening at 3.25% at the end of this year. This is sooner than market expectations for a peak of just over 3.00%. The more the Fed tightens financial conditions in excess of its historic pain threshold, the higher we see the probability of an ensuing recession.

[7] Page, D., Venizelos, G. and Savage, J., "Is the yield curve pointing to recession?", AXA IM Research, October 2018.

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