

# World Outlook 2023: The Looming Recession

- The recession we have now been anticipating for nine months draws nearer. A downturn may already be under way in Germany and the euro area overall thanks to the energy shock stemming from the Russia-Ukraine war. Our expectation for a recession in the US by mid-2023 has strengthened on the back of developments since early last spring.
- Wage and price inflation in the US and Europe is running considerably higher today than at any time since the last great inflation four decades ago, thanks to robust aggregate demand, very tight labor markets, and supply side shocks and constraints.
- An examination of the historical record for several major industrial countries since the 1960s finds that any time the trend in inflation has declined by two percentage points or more, that decline has been accompanied/induced by a rise in unemployment of at least two percentage points (i.e., at least a moderate recession). Inflation trends in the US and EA are currently running around 4 percentage points above desired levels.
- We read the Fed and ECB as being absolutely committed to bringing inflation back to desired levels within the next several years. Although the costs in doing so may be lower than in the past for reasons we lay out, it will not be possible to do so without at least moderate economic downturns in the US and Europe, and significant increases in unemployment.
- Overall, we see output declining 1% in the EA and 2% in the US during the year ahead. World growth slows to around 2% in this forecast, a rate that has historically been labeled recessionary.
- The economic downturns along with the aggressive monetary tightening and geopolitical and commodity shocks that induce them will be temporarily painful in financial and emerging markets. We see major stock markets plunging 25% from levels somewhat above today's when the US recession hits, but then recovering fully by year-end 2023, assuming the recession lasts only several quarters.
- The good news is that we also think the Fed and ECB will succeed in their missions as they stick to their guns in the face of what is likely to be withering public opposition as unemployment mounts. The moderate cost of doing so now will be much lower than failing to do so and having to deal with a more severely ingrained inflation problem down the road. Doing so now will also set the stage for a more sustainable economic and financial recovery into 2024.

David Folkerts-Landau, Ph.D.

Group Chief Economist Global Head of Research  
+44-20-754-55502

Peter Hooper, Ph.D.

Global Head of Economic Research  
+1-212-250-7352

## List of Contributors

<b>Foreword</b>	
	David Folkerts-Landau
<b>I. Introduction and Summary</b>	
	Peter Hooper
<b>II. Recession and the War on Inflation in the US and Europe</b>	
	Peter Hooper
	Matthew Luzzetti
	Mark Wall & Team
<b>III. Geopolitical/Other Factors affecting Global Outlook</b>	
A. Russia-Ukraine war, Prospects and Implications	Peter Sidorov, Michael Hsueh and Marion Muehlberger
B. The US-China strategic competition to intensify	Juliana Lee, Jochen Moebert and Hermann P Rapp
C. Mapping the path to the end of zero-Covid	Juliana Lee and Yi Xiong
<b>IV. Regional Economic Projections</b>	
A. United States	Matthew Luzzetti
B. Euro Area	Mark Wall & Team
C. Germany	Stefan Schneider
D. United Kingdom	Sanjay Raja
E. Japan	Kentaro Koyama
F. China	Yi Xiong
G. India	Kaushik Das
<b>V. Market Forecast Summaries</b>	
A. Equities	Binky Chadha, Parag Thatte, Maximilian Uleer
B. Rates	Francis Yared, Ioannis Sokos and Matthew Raskin
C. Credit	Jim Reid
D. Foreign Exchange	George Saravelos and Alan Ruskin
E. Emerging Markets	Sameer Goel
F. Oil and Gas	Michael Hsueh & Peter Sidorov
Research Associates	Avik Chattopadhyay Sourav Dasgupta

28 November 2022

World Outlook



- Even so, the pace of recovery in 2024 and beyond is likely to be moderate, not a strong bounce as has been seen in the past. Factors that are likely to weigh on global growth for some time to come include uncertainties relating to both the Russia-Ukraine conflict—including a lingering energy-induced competitiveness shock in Europe—and the growing US-China strategic competition. We consider developments and prospects on both of these important geopolitical fronts and their broader global implications. We also address the near-term implications of how China's zero-Covid policy is likely to play out.

28 November 2022

World Outlook



## Table Of Contents

Foreword .....	4
I. Introduction and Summary .....	5
II. Recession and the War on Inflation in the US and Europe .....	7
A. Where inflation stands today .....	9
B. Historical evidence on the cost of disinflation .....	12
C. How high will the cost be this time around? .....	14
D. Why central banks will follow through on their missions .....	18
E. Bottom line on the war against inflation .....	21
III. Geopolitical/Other Factors affecting Global Outlook .....	24
A. Russia-Ukraine war, Prospects and Implications .....	24
B. The US-China strategic competition to intensify .....	28
C. Mapping the path to the end of zero-Covid .....	32
IV. Regional Economic Projections .....	34
A. United States .....	36
B. Euro Area .....	38
C. Germany .....	41
D. United Kingdom .....	44
E. Japan .....	45
F. China .....	46
G. India .....	48
V. Market Forecast Summaries .....	50
A. Equities .....	50
B. Rates .....	52
C. Credit .....	53
D. Foreign Exchange .....	54
E. Emerging Markets .....	54
F. Oil and Gas .....	55

28 November 2022

World Outlook



## Foreword

We find ourselves at a defining moment for the global economy. Inflation is running at multi-decade highs, central banks are pursuing their most aggressive tightening cycle in a generation, and a recession is now increasingly expected in the US and Europe. In the meantime, economies and markets continue to be buffeted by a range of other developments, including Russia's invasion of Ukraine, China's zero-Covid strategy, and the growing superpower rivalry between the US and China.

Back in April, this darkening outlook led us to take a notably pessimistic stance, and we became the first bank on the street to make a 2023 US recession our baseline forecast which was a natural extension to our view a year earlier that inflation was not transitory and would require aggressive central bank action. All through this cycle these views have been well outside the mainstream.

Against this backdrop, 2023 will be the third-worst year for global growth so far in the 21st century, behind only the pandemic year in 2020 and the aftermath of the financial crisis in 2009. In the US, our economists see a recession beginning in mid-2023 and in the Eurozone, we think stagflation will be a defining theme next year as they grapple with an energy supply-induced recession and inflation averaging at 7.5%.

Much will depend on the path of inflation, which has consistently surprised to the upside over the last two years. Our economists' models point to inflation returning to target levels or being only slightly above in 2024. However models have not been the best guide to inflation in this cycle and the risk is that squeezing the toothpaste back into the tube will prove more challenging than expected. History suggests inflation tends to stay elevated for many years after spikes similar to what we've seen over the last couple of years. We also see risks that the ECB will be challenged in finding consensus to tighten policy enough to tame inflation in an environment where unemployment starts to rise. We don't think the risks will be as great at the Fed.

When it comes to financial markets, our baseline view is that the current bear market equity rally will continue for now, taking the S&P 500 up to 4500 in the first half of 2023. However, as the recession takes hold from mid-year, we are likely to see the index slumping back. The impact of a recession will also be felt in credit, where USD HY spreads should widen to 860bps by end-2023, and EUR HY should reach 930bps. With the end of the Fed's tightening cycle, and then a recession, it should be a more positive year for Treasuries, with the 10-year yield ending 2023 around its current levels at 3.65%, but bunds will underperform, in our view, with 10-year yields moving to 2.60%. Finally in FX, we see a reversal in the dollar's upswing, with EUR/USD strongly moving back above 1.10, likely reaching 1.15 by late 2023.

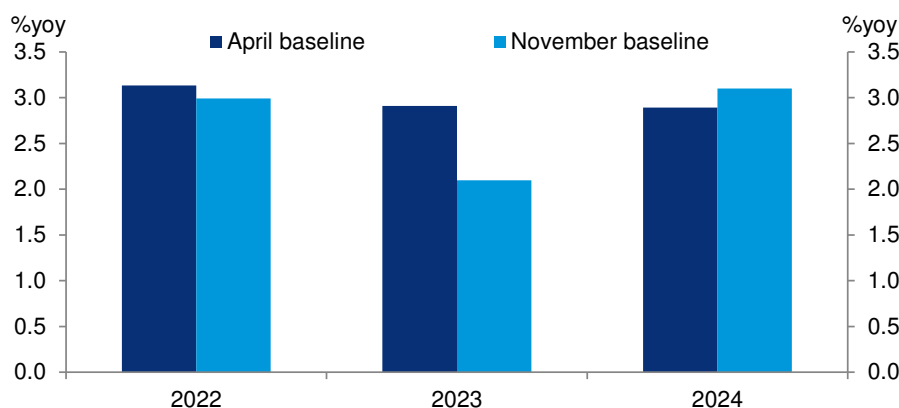
*David Folkerts-Landau*



## I. Introduction and Summary

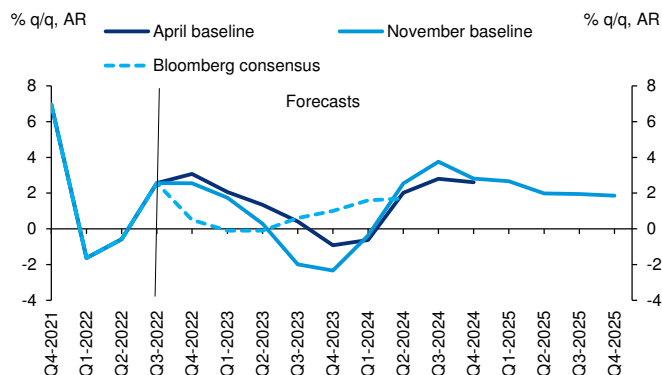
**The coming recession.** Our [World Outlook](#) in April highlighted the high probability of a recession in the US and the growing risk of one in Europe in 2023. Developments over the intervening months have strengthened this view. Indeed, we now see the US downturn beginning around midyear, while recession in Europe may already be under way. As a result, we project world growth to slow to just above 2% next year, a rate of expansion that has traditionally been associated with global recession. This forecast remains below consensus although the forecasting community has been moving toward our view in recent months. While the Bloomberg consensus has now built very mild US and EA downturns into the first half of 2023, we still see the levels of GDP falling and unemployment rising significantly more than the consensus views in both regions by the end of next year.

Figure 1: World Real GDP growth



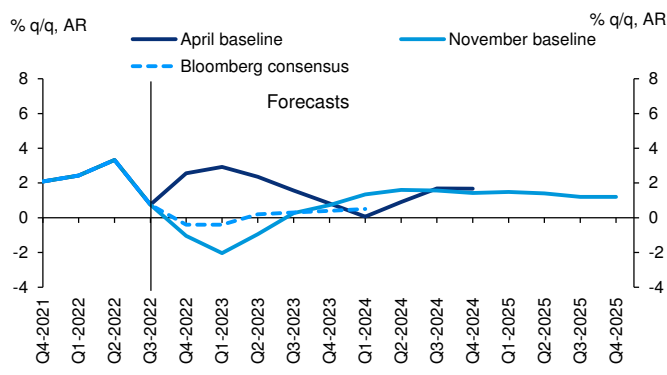
Source: Deutsche Bank

Figure 2: US real GDP growth



Source: Deutsche Bank, Bloomberg Finance LP

Figure 3: EA real GDP growth



Note: Bloomberg consensus is quarter on quarter percent change. Source: Deutsche Bank, Bloomberg Finance LP



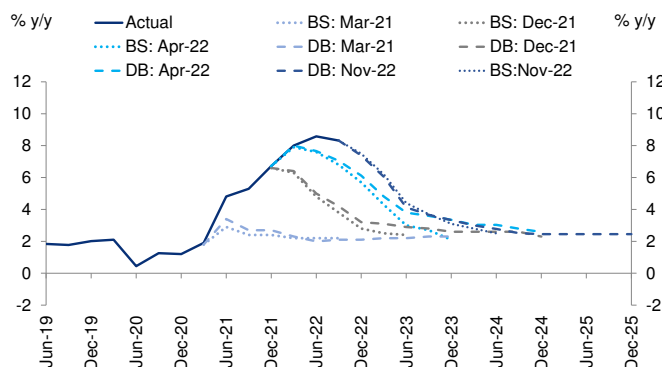
Figure 4: DB growth projection weaker than both our April forecast and current Bloomberg Consensus

Real GDP	2021	2022	2023	2024	2022	2023	2024	2025	2023	2024
	% YoY				% YoY				% YoY Bloomberg 25-Nov-22	
	April baseline				November baseline					
World	6.3	3.1	2.9	2.9	3.0	2.1	3.1	3.4	2.2	3.0
US	5.7	3.0	1.8	0.7	2.0	0.8	0.3	2.5	0.4	1.3
Euro Area	5.3	2.8	2.3	1.0	3.3	-0.6	1.0	1.5	-0.1	1.5
Germany	2.9	2.3	3.0	0.8	1.7	-1.0	1.0	1.6	-0.6	1.3
UK	7.5	3.8	0.7	1.3	4.5	-0.9	0.5	1.5	-0.8	1.0
Japan	1.7	1.5	1.3	0.6	1.5	1.2	0.8	0.9	1.3	1.1
China	8.1	4.4	4.7	5.3	3.0	4.5	6.5	5.0	4.8	4.8
India	8.3	7.0	6.0	6.5	7.0	6.0	6.0	6.5	6.0	6.5
Canada	4.6	3.9	2.9	2.2	3.3	1.2	1.8	2.2	0.6	1.6
Australia	4.7	4.8	2.5	2.0	4.1	2.2	1.5	2.0	1.9	1.8
South Korea	4.0	2.6	2.1	1.6	2.7	1.0	1.8	2.3	1.8	2.4
Russia	4.7	-8.0	-2.5	2.0	-3.4	-2.8	1.6	1.3	-3.2	1.5
Turkey	11.0	3.0	3.3	3.6	5.1	3.0	3.5	3.7	3.0	3.0
South Africa	4.9	2.0	2.2	1.8	1.7	1.2	2.1	2.6	1.3	1.8

Source: Bloomberg Finance LP, Deutsche Bank

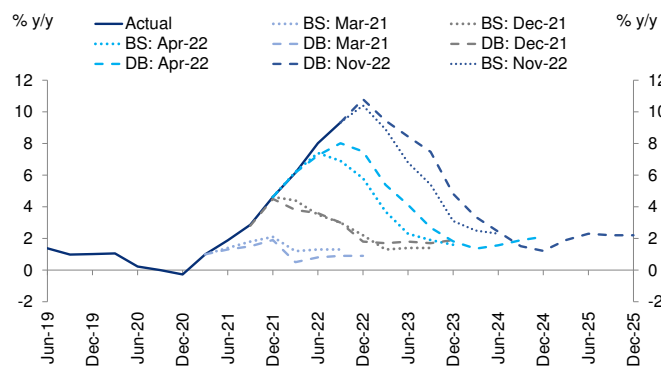
**Successful disinflation with downside risks to growth.** The main factors driving the outlook for recessionary outcomes in 2023 are aggressive central bank tightening needed to quell inflation from undesirably elevated levels and, in addition and more importantly for the euro area, the energy shock caused by the cutoff of gas from Russia. The resulting declines in aggregate demand and increases in unemployment will relieve upward pressure on wages and prices, enough we think to move inflation gradually back to desired levels by the end of 2024. The case for recession and disinflation in the US and Europe is considered in some detail in Section II below. We are mindful of both the persistence of upside errors in macro inflation forecasts over the past two years and historical evidence that inflation has proven stickier on the way down than the way up.<sup>1</sup> For this reason, we see the risks still weighted toward more severe recessions being needed to get the disinflation job done successfully, and as we discuss in Section II, we assume the Fed and ECB will be up to the task if needed.

Figure 5: US inflation has peaked



Note: BS=Bloomberg consensus survey of forecasters median, DB=Deutsche Bank World Outlook forecast. Source: Bloomberg Finance LP, Deutsche Bank

Figure 6: EA inflation should peak soon



Note: BS=Bloomberg consensus survey of forecasters median, DB=Deutsche Bank World Outlook forecast. Source: Bloomberg Finance LP, Deutsche Bank

1 Our colleague Jim Reid recently published an excellent analysis on this point [here](#).

28 November 2022

World Outlook



**Geopolitical and other forces restraining growth.** As we look beyond 2023 and our baseline view of a relatively mild recession lasting several quarters, we also see a mild recovery, not a strong bounce in growth. This is partly because central banks will be cautious about moving policy back into stimulative territory until the war against inflation has clearly been won. In addition, geopolitical factors that will have been weighing on growth are likely to continue to do so in 2024 and beyond, perhaps more so in Europe and Asia than the US. In Section III we discuss in some detail recent developments and prospects on two geopolitical fronts that will impinge on global economic activity. The first is the Russia-Ukraine war, which seems destined to evolve into a frozen conflict, with risks for both less favorable and more favorable outcomes. Our assumption of a slow EA recovery after the winter 2022 recession is in part due to a lingering energy-based competitiveness shock. The second is the US-China's strategic competition – their struggle for technological and information dominance, in particular – and their efforts to reduce asymmetric dependence on each other. Their measures not only add to regulatory and compliance drags on trade, but also point to significant adjustment in supply chain ahead. A third issue we address in Section III is China's path to ending its zero-Covid policy. In brief, we expect the current substantial drag of growth in China to remain in place until mid-2023, after which considerable pent-up demand should provide a significant boost to growth for the second half of next year.

**Financial conditions to tighten on average until the recession is under way.** The remainder of this publication presents summary write-ups of our economic forecasts for most of the major countries and regions of the world in Section IV and for key financial and commodity markets in Section V. Equity markets are projected to move higher in the near term, plunge as the US recession hits and then recover fairly quickly. We see the S&P 500 at 4500 in the first half, down more than 25% in Q3, and back to 4500 by year end 2023. The 10-year Treasury yield is projected to remain in its recent range in the months to come, and then rally moderately around midyear as the US downturn approaches. The German Bund yield should rise to 2.60% by Q2 before remaining relatively stable in comparison to Treasury yields. Corporate credit spreads should widen significantly through the year, especially around midyear as it become clear the US recession is under way. We expect the dollar to move sideways against the euro and then to weaken significantly as the recession hits and risk premia favoring the dollar begin to diminish. Supply constraints will keep oil prices elevated in the neighborhood of \$100/bl until demand softens with the US downturn; then see these prices declining \$20/bl by year end. The current mix of aggressive central bank rate hiking to deal with elevated inflation, geopolitical uncertainty and elevated commodity prices, and impending recession in the EA and US has been a toxic mix for emerging markets. We see this sector remaining under pressure well into 2023, but then beginning to trend more positive later in the year as inflation begins to recede and central bank policy begins to reverse both domestically and by the Fed.

*Peter Hooper*

## II. Recession and the War on Inflation in the US and Europe

*"I think no one knows whether there's going to be a recession or not. And if so, how bad that recession would be."* Jerome Powell November 2, 2022

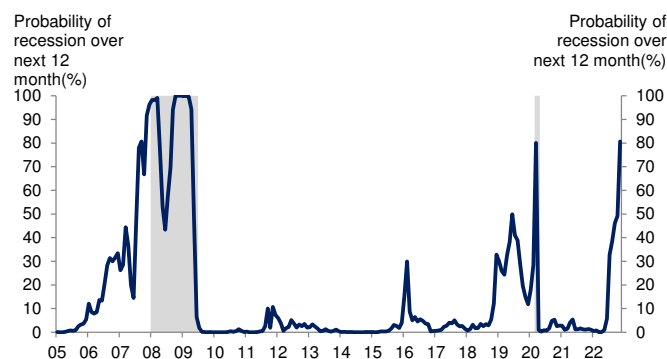
*"I think in the present state of uncertainty, with the likelihood of recession looming much more on the horizon and the probability of it having increased, everyone has to*



*do their job. Our job is price stability. This is our primary mandate and we are riveted on that", Christine Lagarde October 27, 2022.*

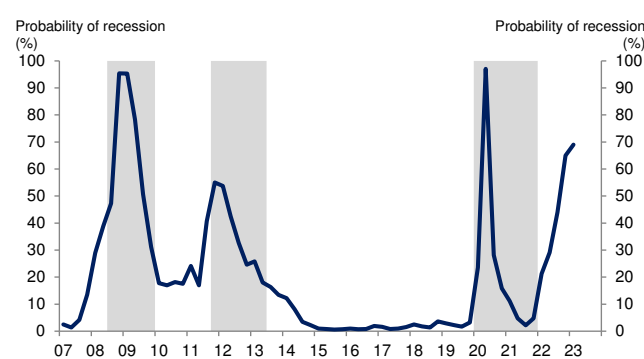
Recessions are seldom forecasted until they are fast upon us, and as Chair Powell noted recently, we cannot be certain that one is on the way now. However, rarely has there been this much advance warning in both the US and Europe that recessions are in the offing in the quarters ahead. The drivers of recession on the two sides of the Atlantic have similarities but also differences. Central banks have not previously succeeded in quelling inflation from near double-digit levels without tightening policy enough to induce recessions. However, unlike the US, Europe's inflation has a more important and more immediate supply-side element. Energy supply constraints mean recession this winter even before the ECB's monetary tightening takes full effect. Our near-term model for assessing recession probabilities in Europe is running at c.70%. Our year-ahead model for the US is at 80%.<sup>2</sup>

Figure 7: US 'all in' model shows ~80% recession probability over the next year



Source : Bloomberg Finance LP, Haver Analytics, Deutsche Bank

Figure 8: EA recession probability model implies c.70% chance of recession within next 3 months



Source : Deutsche Bank, Eurostat, Macrobond. For methodology see [here](#).

In this section we lay out in some detail why we think these recession probability models have it broadly right, and that recessions are impending in both Europe and the US in the quarters just ahead—if not this winter in Europe then by next winter. We also consider why these recessions could prove to be relatively mild. To do so, we begin by examining the current state of inflation—its level and persistence—in the US and Europe. Next we review what historical experience tells us about how much economic pain has been incurred in central-bank led efforts to disinflate in the past. Third, we consider factors that are likely to render recessions less severe this time around than they have been in the past and lay out our baseline expectations for recession. Next, we review our outlooks for Fed and ECB policy and indicate why central banks will most likely stay the course in the face of mounting—indeed likely fierce—political resistance to their disinflation policies as economic downturns emerge. The section concludes with a bottom line assessment of the outlook for inflation and how successful the central banks are likely to be in achieving their objectives.

<sup>2</sup> The EA recession probability model assesses the risk of activity contracting within the next three months based on the PMI composite output index, the DB market-based financial conditions index and the DB economic uncertainty indicator (see ["Euro Area Cycle Dashboard: Increasing probability of recession"](#)). The US recession probability model is based on signals from the yield curve (via a principal component analysis), the excess corporate bond risk premium, the Fed's real policy stance, Chicago Fed FCI, and the economy's distance from the Fed's targets (see ["Far distance from Fed's targets means closer distance to recession"](#)).



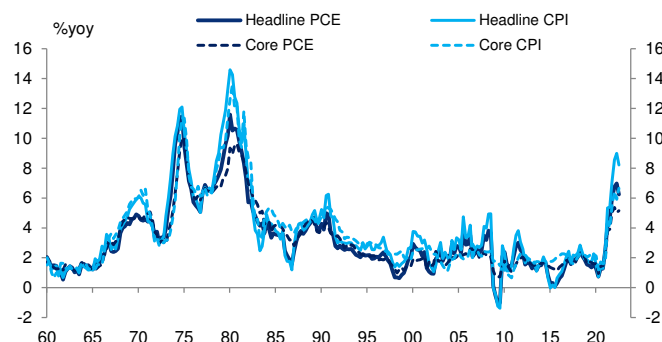


## A. Where inflation stands today

### US inflation

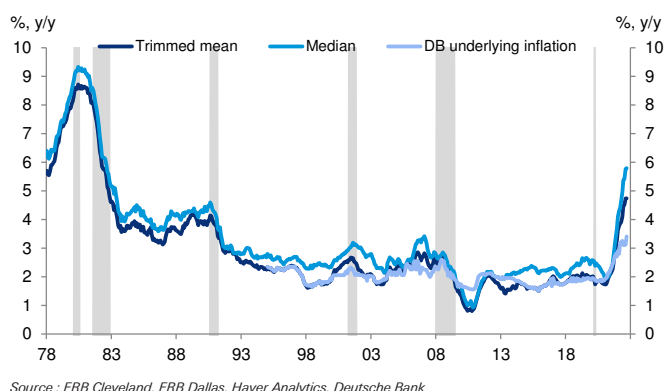
**Inflation moved to four-decade highs.** Driven by massive imbalances between supply and demand, the pandemic and the policy response to Covid triggered a historical rise in US inflation, which lifted most inflation gauges to four-decade highs. Headline and Core CPI recently hit peaks at 9% and 6.7%, respectively, far higher than the 2-2.5% range that prevailed prior to the pandemic. Inflation according to the Fed's preferred gauge is nearly as eye-watering, with headline PCE peaking at 7% and core PCE hitting a high of 5.4% earlier this year.

Figure 9: US inflation surged to four decade highs following the pandemic



Source : BEA, BLS, Haver Analytics, Deutsche Bank

Figure 10: Underlying inflation is elevated



Source : FRB Cleveland, FRB Dallas, Haver Analytics, Deutsche Bank

**Underlying inflation increasingly demand driven.** Sky-high inflation has persisted for longer than initially anticipated, and has evolved over time to become more broad-based as well as more services and demand driven. The trimmed mean and median PCE gauges have recently surged to 4.7% and 5.8%, respectively, while our more comprehensive measure of underlying inflation is now about 1.5 percentage points above the Fed's objective. Moreover, during the past three months, data from the SF Fed suggests that demand factors have accounted for about three-quarters of the rise in the core PCE inflation data relative to before the pandemic. Consumer demand has derived ongoing support from past fiscal stimulus measures.

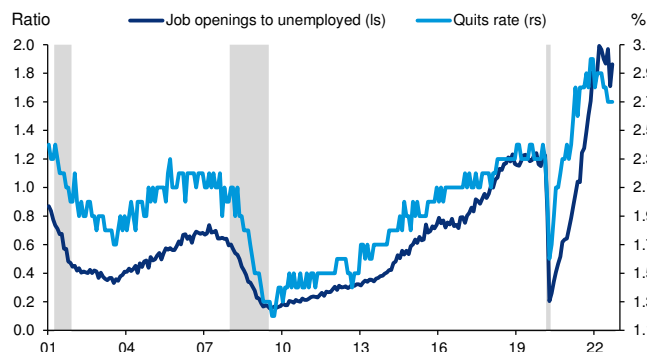
**The labor market has reached historically tight levels** across a number of metrics. Job openings exceed the number of unemployed individuals by about 5 million – well in excess of the 1.25 million spread that prevailed before the pandemic – and the quits rate rose to record high levels. Wage growth has accelerated to several decade highs as the labor market tightened aggressively, adding additional push to the price pressures observed earlier in the pandemic.

28 November 2022

World Outlook

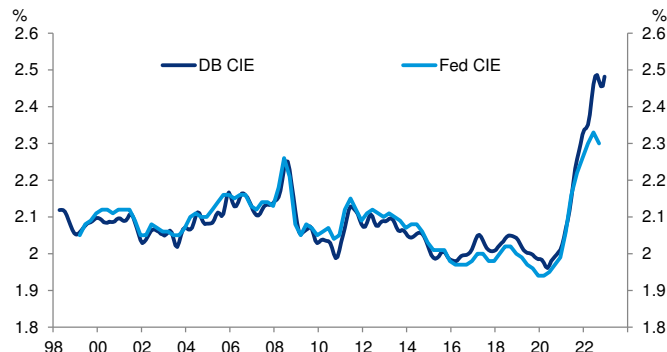


**Figure 11: Labor market still historically tight: V/U and quits rate elevated but peaking**



Source : BLS, Haver Analytics, Deutsche Bank

**Figure 12: Inflation expectations have risen, but long-run measures have been anchored**



Source : FRB, Haver Analytics, Deutsche Bank, Note: CIE stands for index of Common Inflation Expectations

**Inflation expectations data have been mixed.** After rising in response to the surge in energy and food prices, most measures of long-run inflation expectations have since retreated and appear to be well anchored. Notably, both surveys of professional forecasters and market measures (breakevens and swaps) – show little concern about longer-run (5y5y) inflationary pressures. That said, short-run measures remain elevated and our index of common inflation expectations (CIE) remains near record high levels. As such, the Fed will not take anchored inflation expectations for granted, especially if energy prices experience a renewed rise.

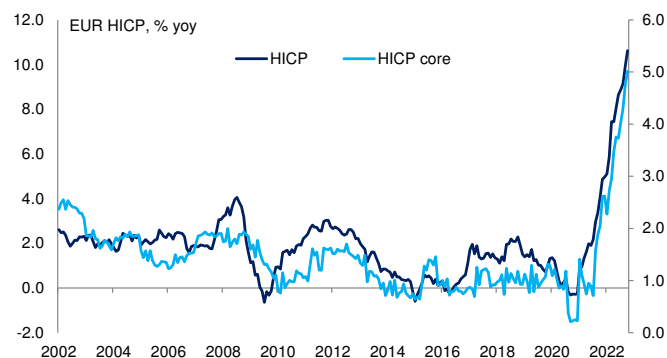
**Some signs of a turn in US inflation beginning to emerge.** Although wage and price pressures are likely to remain persistent, there has been some tentative evidence of an easing of supply-demand imbalances leading to moderating wage and price pressures, particularly with respect to the goods sectors. In the latest CPI data, core goods inflation dropped 0.4% m/m, the second sharpest decline since the pandemic period, and deflationary forces became more widespread. There is also broader evidence from private sector estimates that rent inflation has downshifted. While it could be nearly a year until that is fully reflected in the official data, given the focus on a broader stock of properties, it provides some confidence that shelter inflation should be lower twelve months ahead than currently. Finally, there is conflicting evidence in health care inflation, which is falling sharply in the CPI, but looks set to rise in the PCE, given differences in how these are measured. This dynamic should lead to a sharp narrowing in the spread between CPI and PCE inflation over the next year.

### Euro Area inflation

**Inflation running even higher than in the US.** EA inflation has surprised dramatically to the upside in 2022. Headline HICP inflation was 10.6% yoy in October, comfortably the highest since the euro was formed in 1999. We expect headline inflation to peak soon at around 11%, not far below the all-time high of 13.5% yoy in 1973. Inflation in Germany already exceeds its 1970s highs. Core and underlying inflation metrics are also at record highs. Euro area core was 5.0% in October and the average of all our underlying indicators was close to 6%, more than double its previous 2008 historical peak.

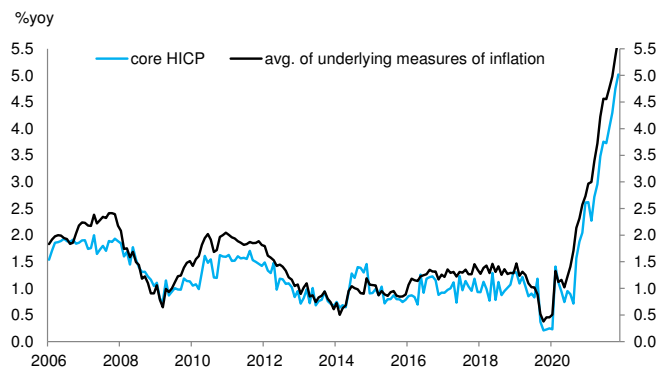


Figure 13: Headline inflation above 10% yoy and core above 5% yoy in EA



Source : Deutsche Bank, Eurostat

Figure 14: Underlying inflation momentum still rising

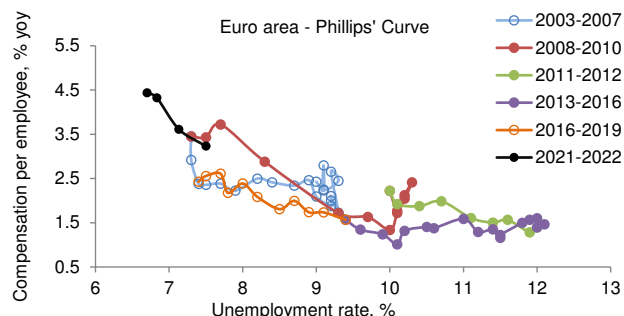


Source : Deutsche Bank, Eurostat, ECB

**Inflation driven by supply shocks and strong demand.** The surprising surge in inflation this year has been driven importantly by soaring energy and food prices caused by the cutoff of gas from Russia and other developments relating to the war in Ukraine. While commodity prices may have peaked, they will likely remain at levels that will continue to pass through to and help support broader consumer price inflation at levels higher than generally expected by consensus and ECB forecasters. These direct and indirect effects could easily add 2pp to HICP in the next 12 months. The other key driver has been firm consumer demand, which has helped to tighten the labour market.

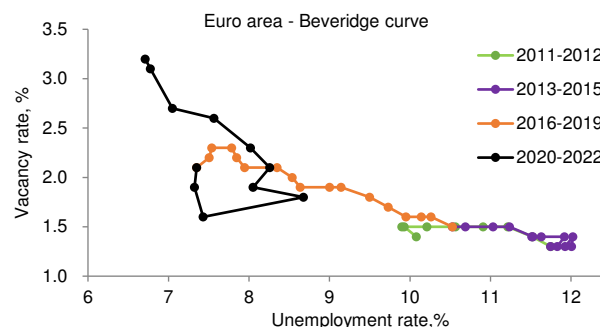
**The labour market is historically tight** as reflected by both the unemployment rate and the unemployed to vacancy ratio. Unlike the US, declining supply of labor has not been a factor, as labor force participation has moved above pre-pandemic levels. Thanks to policies aimed at keeping workers attached to their jobs during the pandemic—widespread use of furlough schemes—participation rates fell less in Europe than the US. And as the labor conditions tightened during the post-pandemic recovery, more workers were attracted into the market. As a result, neither the Beveridge curve nor the Phillips curve has shifted. Rather we have seen a move leftwards up the steeper part of these curves, consistent with a labor market that has been driven to extremely tight levels by strong aggregate demand.

Figure 15: Tight labour market driving wages in EA



Source : Deutsche Bank, Eurostat

Figure 16: No negative labour supply shock in EA, just very tight labour market



Source : Deutsche Bank, Eurostat

28 November 2022

World Outlook



**Wage inflation is elevated.** The pace of wage inflation has picked up from 2.5% yoy pre-Covid to somewhere probably close to 4.0% yoy in Q3-22. We expect hourly labour costs to reach 5% yoy—in line with the new Central Bank of Ireland/ Indeed.com wage tracker (see [here](#)). This is the highest since the early 1990's. Our wage-sensitive HICP basket currently also shows a 5% yoy inflation rate. This basket highlights how the sectors most susceptible to passing on higher labor costs are already doing so at the rates observed historically (see [here](#)). This should support elevated price inflation into next year as firms retain some degree of pricing power.

**Turn in headline inflation may not be far off, turn in core will be slower.** We are mindful that forecasters have been consistently wrong in calling for an impending downturn in inflation over the past year. We have also noted factors like elevated material input cost levels and wage inflation that are poised to keep inflation higher than generally expected over the year ahead. That said, several factors do point to a peaking in headline inflation over the months ahead. Commodity prices (Brent, food, natural gas in particular) have peaked while early signals of supply chain stress have normalised (e.g. delivery times, freight costs). Rent inflation is not driving services inflation and the European housing market structure and policies mitigate it relatively more than in the US. Finally the looming economic slowdown will dampen inflation momentum—we turn to this next. Nevertheless, all things considered, while the peak in headline inflation is close, the decline in 2023 will be relatively slow. This is in part because core inflation is likely to remain in a tight range of c.5.0-5.5% until the end of next summer before turning down.

## B. Historical evidence on the cost of disinflation

As we have seen, inflation has surprised, even shocked, to the upside in the past year in both the US and Europe, indeed across much of the globe. While a downturn may finally be emerging or on the way soon, there are also significant forces operating to keep inflation well above desired levels for some time to come. Can central banks deal with this problem without incurring substantial economic costs (i.e. moving into recession)? Is there reasonable hope for an "immaculate disinflation" as central banks and many private sector forecasters still seem to expect? In this section we review what past experience has to say on the subject.

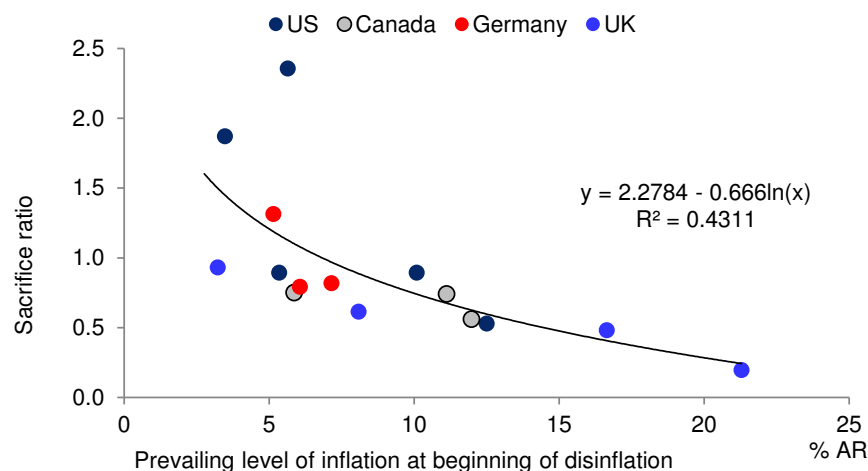
**Disinflation always costly in the past.** An examination of the historical record finds that successful disinflation does not occur on the cheap. It generally comes at a substantial cost in terms of jobs lost and output foregone. We have examined all episodes in the US and several other G-7 countries (Germany, UK, and Canada) since the 1960s in which disinflations of at least two percentage points occurred. ("Disinflations" were defined as peak-to-trough declines in a two-year *trend* or moving average of core inflation.) In all instances, the disinflations were associated with increases in unemployment of at least two percentage points and in most cases substantially larger increases. The rises in unemployment, in turn had generally been induced by central bank tightening aimed at quelling inflation that had risen to undesired levels.

**Disinflation more costly the closer you get to target.** The scatter plot below shows the sacrifice ratios for each of these disinflations plotted against the level of trend core inflation prevailing at the time that it began to fall. The sacrifice ratio is the ratio of the cumulative rise in unemployment to the decline in trend inflation recorded during the disinflation episode. That is, it shows how much the unemployment rate



rose for every percentage point decline in inflation that occurred. The slope of the regression line identified by this scatter plot indicates that the sacrifice ratio tends to be smaller for larger disinflations. That is, while all disinflations are costly, they tend to be less costly (in terms of increase in unemployment per percentage point of reduction in inflation) when inflation is being reduced from high levels than when it is being reduced from lower levels. This suggests that central banks have to work harder to get all the way back to target. And in doing so they will likely face increasing resistance to their efforts to reduce inflation as they move closer to those targets.

Figure 17: Sacrifice ratios are lower for higher initial levels of inflation

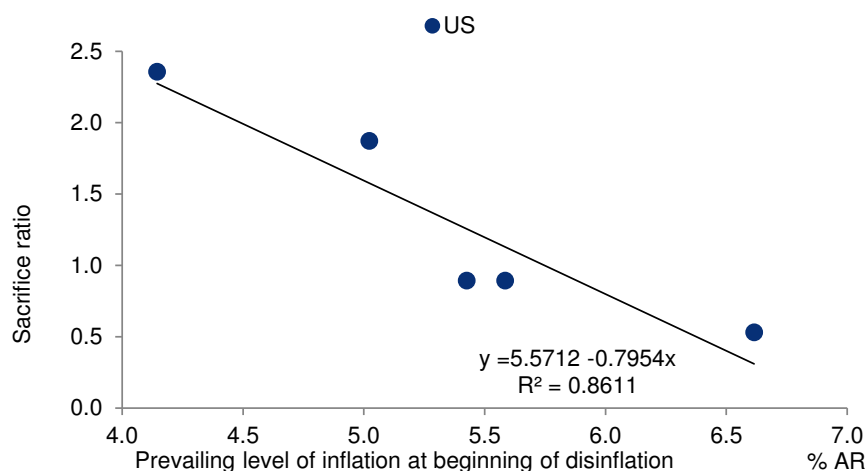


Source : Deutsche Bank

**Disinflation more costly the tighter the labor market to start with.** We have also considered how sacrifice ratios vary with the degree of tightness in the labor market at the onset of the disinflation—where labor market tightness is gauged by the level of trend (the two-year moving average of) unemployment. As indicated in the scatter plot below, for the US, the sacrifice ratio is greater in instances when the labor market is tighter to begin with. The relationship shown indicates that with the US unemployment rate currently running below 4%, the sacrifice ratio could be greater than 2. This would suggest that a Fed desire to reduce core inflation from around 5% to 2% could cost more than a six percentage point increase in unemployment. However, historical experience is at best only a very rough guide and as discussed further below, we see good reason the sacrifice ratio could be substantially lower this time around—but still well above zero.



Figure 18: Sacrifice ratio rises the lower the initial level of unemployment



Source : Deutsche Bank

**Costs rise when disinflations fail.** The historical record also shows that in a number of disinflation episodes, especially throughout the 1970s, central banks in the US and Europe failed to return inflation all the way back to desired levels. This occurred because policy tightening was reversed too quickly and aggressively when economies moved into recession. The quick pivots to often strong stimulus fostered speedy economic recoveries but also meant that inflation would resume uptrends from higher than desired levels. This stop-go policy pattern actually helped elevated inflation to become increasingly ingrained over time into inflation expectations and wage-price setting. When central banks in the US, Germany and the UK did finally address the inflation problem in earnest in the early 1980s, they had to engineer severe recessions in order to return inflation sustainably to desired levels. Unemployment rates for all three countries moved up into the 8 to 10% range during that period<sup>3</sup>

### C. How high will the cost be this time around?

Historical experience suggests that returning inflation from recent levels will take considerable effort on the part of central banks, costing increases in unemployment of at least several percentage points. Such costs are far in excess of what central bank and consensus forecasts are anticipating.<sup>4</sup> There are good reasons why the cost could be lower this time around, but there are also good reasons to think the consensus view has not factored in the lessons from history sufficiently.

**On the favorable side,** we can note that:

- **Central banks have learned from historical experience.** While slow to recognize the severity of the inflation problem, once they did, the Fed and ECB moved aggressively to deal with it, raising rates faster than at any time since the Volcker era. This action has helped hold the lid on longer-term

3 The rise in European unemployment in the 1980s was also partly driven by structural factors. The interaction of structural factors and tight policy may have aggravated the rise in structural unemployment via hysteresis effects.

4 For example, the latest Bloomberg consensus has the US unemployment rate rising by about one percentage point from recent levels in this cycle; as of September the FOMC median was closer to half a percentage point.

28 November 2022

World Outlook



inflation expectations which will serve an anchor to help return inflation to desired levels as aggregate demand softens.

- **Structural changes in labor markets** have improved prospects for disinflation. Elevated inflation has become less ingrained in the economy than it did through the 1970s because wage-price dynamics have eased. Labor unions are much less prevalent/potent today than they were several decades ago and their reduced bargaining power means that the near automatic indexation of wages to increases in prices is much reduced.
- **The relative brevity of the current inflation episode** has meant that (1) memories of times when inflation was very low are still fresh, and (2) high inflation has had less opportunity to work its way into the system as sustainably as it did over the entire decade of the 1970s.

#### On the unfavorable side:

- **This inflation may still be a young one but it has broadened substantially.** Inflation is now much more than a supply-driven goods sector problem. It has spread deep into service sectors and now excessively tight labor markets. And, while longer term inflation expectations still seem relatively well anchored, broader measures including short term expectations are looking more troublesome.
- **The Phillips curve has flattened** since the 1970s, meaning that central banks have to work harder and raise unemployment more to reduce inflation.<sup>5</sup> That said, in very recent years, there is some evidence—including in the euro area (Figure 15)—that the relationship has steepened again as suggested by the surprisingly rapid pickup in inflation over the past couple years.

In brief, there are good reasons to expect the costs of dealing with the current inflation will be lower than in the past, but also good reasons to expect they will still be significant. Our views on the coming US and EA recessions are summarized as follows.

#### US recession

**Moderate recession coming.** Based on our work using recent academic Phillips curve based inflation models, we expect that the unemployment rate will likely have to rise a couple percentage points, into the 5.5-6.0% range. This is on the upper end of the range of other forecasters and well above the 4.4% peak unemployment rate forecasts from the Fed, although Fed officials have more openly discussed the likelihood that the labor market will likely need to soften more materially.

**Lowering labor demand will not be enough.** There has been some debate about whether the labor market can loosen primarily by reducing job openings as the US economy is currently on the steep portion of the Beveridge curve. While we cannot confidently rule out this potential resolution to the historic labor market imbalances currently plaguing the US, both history and recent evidence suggest the labor market is likely to come into better balance through a meaningful rise in unemployment. Historically, there is little evidence of job openings declining without layoffs rising. More recently, sector-level data indicate that sectors reducing job openings are on average also increasing layoffs and cutting hires – dynamics that will ultimately lead to higher unemployment.

---

<sup>5</sup> The substantial flattening of the Phillips curve over recent decades and its negative implications for Fed policy going forward were addressed in the 2019 USMPF paper [here](#).



28 November 2022

World Outlook



**Fiscal and monetary policy will be constrained.** In terms of the magnitude of the recession, there are crosscurrents at play. On the one hand, the typical countercyclical policy response that helps to buffer against a more severe downturn is likely to be constrained. The Fed will be constrained by still above target inflation, while the midterm elections point to a gridlocked Washington that will not be proactively responding to a downturn in the economy. Indeed, there are downside risks to fiscal policy this year if House Republicans aim to leverage the budget process or debt ceiling to extract spending concessions. On the other hand, household and business balance sheets are in good shape without an obvious need for deleveraging, and classic cyclical sectors – housing and autos – have been supply constrained and / or are already going through a meaningful retracement in activity given the tightening of financial conditions.

**Baseline is recession begins mid-2023.** While we would caution that pinpointing the specific contours of a recession is fraught, on balance, we see these forces leading to a moderate recession from a historical perspective, one that begins around mid-2023 and lasts three to four quarters. In terms of magnitude, we forecast a peak to trough decline in real GDP of around 1.25 percentage points and rise in the unemployment rate of roughly similar magnitude (relative to right before the recession). While this ratio (unemployment rise to GDP decline) is low relative to history, we think it best reflects the fact that the labor market is currently very tight due meaningfully to a short supply of labor. This dynamic could lead to some hesitancy in laying off workers, if firms believe it would be difficult to hire them back once demand rebounds.

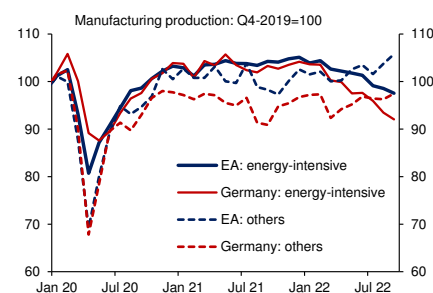
## EA recession

**The euro area may already be entering recession.** In the euro area, we also expect a roughly average recession – with a peak-to-trough decline in GDP of 1% – but the drivers and timing are somewhat different to the US. This is an upgrade to our earlier view, which had expected a near 2% decline. However, the weakening of the outlook since early 2022 has been severe. Before the Ukraine/Russia shock we had expected EA GDP to grow by +2.8% in 2023. We see the euro area entering recession in Q4-22, with the economy remaining in contraction until mid-2023.

**The energy crisis is the main driver of the downturn** in Europe. We see the energy crisis weighing on activity through different channels – the impact on production (energy intensive sectors), the real disposable income shock and the heightened uncertainty. The higher price of energy is affecting production energy-intensive sectors, with output in these down 8% in Germany and 5% in the EA since the Ukraine invasion. However, three factors are limiting the industrial downside compared to our earlier fears. First, energy substitution has helped achieve industrial gas savings of 20-25% with a moderate impact on output. Second, a mild autumn and the success in filling gas storage have eased risks of gas rationing. Third, supply chain improvement has facilitated increased output in non-energy intensive sectors. Continuation of existing gas consumption cuts of 10-15% through next winter (2023/24) are sufficient to avoid rationing risks. However, high gas prices still represent a major competitiveness shock<sup>6</sup>.

**Growth hit by inflation and uncertainty but boosted by fiscal support.** Higher inflation is dragging household disposable income. Compared to a year ago, our

**Figure 19: Euro Area – Energy-intensive production has clearly weakened; non-energy intensive production is recovering, helped by easing supply chains**



Source: Deutsche Bank, National statistics, Eurostat, Haver Analytics LP

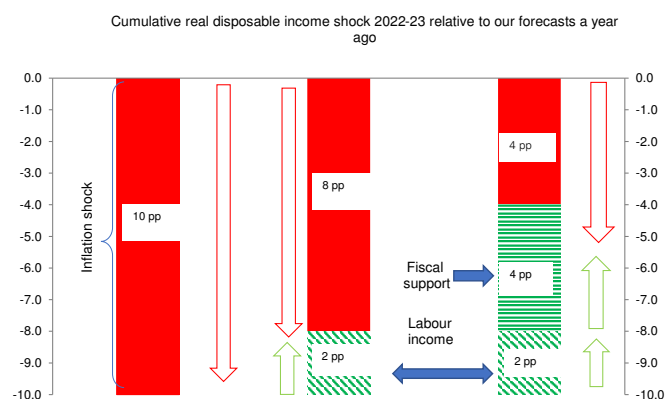
<sup>6</sup> Our macro forecasts assume wholesale gas prices in Europe slightly below current market pricing at around 110 EUR MWh for the next 12 months. See Strategy section below for more discussion on the commodity price outlook.





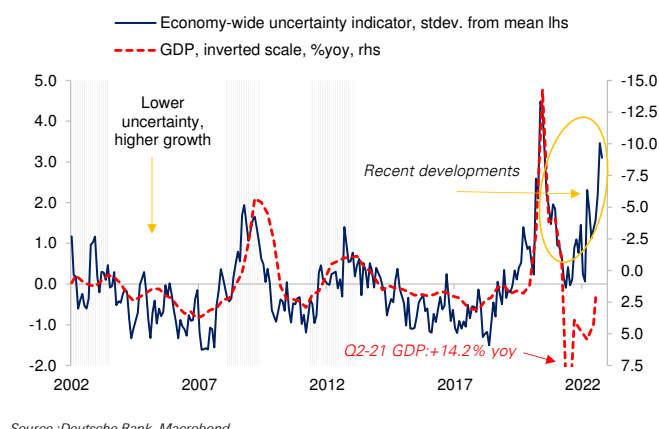
view for real disposable income over 2022-23 has declined by 4pp. Our price level forecast has been boosted over the same period, but higher wages and fiscal measures have helped to reduce the gap. We expect wage growth to reach 5.0% by end-2022 and moderate slightly in 2023. Fiscal measures — our expenditure-based indicator shows a fiscal easing of c. 2.5% of GDP in 2022 and another 0.5% of GDP in 2023 — are limiting the shock to consumers. But with the European Commission estimating that 70% of the measures introduced are untargeted, these may prove to be inflationary. On the other hand, elevated uncertainty—which has risen to levels above the GFC—will weigh on activity and may limit inflationary effects. Such an uncertainty shock, if persistent, would drag activity down by 3/4pp of GDP, although the anticipated nature of the energy shock may help to mitigate some of the downside.

Figure 20: EA still facing a 4pp hit to real disposable income...



Source : Deutsche Bank

Figure 21: ...and a very high level of economic uncertainty



Source : Deutsche Bank, Macrobond

**ECB tightening and the impending US recession will also be key drags on activity,** limiting the rebound in H2-23, when we expect a well-below trend recovery initially (0.5% annualised). The persistent gas price competitiveness shock and the impact of the US recession, partially offset by expected China reopening, will leave a soft exogenous growth outlook. Meanwhile, the ECB tightening cycle will weigh on growth gradually over the course of 2023, with the cumulative impact likely to peak in early 2024. Financial conditions have tightened gradually this year, and forward —looking bank-based indicators are now consistent with a material recession. If typical transmission models are to be believed, the combination of 350bp of hikes and balance sheet reduction steps by the ECB, could take about 2pp off cumulative GDP growth over the next two years, although this may be an upper bound.

**GDP forecasts and risks of 'double-dip' or delayed recession.** All things considered, the consensus view remains too optimistic and we forecast euro area real GDP growth of +3.4% in 2022, -0.6% in 2023 and +1% in 2024. We see two risks. One is a 'double-dip' recession, that is, the euro area emerges briefly from the imminent energy-shock recession before succumbing to renewed contraction before later in 2023 due to the scale of the economic headwinds. The second risk is that the euro area swaps an immediate recession for a recession later in 2023.

28 November 2022

World Outlook



What keeps euro area growth from receding in later in 2023 in our baseline is the expectation for a bounce in activity after the recession in Q4'22-Q2'23. The rebound helps absorb the growing headwinds. However, a highly anticipated shock may be a much less costly shock. Recent data have been outperforming expectations, raising the prospect of avoiding the expected near-term energy-induced recession or ending up in a shallower recession more narrowly centred on Germany and perhaps Italy, the two large member states most exposed to gas. However, a better near-term outcome would leave demand more exposed to recession in later in 2023 when the headwinds from US recession, monetary tightening, etc hit.

## D. Why central banks will follow through on their missions

Pressure is on the major central banks to ease up on their restrictive policies as they have hit financial markets, raised the cost of credit and portend negative impacts on economic activity and employment. This pressure is sure to grow substantially as job losses mount. In this section, we review the prospective paths of monetary policy and how the Fed and ECB are likely to react to the growing pressure to ease up.

### Fed

**The Fed continues to skew hawkish.** Fed officials have maintained their focus on achieving price stability as they have delivered the most aggressive tightening cycle since Volcker. Officials have been united in this response, with members across the hawk-dove spectrum emphasizing the need to achieve a "sufficiently restrictive" monetary stance to bring inflation back to target over time. Moreover, Powell and his colleagues have maintained this posture even as they have projected that it will take more "pain" in the labor market to tame inflation. Indeed, the Fed's forecasted rise in the unemployment rate to 4.4% next year would be consistent with historical recession experience which suggests the unemployment rate does not rise 50bps over the course of a year outside of a recession (i.e., the Sahm rule).

**5.1% terminal rate after a December downshift.** After delivering the most aggressive tightening cycle since Volcker, the Fed looks set to downshift to a 50bp hike in December. However, we have added one hike to our terminal rate with the Fed reaching 5.1% in May. Risks remain skewed to the upside, and we caution that the transition to pausing and eventual cuts may not be entirely linear. If elevated inflation and labor market imbalances persist, or financial conditions fail to tighten, a higher terminal rate could be needed. With a sharp rise in the unemployment rate and inflation showing clearer signs of progress, the Fed should cut rates by 200bps by mid-2024 when it approaches a neutral level around 3%. QT should cease when the Fed cuts rates, to ensure both tools are not working in competing directions. Balance sheet drawdown could be modified or halted earlier if reserves continue to fall faster than expected.

**Great Inflation taught lesson that risk management argues for benefits of skewing towards being too hawkish.** Powell and his colleagues have drawn heavily on the experience of the 1970s and early 1980s in adopting this stance. In particular, they have highlighted a few lessons from the Great Inflation period. First, it will ultimately be more painful to skew too dovishly rather than too hawkishly in setting policy. Second, allowing inflation expectations to become unanchored can require a tremendously disruptive policy response to correct. Third, taming inflation requires sticking with a restrictive stance and ensuring the central bank does not ease too quickly. To support this, they have pushed back on the market pricing of



rate cuts next year in order to keep financial conditions tighter.

**Expect greater disagreement in 2023.** So far, maintaining this uniformly hawkish posture has been relatively painless because the labor market has remained historically tight and, after tightening sharply earlier this year, markets have found a bottom and are proving more resilient. That said, it will be more difficult to maintain a united front on raising rates and keeping rates elevated if the labor market weakens as we anticipate. There are early hints of how divisions within the Committee could emerge, with dovish-leaning officials placing greater emphasis on the lagged effects of monetary policy and the downside risks to growth that could emerge from overtightening. Powell's press conferences have also featured more questions about the unemployment rise the Fed anticipates – something that will also likely feature in his Congressional testimonies over the coming quarters.

**Pressures are likely to intensify for a pivot.** For much of the post-Covid period, the Fed received unanimous support in Washington for its fight against inflation. However, that support has begun to fray somewhat, with several Democrats in Congress recently arguing for a more cautious approach that takes into account downside risks to the labor market. As the unemployment rate rises, these pressures will likely build. However, we are confident the Powell-led Fed will do what is necessary to bring inflation to heel. From a legacy perspective, Powell clearly understands that it is far better to be the Chair that regained price stability – even if through a recession – than one that allowed inflation to fester only to be dealt with in a more painful way down the road.

Figure 22: DB Fed funds rate projections

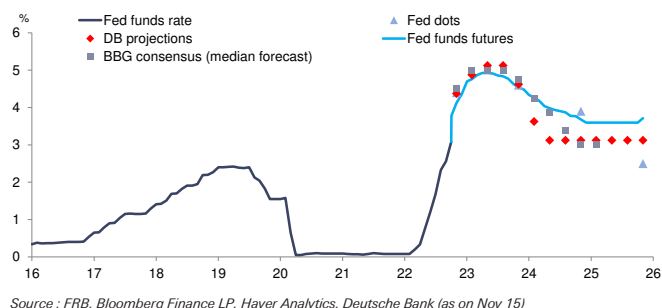
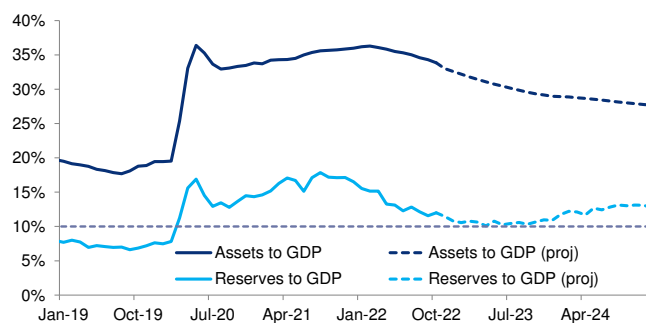


Figure 23: Reserves / GDP to get very close to 10% threshold Fed officials have cited



## ECB

**Entering the second stage of the tightening cycle.** The first stage involved a frontloading of policy rate hikes to raise rates as quickly as possible to neutral (c. 1.5-2.0%). In the second stage, the pace of hikes will slow as rates go above neutral and the ECB will initiate balance sheet consolidation via TLTRO repayments and APP QT<sup>7</sup>.

**3% terminal rate, risks skewed to upside.** The ECB has hiked policy rates to 1.5%, a 200bp increase. We expect 50bp hikes in December and February and 25bp hikes in March and May, implying a terminal rate of 3% in mid-Q2. There are risks on both

7 For more on ECB QT, see "On the principles of ECB QT", DB [Europe Blog](#), 16 November 2022.

28 November 2022

World Outlook



sides of this terminal rate view but the risks are skewing to the upside. In addition, we expect the ECB to shrink its balance sheet. By the end of 2023 we expect TLTRO repayments of EUR1.6tr and APP QT of EUR150-200bn. This would represent a c.20% contraction in the balance sheet.

**Downshifting the pace of hikes.** In the three months to October, the ECB hiked by 200bp<sup>8</sup>, three times the previous maximum pace. The ECB may only be halfway through its tightening cycle – and balance sheet consolidation will add to the monetary tightening. The impact on the economy of such a large and rapid tightening on the economy is uncertain. The ECB is sounding more cautious, saying that the path of policy going forward will depend on the cumulative tightening to date and the lags in transmission. This is consistent with slowing the pace of hikes – but not necessarily consistent with a lower terminal rate given the high level of inflation.

**Political pushback.** There have already been several comments from euro area political leaders that could amount to external political pressure to reduce the volume of monetary tightening in the euro area. The ECB is responding to this external criticism in two ways. First, by pointing out that the ECB is an independent institution tasked by the EU Treaty with the goal of price stability. Second, by arguing that the best contribution the ECB can make to economic and financial stability is to preserve the purchasing power of the euro. The ECB could present a downshifting in the pace of hikes as a contribution to easing the cost-of-living crisis by ensuring that excessive tightening is avoided.

**Tensions between monetary and fiscal policy.** Given double-digit inflation and the need to tighten the monetary policy stance, the extent of easing of fiscal policy to protect the economy from the cost-of-living crisis is making the ECB nervous. The IMF has estimated that a targeted fiscal policy to shield the economy from the rise in energy prices should cost no more than 1% of GDP. The actual fiscal easing in 2022 is more like 2.5% of GDP. This implies a risk of clash between monetary policy and fiscal policy in the euro area. President Lagarde already mentioned the possibility of “*harder monetary policy measures*”<sup>9</sup> if euro area fiscal policy becomes counterproductive<sup>10</sup>.

**Building inflation-fighting credibility in challenging times.** Finding consensus on the ECB will not be easy. Indeed, stresses are already evident. The Governing Council has a common determination to hike, but there is an emerging disagreement on the pace. Eventually that will become a disagreement on the terminal rate itself. Given the supply-driven nature of inflation in the euro area, some can question the appropriateness of monetary tightening to solve the problem. But in the end, we assume counterarguments that not all the inflation is supply-driven and that the threat of de-anchored inflation expectations is serious will carry the day. The ECB has so far signaled insensitivity to mild recession. It is still a relatively young central bank and has an opportunity to build its credibility. To the extent that it sees itself as the heir to the Bundesbank, it will want to be as resolute as possible in facing the current inflation challenge.

**Policy rule points to upside.** Our first-difference policy rule says that ECB policy rates should rise to 3-3.5% in 2023 (based on the latest ECB staff macro forecasts

<sup>8</sup> The ECB hiked the deposit facility rate by 50bp in July, 75bp in September and 75bp in October.

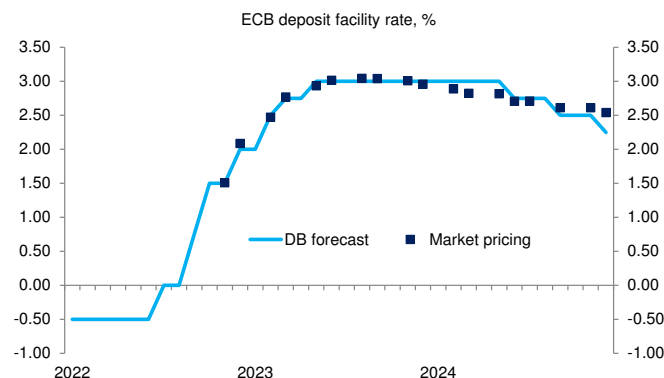
<sup>9</sup> 27 October ECB press conference.

<sup>10</sup> “Euro area fiscal impulse: risks of a clash with monetary policy”, DB [Focus Europe](#), 17 November 2022.



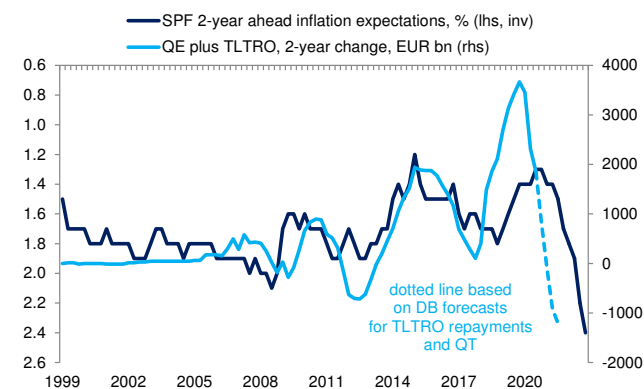
published in September). This is consistent with some upside risk to our core 3% terminal rate call. We then expect the ECB to pause at 3% for about a year, during which time real policy rates will rise as headline inflation declines. Our baseline has the ECB starting to cut rates in mid-2024 by a gradual 25bp per quarter until the deposit rate falls to 1.5%, around neutral, later in 2025. This level of policy rates would allow the gradual APP QT to continue despite the deposit rate cuts.

Figure 24: The market has converged to the DB forecast on ECB rates



Source : Deutsche Bank

Figure 25: The high level of inflation expectations implies a substantial contraction of the ECB balance sheet



Source : Deutsche Bank, ECB

## E. Bottom line on the war against inflation

**Central banks are catching up.** The Fed and ECB were caught behind the curve on inflation. Right-sizing the monetary policy stances in these regions has taken some time, but with a substantial front-loading of tightening, central banks are now better positioned to deal with the inflation problem, even if recessions ultimately prove to be an important ingredient in putting the inflation genie back in the bottle.

**But ample work remains to be done.** Monetary policymakers cannot rest on their laurels yet. They still have some lifting to do to get to what we see as needed terminal rates of 3% for the ECB and just above 5% for the Fed in the months ahead. Evidence that inflation is beginning to moderate is tentative in the US, where several bouts of lower inflation prints over the past eighteen months ultimately proved illusory, and still ahead in Europe. It will likely be a few quarters before the full impact of tightening becomes more apparent in the inflation data. Even with recessions weakening demand and softening labor market conditions, we see inflation remaining well above central bank objectives through end-2023. Persistent upside forecast misses over the past year argue for central banks continuing to skew their policy responses in a hawkish direction.

**Euro area inflation to decline moderately in 2023,** with HICP easing from 8.6% to 7.5% on an annual average basis. Energy inflation will fall but remain positive due to lags in the transmission of wholesale gas prices, while food price inflation is boosted a bit further by the lingering war and weather distortions. Meanwhile, we see core inflation rising nearly a percentage point to just under 5% for the year on average. Core goods and services prices will be boosted further going into 2023, by (1) ongoing pass-through of elevated energy and food prices, (2) rising wage inflation combined with productivity growth that slows as the economy falters, and

28 November 2022

World Outlook



(3) moderately elevated inflation expectations. That said, these factors are expected to moderate and reverse as the year goes on and the impacts of the recession and subsequent slow recovery are increasingly felt. As a result, HICP on a Q4/Q4 basis should fall well below the annual average rate, to less than 5%. We see downward momentum in the second half of 2023 continuing into 2024 as higher unemployment further eases upward pressure on wage and price inflation. HICP and core inflation should moderate gradually through the year, eventually (by early 2025) returning to the ECB's target.

**US inflation to decline more rapidly in 2023**, from 8.1% to 4.3 for the headline CPI on an annual average basis. The contributions of energy and food prices over the year ahead are more constructive in the US case. In addition, unlike the Euro area, core inflation should moderate throughout the year, by a couple percentage points. The decline in core inflation is primarily driven by an outright drop in core goods prices, which rose more sharply in the US than the EA this year as past policy stimulus triggered a surge in demand for goods items. With the impact of this stimulus fading, supply chain disruptions easing, and consumer demand rotating increasingly toward services, inventories have been rising and broader cuts in goods prices have emerged. That said, lagged effects of a tight labor market are likely to keep core services inflation above pre-Covid rates for some time, even with rental inflation likely to moderate significantly. Assuming the very recent steepening of the Philips Curve persists and inflation expectations remain anchored – two key sources of uncertainty about the inflation outlook – the economic downturn and elevated unemployment are expected to continue to moderate inflation through 2024, much the same as in the EA. We see the Fed having returned inflation to target levels by 2025.

**Inflation risk skewed to the upside.** The risk is that the inflation regime has shifted more permanently into a faster mode or will be slower to unwind than assumed. As our colleague Jim Reid recently pointed out, when inflation has reached these levels in the past, the normalisation has been slow on average. For sure, given the already tight labour market, and some evidence that inflation expectations continue to drift higher, a more ingrained wage-price spiral cannot be ruled out. Indeed, the recent trend in US unit labor cost growth is more than double the level consistent with the Fed's inflation objective. Continued fiscal stimulus could help drive this outcome. That is a bigger risk in Europe than in the US, where a gridlocked Washington is unlikely to provide additional support to demand in the near-term. That said, even in the US, there is some meaningful fiscal support being provided by state and local governments. Further price spikes in highly visible consumption items, including energy and food, could also risk an unanchoring of inflation expectations that would lead to more persistent price pressures.

**Policy rate risk skewed to the upside.** With inflation risk skewed to the upside of our baseline forecasts, we see the risks to central bank responses as being skewed commensurately in a hawkish direction – to the upside of our core 3% terminal rate forecast in Europe and to our baseline 5+% view in the US. Failure of inflation to show signs of moderating, labor markets remaining tight, or financial conditions becoming impervious to central bank signals, could all necessitate a more aggressive response. In Europe, the market would need to view Italy as eligible for the ECB's TPI stability purchases if the central bank's move to a higher terminal rate was to avoid running into headwinds from market fragmentation.

**Central banks to pivot by late 2023/mid 24.** The risks notwithstanding, our baseline view is that both the Fed and the ECB will be able to pivot toward moderate rate cuts

28 November 2022

World Outlook



in the latter part of 2023 and mid- 2024, respectively. The Fed will do so sooner and a bit more aggressively than the ECB, both because declining inflation will allow it to do so sooner and because its dual mandate and rising unemployment will dictate action in that direction more prominently. We see the Fed beginning to cut rates meaningfully only after the unemployment rate has hit 5% and inflation is on a clear downtrend. Once those conditions are met, we see scope for faster rate cuts than the market is pricing, with about 200bps of cuts delivered by mid-2024, to a 3+% fed funds rate. We expect the ECB to maintain a 3% terminal rate for over a year before pivoting to more gradual cuts and a slow unwinding of the tight monetary stance from mid-2024 as the central bank becomes more convinced that inflation will return sustainably to 2% over the medium-term. In both cases, having learned from the "stop/go" mistakes of the 1970s, we see monetary policy makers returning rates to near neutral levels, and not moving to more stimulative levels to boost recoveries until their inflation objectives have been fully achieved.

Figure 26: ECB has further to go on headline

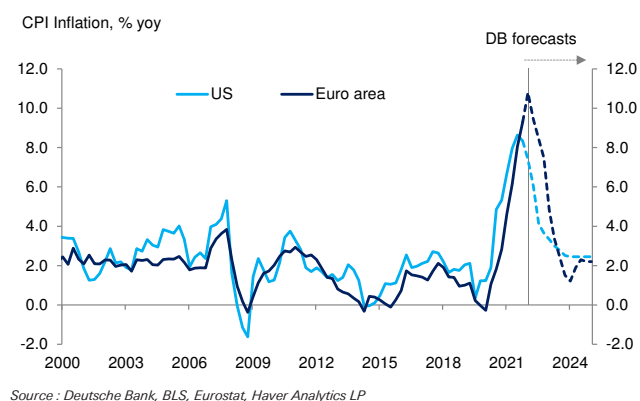
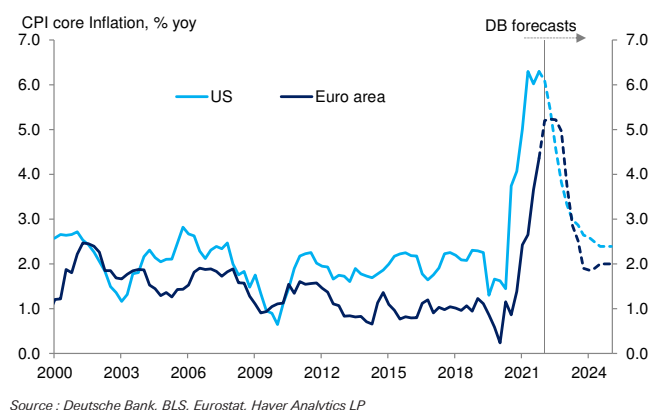


Figure 27: Fed has further to go on core



Peter Hooper, Matthew Luzzetti, Mark Wall & Team



28 November 2022

World Outlook



### III. Geopolitical/Other Factors affecting Global Outlook

As we reviewed in the preceding section, the war on inflation is central to our view that a global recession is looming. Almost as important—indeed more so in our view about growth prospects for Europe—have been developments in the geopolitical sphere, in particular the Russia-Ukraine war and its impact on key commodity markets. How that conflict progresses and impacts commodity markets is key to our outlook for Europe and the global economy more broadly. We address this issue in a number of dimensions, in the first subsection below.

The conflict will remain a source of European risk premia with the war likely to continue well into 2023, although the chances of a negotiated outcome will rise over time. Natural gas prices will remain historically very high, but risks of rationing have eased and, with the Kremlin's remaining energy leverage fading, energy price volatility should decline by spring 2023. The Western policy response has supported Ukraine and limited propagation of the energy shock, but risks are that EU cohesion and momentum for a unified policy response to the energy and security challenges could stall.

The second subsection overviews the US-China strategic competition—focusing on their struggle for technological primacy and information dominance—and their efforts to remove asymmetric dependence on each other. They point to higher regulatory and compliance costs and significant supply chain adjustments ahead. While the likelihood of tail event of more open geoeconomic conflict has been reduced, with the two reestablishing a line of communication since the Bali G20 meeting, there is no fundamental shift in the direction of their worsening relations—expect renewed tensions ahead as the US House of Representatives tightens scrutiny over China, while the Taiwan Policy Act and a general election in Taiwan wait in the wings.

Finally, we map the path to the end of China's zero Covid policy and explain why it is not going to be a straightforward path ahead. That is, China is unlikely to enjoy significant acceleration in sequential growth until 2H next year. Risks to our growth forecast of 4.6% are balanced, with a faster-than-expected opening suggesting 6% growth or above next year, while a tail, downside risk is for a delay in opening and stagnation until 2024.

#### A. Russia-Ukraine war, Prospects and Implications

##### Ukraine takes military initiative; negotiated outcome still far away

**Ukraine retook the military initiative** in late summer, leading to major setbacks for Russian forces, as Ukraine took back control of Russian-occupied parts of the Kharkiv region, and then the Western part of the Kherson region on the right bank of the Dnieper river. Moscow responded to the initial setback by announcing a “partial” mobilisation, holding annexation referenda in the occupied regions, and increasing the nuclear rhetoric. None of these steps prevented Russia's withdrawal from Kherson.

**The sides' minimal war aims remain incompatible**, which together with still dynamic military positions, limits prospects for any negotiated outcome in the near term, in our view. Kyiv continues to insist on a restoration of the full sovereign integrity of Ukraine, reparations and security guarantees among its conditions for any peace talks. Meanwhile, the Kremlin's recent rhetoric, which may have been aimed at getting a favourable cease fire deal, has not borne fruit. Russian missile



28 November 2022

World Outlook



strikes suggest a continued coercion strategy against both Ukraine (economic) and Europe (refugee influx threat). Notwithstanding the recent annexation referenda, maintaining the land bridge to Crimea is likely to be a minimal objective for the Kremlin for the coming months.

### 2023 Scenarios: Escalation risks remain but likely to decline over time

**Baseline scenario: war continues well into 2023, but chances of stabilisation rise over time.** Ukraine will look to maintain the military initiative, and hinder effective reconstitution of Russian forces, but further territorial progress is likely to be more limited during the winter. Russia would thus hold onto significant territory in the south of Ukraine for the near future. New offensives may emerge in the spring but prove slower moving than in 2022. Prospects of a diplomatic solution may rise over time, either as Ukraine makes more definitive progress in claiming back territory towards pre-24 February lines or as the war transitions towards a frozen conflict. Either of these outcomes may lead to strengthening calls in the West for a negotiated outcome.

From a sanctions perspective, the focus will likely be on implementation of the current sanctions regime and the upcoming EU embargo and G7 oil price cap (5 Dec for crude oil, 5 Feb oil products). The risk of a cut-off of gas flows via Ukraine this winter remains, but is not our baseline, while the grain deal is likely to be further extended in March.

**Downside scenario: Russia escalation.** Russia could escalate via more extreme or unconventional means against Ukraine and/or take asymmetric actions versus the West (with European energy infrastructure one area of vulnerability). Such escalation would most likely be in response to, or due to risk of, a catastrophic military collapse by Russian troops. New rounds of sanctions (e.g., full SWIFT shut-off) would follow, and remaining Russian energy flows to Europe would be disrupted. In the extreme event of nuclear use, the prospects of direct Russia-NATO confrontation would come into view and many non-aligned countries would join Western trade and energy sanctions.

Downside risks remain elevated near term, with Russian strikes against Ukrainian power infrastructure suggesting that escalation paths remain in play. But risks have eased since earlier in the autumn. First, the Kremlin's energy leverage – and hence the prospects of its coercion of Europe being successful – has declined. Second, despite earlier nuclear sabre-rattling, Russia's withdrawal from Kherson suggests that the Kremlin's red lines that would force it to risk a direct confrontation with NATO are not particularly close.

**Upside scenario: High-level peace talks emerge sooner.** This is most plausible if Moscow accepts a cease fire on terms acceptable to Ukraine due to military setbacks and domestic political and economic pressures. Sanctions would remain largely in place with slight roll back. Energy supply tensions may partially reduce but not normalize (e.g., increase in gas flows via Ukraine). However, we see the prospects for peace deal as slim in the near-term, as this is likely to require neither side to have been defeated, no frozen conflict to have emerged and a narrowing of the minimal war aims. Reparations, security guarantees for Ukraine, and questions over a strategy for containment of Russian aggression add complication for reaching a sustainable peace deal.

**Tail end scenarios** could increase in likelihood over the course of 2023. A negative outcome would see a reduction in Western support for Ukraine, leading to Russia

28 November 2022

World Outlook



retaking the military initiative and forcing a deal on its terms, with Putin succeeding in playing the long game in Ukraine. However, we see Moscow's declining energy leverage and the results of the US mid-term elections as likely limiting the already low likelihood of Western support dissipating in 2023. At the other extreme of scenarios would be regime change in Russia. There are few signs of this happening imminently, but ongoing military setbacks and rising economic pressures may increase the risk of an elite coup or a political transition as the 2024 presidential election comes into view<sup>11</sup>

### Key themes for the evolution of the war in 2023 and beyond

**EU and US support remains crucial for Ukraine.** Ukraine remains highly reliant on Western support, both military and financial. While the US stands out by far in terms of military assistance, the EU's financial assistance (supranational plus national level) largely matches that of the US. The recently proposed [EUR 18bn aid package](#) by the EU for 2023 would provide Ukraine with stable funding of EUR 1.5bn a month. With the US administration pushing to commit a similar amount, if both packages are finalised, this would largely cover Ukraine's monthly funding needs for 2023 (estimated at \$3-4bn a month). In turn, this should support the economic sustainability of Ukraine's war effort in 2023.

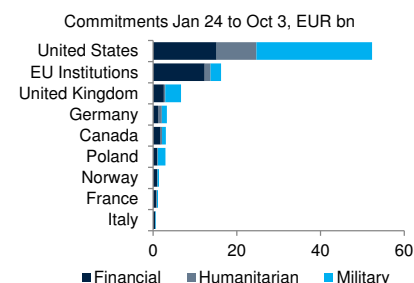
In the US, a divided Congress may result in greater scrutiny of the assistance to Ukraine, but the results of the recent mid-term elections are consistent with support for Ukraine remaining a bipartisan issue in 2023. In the EU, there are so far no signs of European public opinion shifting against providing Ukraine with the needed support yet, although there are considerable country-by-country differences. The more manageable gas crisis outlook over winter 2022 should also limit the calls for offering concessions to Russia to end the war, in our view.

**Russia's economic capacity and public mood.** The Russian economy has fared better than expected in 2022, with an annual GDP decline of 3.0-3.5% (DBe) versus early spring expectations ranging from 8% (DBe) to 10-12% (consensus). However, we believe mobilisation and falling energy revenues will likely cause another material decline (c. -3%) in 2023. High energy prices coupled with prudent fiscal and financial policies helped weather the initial shock. This came at a cost of nearly a 10% drop in real consumption, with a collapse in imports limiting the GDP decline. We see loss of Western technologies, increased state intervention and emigration as likely weighing on long-term potential growth.

More immediate downside comes via energy exports. Excluding one-offs, energy revenues are now down year-on-year for both gas and oil, and oil exports will decline further following the upcoming EU embargo and oil price cap. We believe, Russia has largely used up its gas leverage and its remaining energy leverage is likely to be exhausted by spring 2023. We do not expect a full-blown fiscal crisis, but we see the Kremlin as having to make difficult choices between funding the increase in defence and security spending, meeting social commitments, or having to resort to deficit monetisation.

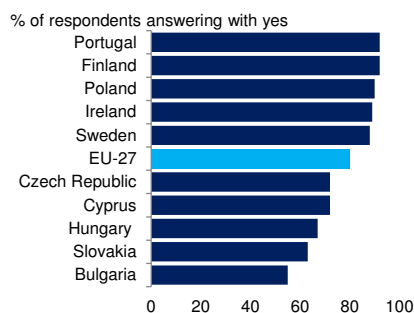
The limited opinion polling suggests that a majority of Russians remain detached

Figure 28: US and EU are key providers of support to Ukraine



Source : Deutsche Bank, IWW Kiel

Figure 29: Do you approve financial support to Ukraine?



Source : Deutsche Bank, Eurobarometer Survey May 2022

<sup>11</sup> We see a regime change scenario as unlikely to lead to any overtly liberal or pro-Western outcome, but it would likely favour some normalisation of relations for economic reasons. Restrictions on Russia's oil exports could also be used as a negotiating tool by the West..

28 November 2022

World Outlook



from the war, with heavy deferral to authority<sup>12</sup>. Prospects of a popular uprising remain low, but rising discontent could increase the chances of regime change over time.

**Role of 'neutral' countries - new momentum for peace talks?** Pressure on Russia from non-aligned countries would be an important factor for an eventual diplomatic resolution. During 2022, Moscow was able to disrupt the Western push to fully alienate Russia, keeping many major EM countries neutral. Russia will seek to deepen its trade and security partnerships with China and India, while Turkey has become both a key interlocutor in the Russia-Ukraine conflict and an increasingly important trading partner for Russia. In terms of investment and diplomatic support, Russia's relationship with China will be of particular importance.

However, there are signs that Russia's diplomatic influence is declining. In September, Putin acknowledged the concerns of both China and India over the conflict. At the end of October, Moscow quickly reversed course after attempting to suspend its participation in the Ukraine grain deal. Meanwhile, Putin's push for a "multipolar" world, stands in some contrast to a more "bipolar" framing of the US-China rivalry by China's leadership.

### How the conflict impacts energy markets

For more on our oil and gas view, see section [F. Oil and Gas](#).

**Oil.** Oil product inventory remains below normal and OPEC appears keen to preempt weaker prices to combat persistent underinvestment in supply. We see modest supply risk around the EU oil embargo and oil price cap as Asian buyers' interests are aligned with Russia's fiscal needs which limit risk of deliberate supply withdrawal by Moscow. We also see recession leading to a sharp global demand growth slowdown to +1 mmb/d in 2023 from +2 mmb/d this year. This is consistent with prices falling to USD 80/bbl, cushioned by OPEC signaling readiness to cut supply further. In the longer term we expect nominal prices to be supported around USD 80/bbl owing to capacity constraint and inflation in the oil services sector, and capex discipline driven by investor pressure for more sustainable industry returns.

**Gas.** Russia had used natural gas as its key economic weapon over the past year, but Europe has done well to achieve gas storage at 95% full (above 85% target), through a combination of increased LNG imports, demand conservation, and unseasonably warm weather this autumn. Gas supply risks for winter 2022-23 have eased, but Europe still needs to achieve sustained gas demand saving of at least 10% to get through winter 2023-24. In the baseline scenario, we see a possible 2023 range of TTF prices between EUR 90/MWh (below which Europe risks losing LNG to Asia) and EUR 160/MWh (triggering additional gas demand destruction). Key drivers will be winter weather, the sustainability of already-low Russian pipeline gas supply, and China LNG demand recovery. In 2024 and beyond, gas prices are set to remain several times above their historic levels and linked to Asian LNG prices. With global LNG production only set to see a material increase in 2025-26, it will take some years for the global gas market to normalise more fully.

### Implications of Ukraine war for the EU

<sup>12</sup> Source: Levada opinion polls, August 2022. See <https://www.levada.ru/2022/08/01/konflikt-s-ukrainoj-iyul-2022-goda/> and Russian Fields poll (28-31 July), available at <https://russianfield.com/nuzhenmir>. For more, see 15 September 2022 [CEMEA Macro Notes](#) report, "Russia-Ukraine: War, diplomacy and other themes".

28 November 2022

World Outlook



**Ukraine war as catalyst for turning the EU into a geopolitical actor?** The war has led to a re-priorization of EU strategic goals, putting a stronger focus on energy security and defense, and injected life into the buzzword of EU strategic autonomy. At the onset of the war, the EU's immediate crisis response was swift and unified as member states imposed an unprecedented level of sanctions on Russia, provided weapons and financial assistance to Ukraine, welcomed Ukrainian refugees (by invoking the [Temporary Protection Directive](#) for the first time), stepped up national defense spending and granted Ukraine EU candidacy status. However, nine months into the war, EU leaders are confronted with a domestic energy crisis, double-digit inflation and looming recession in several member states.

**Cohesion and momentum for a unified policy response has begun to stall.** As the focus shifts from crisis management to more fundamental reforms over the course of next year, the pace of reform momentum is likely to slow. So far, there has been no push to move to qualified majority voting in more policy areas (i.e., foreign or tax policy) and there are diverging views with respect to EU energy policy (e.g., joint gas purchases vs. a gas price cap on imported gas). Advancing strategic autonomy while still promoting free-trade remains a balancing act. Security and defense is another area where cohesion will be tested. Europeans will have to shoulder a larger share of the security burden, through both NATO and the EU. While national governments are already stepping up defense capabilities, momentum for EU collaborative capability projects still has to pick up. As long as foreign and security policy is decided by unanimity, lowest-common denominator policies are likely to prevail.

**Fast-tracking Ukraine's EU membership?** While Ukraine was swiftly granted EU candidate status in June, the road to eventual EU membership will be long and likely take at least several years. It remains to be seen whether Ukraine will be able to fulfill the seven conditions (mostly regarding the rule of law) as planned. These were set as a precondition for the launch of accession negotiations, and would be one more milestone on a long journey. As polls show that 70% of Ukrainians expect their country to join the EU within the next five years, these hopes might be disappointed by a lengthy process<sup>13</sup>. Still, irrespective of progress with respect to EU accession, integration into the EU's Single Market is already progressing with the EU having granted Ukraine temporary trade-liberalizing measures for one year in June 2022. This represents a fast-tracking beyond the progressive elimination of customs duties foreseen in the Association Agreement signed in 2014.

*Peter Sidorov, Michael Hsueh and Marion Muehlberger*

## B. The US-China strategic competition to intensify

**From trade war to strategic competition.** The US and China agreed on a [Phase One](#) trade deal in December 2019, halting further escalation of their tariff war - China agreed to import USD200bn of goods and services from the US over a two-year period, protect IP and end forced technology transfers, and open up the financial services sector, among other things. Fast forward to today, their deal has become but a faint memory, derailed by the Covid-19 pandemic. Rather, it has transformed into full-blown geoeconomic competition for technological primacy and information dominance. Their strategic competition has intensified, suggesting

<sup>13</sup> [https://neighbourhood-enlargement.ec.europa.eu/opinion-ukraines-application-membership-european-union\\_en](https://neighbourhood-enlargement.ec.europa.eu/opinion-ukraines-application-membership-european-union_en)

28 November 2022

World Outlook



significant adjustment in the global supply chain, with a priority given to advanced chips.

**Increasing regulatory costs.** The US sees China as "the only competitor" with both the intent and means to reshape the international order - and technology as "central" to its geopolitical competition with China. To ensure that its own technology, investments and expertise do not enable China to threaten its national security, the US has expanded both the depth and breadth of its export and investment controls. The US government has a list of "critical and emerging technologies" that inform the future efforts of the US to promote its tech leadership and which are subject to restriction in export, reexport and transfers (in-country). Restricted items of military end-use or "Military End User" in China have expanded over time. Moreover, the Foreign Investment Risk Review Modernization Act has rendered CFIUS filing mandatory for foreign investment in those technologies. The government has also banned investment in the securities of "Chinese Military-Industrial Complex Companies". Meanwhile, more than 1,000 shipments of solar energy components entering the US have been blocked since June under the Uyghur Forced Labor Prevention Act. There is also a threat of secondary sanctions, to which its strategic partnership with Russia and North Korea may render China more vulnerable.

China has taken an active stance and more vigorous measures against long-arm jurisdictions and sanctions, "to protect the interest of Chinese citizens and corporates", as reiterated in President Xi's 20th Party Congress [speech](#). China has adopted the Anti-Foreign Sanctions Law, which does not specify what constitutes 'interfering in China's internal affairs', allowing it to respond to other measures beyond sanctions, including export controls – it also does not limit its responses to entities and persons directly involved, but has expanded the scope to cover those related to them as well. China has the Unreliable Entity List and the Rules on Counteracting Unjustified Extra-territorial Application of Foreign Legislation and Other Measures at its disposal. The past experience of other economies, Japan and South Korea for example, suggests companies that get caught between US export controls (and sanctions) and China's countermeasures (such as trade and tourism restrictions) may even face popular boycotts. China's reiteration of the interest of Chinese citizens and corporates points to a broader basis for action – beyond a perceived threat to its sovereignty and security.

China's sphere of influence has increased significantly, via diplomatic outreach and investments, with the latter standing out as China's interests to be protected. According to the American Enterprise Institute, China's overseas investment and construction have totaled USD2.3tn since 2005, with energy as the top area of interest. For example, China is South America's top trading partner and a major source of both FDI and finance in energy and infrastructure, with its efforts supported by the Belt and Road Initiative. The tug of war between the two has also escalated in the South Pacific, further intensified following China's security pact with the Solomon Islands, which are located close to the border of the so-called second island chain. Economic interests are not the only motivator of China's investments in Africa, but geopolitics also play a significant role.

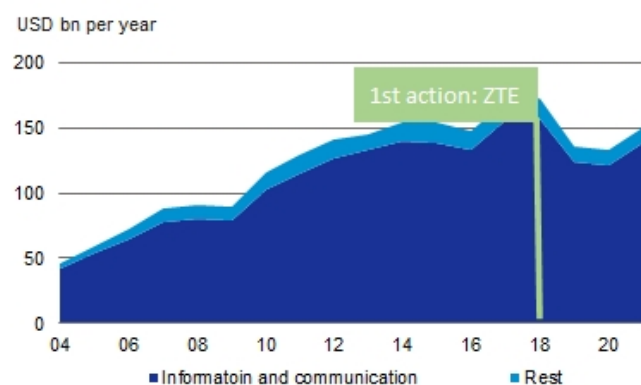
**Advanced chips at the heart of the struggle.** President Xi's speech outlining China's tech ambition came on the heels of the US Bureau of Industry and Security's decision to expand its export controls, to include advanced computing and semiconductor items—logic with the production of a technology node of 16/14 or less for example—to deny access to US-originated technology that enables China's



high-performing computing and automated super scale surveillance systems. Although temporary exemptions were given to companies that export/sell advanced chips to China, their further extension is highly unlikely and continues to motivate a shift in the tech supply chain—if not out of China then at least limiting further investment into China in the sector.

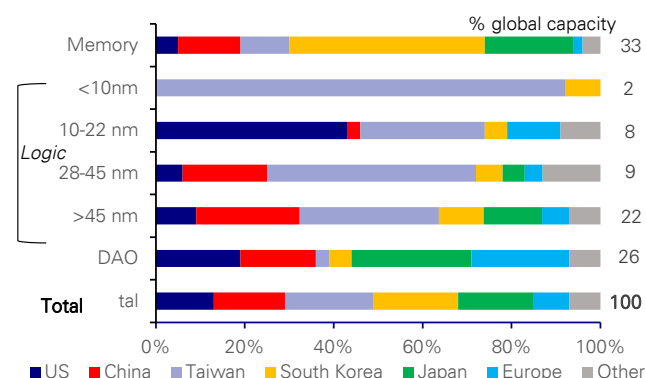
Although China is a major manufacturer of smartphones, electric vehicles and electronic products, among others, it is not so in the area of advanced global chips (below 10 nanometers), with zero market share—despite having invested billions of dollars over the past two decades in its semiconductor industry. Strengthening China's technological capacity and self-reliance is a top priority for China in the next 5 years, as outlined by President Xi, with science, technology and innovation being elevated in the government agenda. This points to more resources being put toward expanding government-led efforts in critical and fundamental research projects and provision of financial and tax incentives to innovative corporates. Like the US, China is also seeking ways to attract, train and retain talent.

Figure 30: US goods imports from China: advanced technology by types



Source : CENSUS, Deutsche Bank Research

Figure 31: Wafer fabrication by location



Source : US Commerce Department, Deutsche Bank

The US is not [aiming for self-sufficiency](#) in the semiconductor industry, as it would require upfront investment cost in the order of at least USD1tn and a 35-65% overall rise in semiconductor prices. That said, it seeks to onshore production of advanced chips and others that are vital to its security. The US has minimal onshore DRAM manufacturing capacity and none at the leading edge. Half of global DRAM capacity is in South Korea and most of the remainder (43%) is in Taiwan and China. 25% of US logic consumption goes toward more sensitive applications including artificial intelligence, data centers, and the military, as well as automotive applications (including military vehicles).

**Shorter supply chains and a battle for resources.** The CHIPS Act seeks to "establish and expand domestic production of leading edge semiconductors in the US, of which the US currently makes 0% of the world's supply" and to invest in R&D to ensure the next generation semiconductor technology is developed and produced in the US. Meanwhile, via the Inflation Reduction Act (IRA), the US seeks to reduce its asymmetric reliance on China in the area of green energy - the IRA is more comprehensive as it supports onshoring of EV manufacturing across the entire supply chain, including critical minerals, as discussed in [our earlier report](#). While the IRA points to a fall in China's market share in critical materials, it also



28 November 2022

World Outlook



poses external balance risks to "trusted partners" of the US in NE Asia, suggesting some adjustment may be needed as not to undo its own efforts to building resilient supply chains with those partners as envisioned in the US's Indo-Pacific Framework (IPEF).

Juxtaposed against surging demand for clean energy are the growing challenges to mining, production and trade of critical materials—reflecting environmental and social concerns and rising "resource nationalism". They include rising conflict over natural resource governance, opposition to mining projects based on environmental impacts, insufficient consultation with affected communities, and inequitable distribution of socioeconomic benefits. To address the latter, ASEAN economies have sought to leverage on their natural resources to attract investments in manufacturing – as is well reflected in Indonesia's nickel industrial policy to attract EV battery makers and others.

**Digital rules amid a battle for information dominance.** More than 5 billion people—over 63% of the global population—use the internet and more than 21 billion interconnected devices in the world send data (including across borders). In the rapidly-digitalized economy, non-kinetic tactics—electronic, cyber, informational and cognitive warfare, for example—and "information dominance", enabled by AI, advanced data analytics, face recognition and quantum superiority, are great force multipliers to any conventional military force. The US sees the IPEF as a platform for "writing new rules for the 21st century economy" by its members, addressing the issue of digital trade, data localization, technology barriers and those related to the internet, among others things. Related provisions were covered in the TPP (now CPTPP) but removed when the US withdrew. While some of those issues were covered in Chapter 12 E-Commerce section of RCEP, their application likely be low, given exemptions. Bilateral deals dominated in digital agreements in Asia instead, with Singapore leading the way.

For its part, the US finalized the US-JP Digital Trade Agreement, which sought to strike a balance between "free flow" and "trust" in digital trade. Nearer to home, it integrated comprehensive digital rules into the USMCA. In October, President Biden signed an Executive Order to take steps to implement the US commitments under the EU-US Data Privacy Framework that would allow for transatlantic data flows, enabling the USD7.1tn EU-US economic relationship. Although the US has not had a national standard, that may soon change with the American Data Privacy and Protection Act. Earlier, the US introduced the Protecting Sensitive Personal Data Act to require CFIUS oversight on foreign investment in US businesses that maintain or collect the sensitive personal data of US citizens. Although its internet remains walled-off, China adopted the Personal Information Protection Law, its first national data privacy statute, which sought to prevent cross-border personal data transfer with fewer protections for security, among other things.

**A volatile path ahead.** The US and China are locked in strategic competition, battling for technological primacy and information dominance. The US and China's continued efforts to secure resilient supply chains - to reduce asymmetric dependence on each other - point to their significant adjustment. In Asia, they have resulted in increasing interest in ASEAN, also motivated by the subregion's natural resources, while those with strategic goods and services remain vulnerable to restrictions and retaliation. Regulatory and compliance costs are likely to rise further - not limited to transaction in goods but also services, including data, as they are increasingly more politicized. While the likelihood of a tail event of sleep-walking into more open geoeconomic conflict has been reduced, with the two

28 November 2022

World Outlook



reestablishing a line of communication since the Bali G20 meeting in mid-November, a grand bargain also looks highly unlikely. This relatively calm period since Bali is likely to give way to renewed tensions in 2023. The Republican-led House may tighten its scrutiny over China's influence on trade and technology and US supply chain, with investigation into Chinese acquisition of US IP and investments by its entities in the US, among others. Meanwhile, the Taiwan Policy Act waits in the wings, as Taiwan prepares for its 2024 general election.

*Juliana Lee, Jochen Moebert and Hermann P Rapp*

## C. Mapping the path to the end of zero-Covid

**Not a straightforward path to opening.** China's "20 measures" announcement on 11 November was a turning point in its Covid policy. That said, its path toward a full reopening will not be straightforward – as has been the case for most economies around the world. Moreover, unlike Singapore or South Korea, we do not see China fully giving up its electronic health and mobility monitoring yet – that is, what China has developed over the last three years is likely here to stay.

**China is still in the early stages of a transition to a Covid-endemic life.** The government still has some work to do, as it needs to significantly increase vaccine booster coverage among its elderly population – at 66% currently. There is also the matter of the efficacy and stocking of antiviral pills. That is, China will likely need to prepare for a large-scale Omicron outbreak that could potentially result in a run on the country's limited hospitalization capacity – and worse a very high death toll – if not managed properly.

Although Omicron is less deadly than its earlier variants, it is far more infectious. In the first stage of reopening, we expect China to see a surge in Covid cases to levels not seen before, albeit with more circuit breakers (such as school closures and travel controls) to ensure that hospitals are not overwhelmed and to limit death tolls. Without the circuit breakers, China could see its Covid cases rising to several millions per day, as per the experience of other economies and scaled to China's vast 1.4 billion population. This transition stage should see reduced mobility and therefore subdued economic activity, owing to both the remaining restrictions and people voluntarily staying at home in fear of the virus. We assume that the psychological and emotional impact would be no different in China than elsewhere – an adjustment period is needed for the public to become less anxious and leave behind the stigma of having caught the virus.

**The length of the first stage of opening will likely be determined by the timing of the peak in death and hospitality rates,** which will crucially depend on the success of ensuring the efficacy and coverage of vaccines and the availability of antiviral pills.

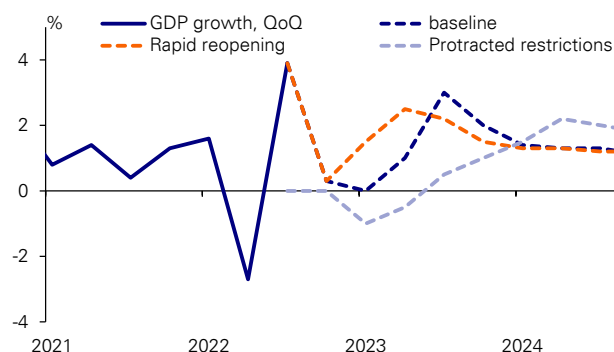
**China will be ready to enter the second stage of reopening** – a more rapid return toward normalcy – **once it sees the number of hospitalizations and death rates trend lower** on a sustained basis (and not necessarily lower Covid case numbers). While this stage will entail a return to "normal" economic activities, it will occur with self-testing and health verifications for access to "public space" remaining in place. Even so, industry and daily life should revive, which should allow for a surge in growth driven by pent-up demand, unless other, negative external shocks intervene.





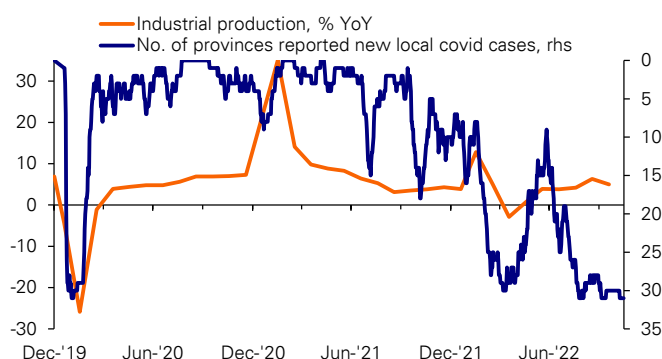
**Our baseline view is that it will take until mid-Q2 2023 for China to reach the second stage.** Until then, we see China's growth stagnating. Thereafter, however, we should see its growth surging sharply, led by pent-up demand, from 1%QoQ growth in Q1 2023 to 2-3% growth in 2H. We expect such strength to continue through 2024, allowing for 6.5% growth, up from 4.6% in 2023. Unless the Covid impact on the working Chinese population proves to be worse than in other economies, such a baseline scenario poses no greater risk to the global supply chain than it has thus far. On a macro level, the rising Covid cases have not had any material impact on industrial production or transportation of goods, although surging cases would no doubt weigh heavily on high-contact services.

Figure 32: China's reopening scenarios



Source : Deutsche Bank Research

Figure 33: Rising Covid cases since June 2022 have not had a material impact on industrial production



Source : Deutsche Bank Research, China NBS, China NHC

**An upside risk to our view is for China's Omicron outbreak to result in a significantly lower incidence of hospitalizations and deaths than what has been observed in other economies such as Korea, Hong Kong and Taiwan.** This could allow for a significantly shorter transition phase and bring forward China's recovery by a quarter and half. This in turn would mean China's growth could exceed 6% in 2023 (with an average QoQ growth of 2%) and 6.2% (1.3%) in 2024. In addition, a surge of Chinese travelers abroad would benefit neighboring countries, especially those who depend on tourism, such as Thailand. That said, China is likely to see sharply higher inflation – providing support for commodities, and partially countering effects of a G2 recession.

**A downside risk to our view would entail a run on hospitalization and deaths,** with more severe and prolonged mobility restrictions – by a few more quarters than our baseline assumption. This could delay China's economic recovery until 2024. In such a tail event, we estimate China's growth would hover around zero through 2023 before rising to 5.6% in 2024 (with a quarterly average growth of 2% QoQ sa). Such a scenario would open itself up to supply chain disruptions, despite its success this year, with a prolonged economic downturn resulting in higher credit defaults – while rising unemployment would continue to weigh on the property sector.

Juliana Lee and Yi Xiong



## IV. Regional Economic Projections

Figure 34: Quarterly real GDP growth patterns for key economies

	2022-Q3	2022-Q4	2023-Q1	2023-Q2	2023-Q3	2023-Q4	2024 %Q4/Q4	2025 %Q4/Q4
<b>GDP growth (% qoq)</b>								
World	1.2	0.3	0.2	0.6	0.8	0.6	3.3	3.2
US	0.6	0.6	0.4	0.1	-0.5	-0.6	2.2	2.1
Euro Area	0.2	-0.3	-0.5	-0.2	0.1	0.2	1.5	1.3
Germany	0.4	-0.7	-0.7	0.0	0.2	0.4	1.3	1.7
UK	-0.2	-0.1	-0.2	-0.7	-0.3	0.0	1.5	1.4
Japan	-0.3	0.7	0.3	0.3	0.0	-0.2	1.2	0.7
China	3.9	0.3	0.0	1.0	3.0	2.0	5.2	4.8
India	-0.2	1.3	2.1	2.7	0.4	0.9	6.8	6.5
Canada	0.4	0.1	0.4	0.2	0.2	0.2	2.3	2.1
Australia	0.8	0.8	0.4	0.4	0.4	0.4	1.6	2.0
South Korea	0.6	0.2	0.1	0.4	-0.3	0.4	2.3	2.0
Russia	0.3	-1.2	-1.4	0.2	0.6	0.6	1.3	1.3
Turkey	-0.2	-0.4	1.0	1.4	1.1	1.2	2.6	4.7
South Africa	0.4	0.5	0.3	0.1	0.2	0.5	2.5	2.6

Source : Deutsche Bank

Figure 35: Outlooks for unemployment and fiscal policy

	November Baseline			
<b>Unemployment (%)</b>	2022	2023	2024	2025
US	3.7	4.5	5.1	4.5
Euro Area	6.7	7.2	7.4	7.0
Germany	3.0	3.3	3.2	2.9
UK	3.7	4.6	4.5	4.2
Japan	2.6	2.6	2.9	2.9
<b>Budget deficit (% GDP)</b>	2022	2023	2024	2025
US	4.1	3.7	3.9	4.6
Euro Area	4.2	5.5	4.6	3.9
Germany	2.3	4.0	3.2	2.4
UK	7.0	5.2	3.5	3.2
Japan	4.9	4.1	3.6	3.2
China - official budget deficit	2.8	3.0	2.8	2.6
China - augmented fiscal deficit	12.0	10.0	9.0	8.0
India (Consolidated)	10.0	9.0	8.1	7.3
<b>Government debt (% GDP)</b>	Q4	Q4	Q4	Q4
US	95.8	95.5	97.3	97.6
Euro Area	94.0	96.0	96.0	96.1
Germany	65.7	66.9	66.7	66.7
UK	101.7	106.1	105.9	102.8
Japan	262.8	258.7	255.6	253.4
China - central government debt	21.6	22.6	22.2	22.0
China - augmented public debt	89.5	94.4	96.4	98.5
India	86.3	85.2	84.1	83.0

Source : Deutsche Bank

28 November 2022

World Outlook



Figure 36: World inflation receding significantly over the next several years

Headline CPI	2021	2022	2023	2024	2022	2023	2024	2025	2023	2024	
		% YoY				% YoY				% YoY	
		April baseline				November baseline				Bloomberg	
										25-Nov-22	
World	2.8	5.0	3.4	2.5	5.8	4.4	3.0	2.7	4.0	2.5	
US	4.7	7.2	3.9	2.9	8.1	4.3	2.7	2.5	4.3	2.5	
Euro Area	2.6	7.2	3.5	1.7	8.6	7.5	2.1	2.2	5.9	2.1	
Germany	3.2	7.0	4.0	2.1	8.7	7.9	3.5	2.6	6.5	2.5	
UK	2.6	7.7	4.5	1.9	9.1	8.2	3.8	1.7	6.9	2.6	
Japan	-0.2	1.7	1.2	0.9	2.4	1.8	1.7	0.8	1.6	1.0	
China	0.9	1.5	2.3	2.1	2.1	2.3	2.9	2.6	2.3	2.1	
India	5.1	5.8	5.5	5.2	6.9	5.6	5.2	5.0	5.0	4.6	

Source: Bloomberg Finance LP, Deutsche Bank

28 November 2022

World Outlook



## A. United States

*Earlier this year, we argued that the most likely trajectory for the US economy was for a recession to occur by end-2023. The motivation for that call was that the US economy was further away from the Fed's dual mandate objectives than at any point in four decades. The Fed would need to respond to these imbalances of elevated and persistent inflation, as well as a historically tight labor market, by tightening policy aggressively. With no historical precedent for a soft landing given a similar starting point, a recession seemed like a strong base case outcome for the US.*

**While the recent inflation data have shown some signs of softening, the Fed's continued aggressive policy response makes a recession the mostly likely outcome in 2023.** There are a variety of indicators consistent with this expectation. Our preferred recession model suggests that there is an 80% probability of a recession over the next twelve months. Other historically reliable leading indicators for recession are consistent with a downturn over the coming quarters, including yield curve slopes, bank lending conditions, the index of leading indicators, and consumer and business sentiment indicators.

**In terms of the contours of the downturn, we continue to anticipate a moderate recession beginning mid-2023** in which real GDP falls about 1.25 percentage points over three quarters and the unemployment rate reaches a peak of 5.5%. This would be consistent with a contraction in real GDP of 0.6% (Q4/Q4) in 2023 (+0.8% in annual/annual terms) and modest growth in 2024 (2.2% in Q4/Q4 and 0.3% in annual/annual).

**Several crosscurrents make it difficult to divine the precise details of the recession,** and there remains meaningful uncertainty around the precise quarters of negative growth and when the labor market will begin to soften. Constrained fiscal and monetary policies will provide less support during the downturn, which would amplify or extend recessionary forces. There are also downside risks to fiscal policy this year if House Republicans aim to leverage the budget process or debt ceiling to extract spending concessions. However, private sector balance sheets are in good shape and we do not see glaring imbalances in classic cyclical sectors.

**Despite lackluster growth in 2022, the US labor market has proven remarkably resilient and remains historically tight.** The unemployment rate has been near five-decade lows, and alternatively measures of labor market slack, such as the job openings-unemployed ratio and the quits rate, have been at record highs. The imbalances in the labor market are being driven both by elevated labor demand as well as constrained labor supply, mostly among the 55-plus age group and a lack of immigration. As a result, wage growth across a variety of metrics has been at the highest levels in about four decades.

**The recession is likely to alter the employment picture next year.** We have begun to see tentative signs of the labor market loosening, with the quits rate and vacancies peaking and wage growth moderating a bit. The unemployment rate has also risen a few tenths as employment growth slowed in recent months, albeit to a still robust pace from a historical perspective. With Fed tightening beginning to bite in 2023, the unemployment rate is expected to move higher, exceeding 4% by mid-year and reaching 5.25% by year-end before peaking at 5.5% in early 2024. Relative to the decline in GDP, the rise in unemployment is expected to be low from a historical perspective, as a chronically undersupplied labor market should heighten incentives to hoard workers and limit the extent of the rise in the unemployment

28 November 2022

World Outlook



rate.

**A weaker labor market should play a key role in moderating inflation pressures.**

Several decade high inflation has persisted for longer than initially anticipated, and has evolved over time to become more broad-based as well as more services and demand driven. Indeed, our comprehensive measure of underlying inflation is now about 1.5 percentage points above the Fed's objective. Moreover, during the past three months, data from the SF Fed suggests that demand factors have accounted for about three-quarters of the rise in the core PCE inflation data relative to before the pandemic. That said, inflation has likely finally peaked with the latest CPI print showing some welcome signs of moderation, as goods have begun to deflate and core services decelerated. These initial signals, along with disinflationary support from the projected recession, should lead to a clear downtrend in inflation over the next year, with core PCE and CPI ending the year near 3.25%, respectively. While inflation should continue to move lower in 2024, we also see factors that should lead to structurally higher inflation beyond this business cycle, including deglobalization and an aging global workforce, among others.

**A higher terminal after downshifting in December.** The Fed has delivered nearly 400bps of tightening since March and our shadow rate has risen above 5%. Looking ahead, the Fed has guided towards a downshift to a 50bp hike in December and indicated that the terminal rate will be guided by a search for a "sufficiently restrictive" stance. With the economy and labor market proving resilient in the near-term, we now see the terminal rate 25bps higher at 5.1%, which we expect will be reached in May. Risks remain skewed to the upside of this terminal rate expectation, and we caution that the transition to pausing and eventual rate cuts may not be entirely linear. That is, if elevated inflation and labor market imbalances persist, or financial conditions fail to tighten, the Fed could decide to raise rates after pausing, and a higher terminal rate could be needed and the Fed.

**Recession should eventually turn focus to the timing of cuts.** If the economic outlook evolves as we anticipate, with the unemployment rate beginning to move towards and above 5%, and inflation showing clearly signs of moderating, the Fed is likely to cut rates by year end. Our baseline anticipates a 50bp cut in December, followed by 150bps of cuts into 2024, which would bring the fed funds rate to around 3%. That level is consistent with our estimates of the neutral rate, which have risen since before the pandemic. If inflation fails to moderate as we expect, the Fed may undertake fewer cuts than in our baseline. One lesson Fed officials have clearly emphasized from the 1970 policy response is that the economy may have to go through a more painful adjustment if the Fed eases policy too early, i.e., prior to clear evidence that inflation is on a path back towards 2%. These lessons continue to convince Fed officials it is better to be too hawkish rather than too dovish in their policy response.

**QT is likely to end when the Fed cuts rates, if not sooner.** The Fed's QT program has recently ramped up to the maximum caps. However, the drawdown in reserves has been faster than anticipated, raising the prospects for tweaks to the program in the first half of 2023. Although there remains significant uncertainty around how reserves and the Fed's other liabilities will evolve – most notably ON RRP and the TGA – a continued rapid decline in reserves could lead the Fed to widen the spread between the rates on ON RRP and IORB sometime early next year. With the end point for reserves likely in the \$2.5tn range in our opinion, a slowdown in QT as reserves fall towards \$2.7tn cannot be ruled out. Ultimately, if these technicalities do not produce an early end to QT, we expect the Fed will halt balance sheet

28 November 2022

World Outlook



rundown when it cuts interest rates by year-end, as they will not want their two tools working in opposite directions.

*Matthew Luzzetti*

## B. Euro Area

*Even more than in 2022, we expect stagflation to define 2023. High inflation remains our key concern. Headline inflation is expected to be moderately lower than in 2022, but core inflation and wage growth will be higher – and a convincing peak in underlying inflation is unlikely until later in 2023.*

*The year will open with an energy supply-induced recession, but milder than we feared. What the euro area gains in terms of activity relative to prior expectations in the start of the year, it loses by the end of the year due to stiff recovery headwinds from US recession, an energy-related loss of competitiveness and the lagged impact of substantial monetary tightening.*

*We retain our 3% ECB terminal rate point forecast. There are risks on both sides, but these have moved from being balanced to skewed to the upside. The ECB is also accelerating exit from the balance sheet. The risk is a double-dip (or delayed) recession and persistent inflation.*

**Growth outlook all about headwinds.** GDP growth was significantly better than expected in 2022, despite the purchasing power shock from higher inflation (3.4% vs. 2.8% in the last WO in April). A strong jobs market, rising wages, fiscal easing, credit growth and absorption of excess savings meant that nominal spending growth was very strong. The outlook is darker. We have revised up our euro area GDP forecast for 2023 to -0.6% from the -1.2% rate we were expecting in September. We continue to expect recession in Q4'22-Q2'23 but the drag of the energy supply shock on the economy in the near-term is less than we feared only a few months ago. However, headwinds are set to limit the recovery from the second half of 2023 and we have lowered our GDP forecast for 2024 to 1.0% from 1.4%.

Mild weather, rapid substitution away from gas by the industrial sector and a better than expected rebuild of gas storage have reduced the risks of gas rationing this winter. This, the easing of supply chain problems and an easy fiscal stance are cushioning the real income shock and the uncertainty shock. We previously expected a peak-to-trough decline in GDP this winter of c.2pp, equivalent to the sovereign debt crisis recession. We now see a hit of c.1%, a more 'normal' recession.

However, the recovery out this recession will be less dynamic than normal because of three headwinds: a US recession due to hit in H2'23, a hit to competitiveness from lingering high gas prices (c.EUR100-120/MWh) and the lagged impact of ECB monetary tightening. There is also a risk of trade tensions with the US over industrial subsidies. We expect jobs to be fairly resilient through the widely anticipated winter 2022 recession, but the slow, sub-trend recovery to follow is likely to see the unemployment rate rise gradually from about 6.7% in 2022 to 7.4% in 2024.

**Risk of 'double dip' or delayed recession.** We see two risks to the growth outlook. One is a 'double-dip' recession, that is, the euro area emerges briefly from the

28 November 2022

World Outlook



imminent energy-shock recession before succumbing to renewed contraction later in 2023 due to the scale of the economic headwinds. The second risk is that the euro area swaps an immediate recession for a recession later in 2023.

What keeps euro area growth from receding later in 2023 in our baseline is the expectation for a bounce in activity after the recession in Q4'22-Q2'23. The rebound helps absorb the growing headwinds. However, a highly anticipated shock may be a much less costly shock. Recent data have been outperforming expectations, raising the prospect of avoiding the expected near-term energy-induced recession or ending up in a shallower recession more narrowly centered on Germany and perhaps Italy, the two large member states most exposed to gas. However, a better near-term outcome would leave demand more exposed to recession later in 2023 when the headwinds from US recession, monetary tightening, etc hit.

**Inflation remains the key concern.** Inflation has surprised dramatically to the upside in 2022. Headline inflation may peak soon at around 11% but we are more concerned that inflation won't decline quickly in 2023, especially at an underlying level, and that the consensus and ECB are continuing to underestimate inflation. Inflation dynamics will turn more dovish if we are right about ECB tightening and slower growth, but not before late 2023. Critically, gaining control of inflation requires inflation expectations to remain anchored at 2%. There are some indications that the risks of de-anchoring are getting no worse.

We forecast HICP inflation to average 7.5% in 2023, not much slower than the 8.6% expected in 2022. This means the risk of a de-anchoring of inflation expectations will remain at first. Because of the rigid pass-through mechanics from wholesale gas prices into retail gas and power prices, energy will make a contribution to HICP in 2023 but as a much lesser rate than 2022; the decline won't be obvious in the annual data until 2024. Food inflation is expected to contribute more to HICP in 2023 than in 2022. Core will be faster too, averaging 4.8% in 2023 vs. 4% in 2022.

For 2024 we forecast HICP to average 2.1% and core to average 2.3%. Although close to target, these forecasts are predicated on 350bp of policy rate hikes and a 20% shrinkage of the ECB balance sheet before end-2023. The inflation forecast assumes that GDP growth slows enough to create enough spare capacity in the labour market for wage growth to move down along the Phillips Curve from 5% in 2023 towards 3% in 2025. This will only happen if inflation expectations are anchored. The risk is that wage growth declines more slowly.

**Fiscal policy buffering recession, adding inflation.** Using an alternative approach based on the European Commission's expenditure benchmark, we estimate that the fiscal stance eased about 2.5% of GDP in 2022 — more than twice what the IMF estimates is needed for a targeted response to the energy shock — and will ease a further 0.5% of GDP in 2023. This fiscal stance moderates the winter 2022 recession, adds to the risks of persistent inflation and, if the fiscal measures do not prove temporary, could give the ECB reason to lift policy rates above our baseline.

Better than previously expected growth and higher than expected inflation (higher tax revenues) mean an underlying improvement in fiscal positions. In other words, less increase in fiscal deficits despite the easy fiscal stance. Nevertheless, the deficit will rise next year. Having been 5.1% of GDP in 2021, we expect the euro area deficit to be 4.2% of GDP in 2022 and rise to 5.5% in 2023. This is about 0.7pp lower than our previous estimate despite the shielding measures. We expect the deficit



28 November 2022

World Outlook



to decline back to 4.6% of GDP in 2024<sup>14</sup>.

### **Monetary policy enters second stage of exit with balance sheet consolidation.**

The ECB hiked the deposit rate by 200bp between July and October. We expect the ECB to hike by 50bp at each of the next two Governing Council meetings in December and February and by 25bp at the following two meetings in March and May – coinciding with the end date for the Fed hiking cycle. This implies a terminal rate of 3% before mid-2023. There are uncertainties, meaning risks on both sides of this point estimate. Given our concerns about persistent inflation, the easy fiscal stance and the prospects for a shallower and narrower near-term recession, we now see the risks as being skewed to the upside. Previously the risks were balanced.

On the ECB balance sheet, we expect TLTRO liquidity to decline by c.EUR1.6tr in total by end-2023. We expect QT – specifically the phased exit from APP full reinvestments; we do not expect active sales of bonds – to start at the beginning of Q2'23. A phased exit would reduce the bond portfolio by about EUR150-200bn in 2023 and EUR300-350bn in 2024. The balance sheet consolidation will contribute to the tightening of the monetary policy stance at the margin. The increase in policy rates is the main channel for the tightening of the stance.

**TPI.** In our baseline, Italy does not require the activation of the Transmission Protection Instrument (TPI). We expect Italy to be seen as compliant with the EU fiscal and economic rules. Confidence in Italy's eligibility for TPI should mean the ECB's new anti-fragmentation tool can be an effective backstop. The continuation of flexible PEPP reinvestments until at least end-2024 will help. The stronger the market's confidence in the anti-fragmentation toolkit, the easier it is for the ECB to reach a higher terminal rate.

By mid-2024 we expect the ECB to be confident that medium-term inflation is re-anchoring at the 2% target. We expect the ECB to start reducing the terminal rate back towards neutral (c. 1.5%) at a rate of 25bp per quarter. A slow cutting cycle and avoiding stimulative, sub-neutral rates should ensure that monetary policy remains focussed on ensuring inflation returns to target in the medium-term. As long as policy rates are neutral or higher, the gradual QT should continue.

**Risks.** The primary risk is that inflation is more entrenched than either the ECB or the market expects, because inflation expectations become de-anchored and a wage-price spiral occurs. The tight labour market, fiscal easing and lingering supply shocks (e.g., food) increases the risks. One concern is the ECB loses its internal cohesion as unemployment starts to rise, allowing inflation to become more entrenched as a result. A second risk, which could be a consequence of the first, is fragmentation between member states. The tighter the monetary stance, the greater the pressure on the high debt member states. If political cohesion erodes, the market's confidence in the ECB's ability to lean against risk at a time of rising inflation could also decline. A third risk is a significant competitiveness shock from lingering high energy prices. A negative productivity shock would threaten the industrial base and add to medium-term inflation concerns.

*Mark Wall & Team*

---

<sup>14</sup> Under the Commission's proposed new fiscal rules, the 3% of GDP limit on deficits won't be relevant until after the fourth year of adjustment under the proposed new debt consolidation plans. See ["Difficulties of striking the policy balance"](#).

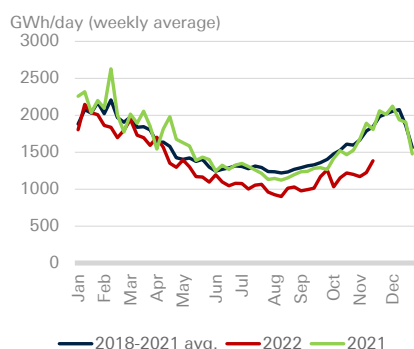




## C. Germany

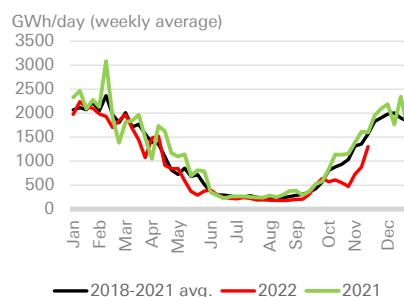
**Gas storage levels limit 2023 GDP contraction.** The diminished risk of physical gas scarcities and the EUR 200 bn (c. 5% of GDP) protective shield announced at the end of September have started to stabilize business expectations and consumer confidence in October and November. However, their depressed levels still indicate that the economy will likely go through a recession during the winter half.

**Figure 37: Industrial gas demand significantly below the 4-year average**



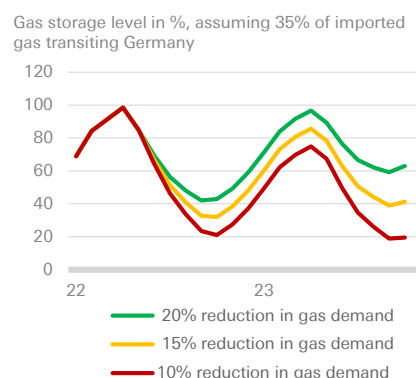
Source : THE and Federal Network Agency

**Figure 38: Households save less gas as temperatures start to fall**



Source : THE and Federal Network Agency

**Figure 39: No rationing this winter (and next) as our baseline assumption**



Source : Deutsche Bank Research

The diminished risk of physical gas scarcities and the EUR 200 bn (c. 5% of GDP) protective shield announced at the end of September have started to stabilize business expectations and consumer confidence in October and November. However, their depressed levels still indicate that the economy will likely go through a recession during the winter half.

**Real income shock for private household.** The measures of the protective shield combined with the three earlier, albeit smaller, fiscal packages will support private households with a total of EUR 194 bn<sup>15</sup>. While EUR 44.9 bn will have been spent by the end of this year, EUR 88.2 bn are earmarked for 2023 and another EUR 61.8 bn for 2024. Thus, in 2023 the relief amounts to almost 4% of households' nominal disposable income. Actually, slightly less as, for example, the gas price break will also benefit small SMEs. All in all, the relief will be clearly less than half of what households would lose due to inflation, which – excluding the various inflation-dampening effects provided by these packages (gas and electricity price brake in particular) – could reach between 8% and 9% in 2023.

With clearly accelerating wages – the recent settlement in the metal sector will yield a pay increase of 6 ½% to 7% p.a. if the tax-exempted EUR 3,000 payment (split over two years) is included – effective wages should increase by around 5 ½% in 2023. However, the increase in overall disposable income will be substantially lower as entrepreneur and property income (equivalent to 42% of wage income) will most likely shrink in 2023. We assume that households' real disposable income (including the fiscal support) will shrink by around 1% to 2% in 2023.

**Figure 40: Pessimistic – despite Nov. rise**



Source : IFO, Deutsche Bank Research

<sup>15</sup> Jahresgutachten 2022/23, Deutsche Finanzpolitik vor schwierigen Herausforderungen, Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung

28 November 2022

World Outlook



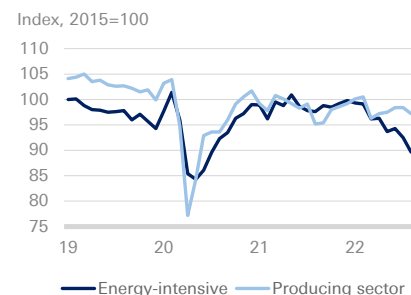
**No rescue from a falling savings rate.** In 2021 the household savings rate averaged at 15.1% due to “excessive savings” accumulated during the coronavirus pandemic. It has probably normalized to around 11% in 2022. The substantial drop in real incomes, more clouded income and labour market prospects (according to consumer surveys) do not suggest a further significant decline. Hence, we expect private consumption to decline by around 1 ½% in 2023. With inflation slowing to around 4% in 2024 and the labour market improving, slightly private consumption should increase by around 1.2% again.

**External environment providing another headwind.** With the Chinese economy not getting much traction in H1 2023 due to the very gradual departure from its zero-COVID policy and the US economy expected to enter recession in H2 2023, the external backdrop will not help the German economy, even when the domestic recession ends in Q2/Q3 next year. In a recent survey among German manufacturers, only 16% expect their exports to increase in 2023<sup>16</sup>. As a result, we expect net exports to subtract about 0.7 percentage points from growth in 2023. The recent terms-of-trade shock and the structural increase in energy costs will also dampen Germany’s export performance in the medium term.

**Investment spending: Projects put on hold.** Despite the November rebound in the ifo expectations component, it still provides clear evidence for the shock the corporate sector is going through. Surveys show that corporates are putting investment projects on hold given the high uncertainty and in order to compensate for their runaway energy and raw-material costs. World market prices signal that the peak might have been reached. In October producer prices fell by 4.2% mom, the first decline since April 2020. The yoy-increase slowed from 45.8% to 34.5%. At the same time, record order book levels which have calmed many corporates have started to shrink in September, for the first time since May 2020. This adds to concerns that the massive input cost increase of the last 12 months might be more difficult to pass on to clients. Given the expected US recession, we doubt that there will be a strong catch-up effect with respect to investment in the second half of the year.

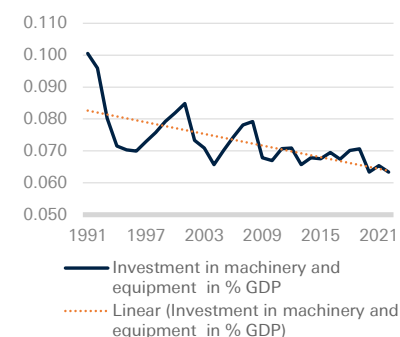
**The threat of deindustrialization.** The COVID pandemic and the uncertainty shock provided by the Russian-Ukraine war have reinforced the decade-long falling trend in the German investment ratio. It is estimated that these two factors have caused a loss of about EUR 125 bn in gross capital investment<sup>17</sup>. Although the German industry has so far weathered the blow from higher energy prices surprisingly well – in Q3 the seasonally adjusted industrial output was down by only 1.9% compared to Q3 2021 – the output in the energy-intensive sectors (such as chemicals and the production of metals, glass, ceramics, construction materials, paper and pulp) was, however, 9.7% (September) lower than a year ago. This has triggered a debate about a potential longer-term erosion of the manufacturing sector in Germany (deindustrialization). Past episodes of international doubts and German self-doubts regarding the survival of the manufacturing sector have – after some time – been proven unfounded by the flexibility and creativity of German SMEs. But the combination of structurally higher energy prices, a more challenging globalization backdrop and Germany’s skilled labour shortage suggest that the challenge could be a bigger one this time, notwithstanding the chances provided by the increasing global need for more climate-friendly technologies.

Figure 41: Gas savings weigh on industrial output



Source: Federal Statistical Office

Figure 42: German investment ratio: Secular decline



Source: Federal Statistical Office

16 Association of German Chambers of Industry and Commerce, Autumn business survey 2022

17 IW-Kurzbericht Nr. 91/2022

28 November 2022

World Outlook



**Residential construction: Double whammy.** The decade long upswing in the German construction sector has run into increasing supply problems, aggravated by the supply chain issues following the reopening of the global economy in 2021/22. The ECB's policy and the strong increase in 10y bund yields have pushed mortgage rates from their lows of around 1% in 2020/21 to around 4%. Together with the about 30% increase in construction costs over the last three years this has resulted in a 15.4% decline in building permits for new homes in the first three quarters of this year compared to the same period a year ago. Although commercial construction investment tends to be less interest-rate sensitive than private residential, there are also clear skid marks, especially with respect to smaller projects.

**Recession in winter half.** We expect GDP to decline by an average 0.75% in Q4 and Q1 2023. In spring, the further abating gas supply concerns and the increasingly felt fiscal support should stabilize the economy. However, given the US backdrop, quarterly growth rates should only rise to about 0.3% in H2. For the whole of 2023, German GDP should therefore shrink by 1%. The ongoing adjustment costs in Germany's energy supply will also weigh on growth in 2024, which we expect to reach 1.0%, with all components of domestic demand posting modest increases.

*Stefan Schneider*

28 November 2022  
World Outlook



## D. United Kingdom

*After a sluggish 2022, where underlying GDP growth disappointed, we expect the UK to slide into a downturn in 2023. We see GDP shrinking by 0.9% in 2023 (previously: -0.5%), before expanding by a more meagre 0.5% in 2024 (previously: 1%). What's driving the change in outlook for GDP? First, an unwind in fiscal policy. Second, more persistent price pressures. And third, tighter financial conditions.*

**Fiscal policy unwind to cost 0.1pp to 0.2pp of GDP in 2023.** Chancellor Hunt's fiscal policy reversals alone will end up lowering GDP by 0.1 - 0.2pp (based on our more conservative fiscal multipliers). Spending cuts and tax rises, announced as part of the Autumn Statement will also hit GDP with the fiscal stance projected to turn tighter from the next fiscal year onwards. The real pain, however, will start in 2024, with expected consolidation impacting growth more meaningfully in 2024 (-0.2pp) and beyond, as the Government returns to austerity.

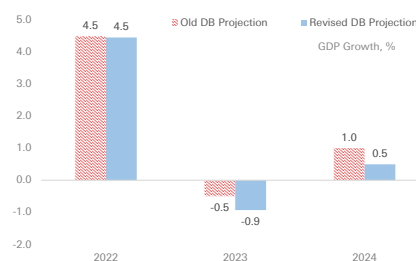
**Persistent inflationary pressures will shave off another 0.2pp downside to 2023 GDP growth.** Inflation will still be a problem for the UK next year. Despite the Energy Price Guarantee curtailing average energy prices in October 2022, CPI shot up to 11.1% y-o-y, 0.2pp above our forecasts. The good news? October CPI likely marked the peak in inflation momentum. The bad news? Inflation will likely remain more persistent than we previously thought. Core inflation will likely be supported by second round effects as a result of very strong energy and food inflation. Services inflation, in particular, will be driven by higher wage growth. Our updated projections have CPI averaging 8.2% y-o-y in 2023 (previously: 7.3% y-o-y), with inflation momentum slowing more meaningfully from the second half of next year. When do we think inflation will get back to around target? Around late 2024 to early 2025. Altogether, we see real disposable incomes shrinking by 2.3% (after fiscal support) – the biggest single year drop in the post-war era.

**Tighter financial conditions some offset to our previous projections, but weaker confidence to still hurt activity.** Though we think Bank Rate will peak lower than before (4.5% vs 5%), still tight financial conditions – both domestically and externally – as well as much weaker confidence will hurt activity even further. Higher interest rates will impact household and corporate balance sheets, with household consumption dragged by higher refinancing costs (2m households will refinance over the next 12m), and business investment and hiring hit by higher debt costs and less generous energy support too. Altogether, the faster drop in business confidence and oncoming recessionary environment will hurt business spending and hiring (we see business investment shrinking by 1.4% in 2023, and the unemployment rate peaking in Q4-23 at just under 5%).

**Bank of England rates still expected to peak at 4.5% – but risks to the downside.** At its November decision, the MPC explicitly noted that market pricing (4.6%) looked too high. Based on the Bank's inflation and growth projections, a likely landing zone would be somewhere around 4%. However, our own projections point to some meaningful upside to the Bank's growth and inflation forecasts. With the labour market likely to remain tighter for longer, weighed by a materially weaker labour supply, and ongoing labour disputes pushing wages further, we see the MPC forced to take Bank Rate a little higher than their ideal landing zone (4.5%). Risks are, however, tilted to a lower Bank Rate (nearer 4%), given the recent fiscal news and pencilled in fiscal consolidation over the Bank's forecast horizon.

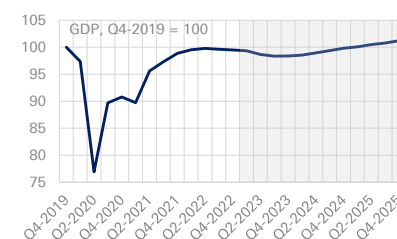
Sanjay Raja

**Figure 43: Less accommodative fiscal policy, persistent inflation, and weaker confidence to push GDP growth lower than previously forecast next year and in 2024**



Source: Deutsche Bank, Macrobond

**Figure 44: GDP likely to return to pre-pandemic levels only in 2025**



Source: Deutsche Bank, Macrobond

28 November 2022

World Outlook



## E. Japan

### Japanese growth to slow in 2023-2024 on overseas slowdown but should remain relatively firm

Japan's post-pandemic recovery this year has lagged other major economies, due primarily to the government's tough pandemic response. However, its stance now has shifted. Despite a record-high number of Covid cases in July and August, the government refrained from imposing harsh pandemic restrictions. Consumption has consequently continued to improve. The government also eased the nation's border controls in October, permitting foreign tourists again to enter for individual travel. Its slowness in scaling back pandemic rules means the economy has abundant room for catching up to other nations. In addition, the BoJ remains committed to its monetary easing stance even as other leading central banks tighten their policies. While this has had undesirable side effects, most notably a weakening in the yen and a deterioration in bond market functionality, the continuation of accommodative financial conditions has helped keep the Japanese economy relatively solid. The BoJ will adjust its policy framework next year as discussed below, but it should maintain an accommodative policy stance. The impact of the tightening action in the US and Europe will emerge more forcefully in 2023, which we believe will make a slowdown in Japan unavoidable. But it will be partly offset by the recovery in the Chinese economy. Therefore, the degree of the slowdown should be modest.

### Biggest focus for Japanese economy next year will be shunto wage hikes

The biggest focus for the Japanese economy next year will be the extent of wage hikes secured in the shunto spring labor talks. Japan's CPI inflation now tops 3%, but services inflation remains low below 1%. One reason is the limited growth in wages. A Rengo survey reveals that this year's shunto wage growth came to 2.1%, with base salaries increasing by a mere 0.6%.

We expect next year's shunto to generate wage growth of 3.5%. That would mark the strongest gain since 1993. The main factor behind this bullish forecast is our projection that inflation in FY2022 will hit a 30-year high of 2.7%, which will be difficult for the parties to ignore during wage negotiations. The relationship between inflation and wage growth in Japan in the early 1990s prior to the nation's deflationary phase suggests that 2.7% inflation would lead to wage hikes of over 4%. As a result, even considering the lingering deflationary mindset among both companies and households, we consider a wage increase of over 3% to be achievable. Labor unions are already asking for marked wage increases of 5-6%, and companies have shown sympathy to the idea that wages should incorporate the impact of inflation.

### Outlook for BoJ monetary policy revision

We believe a wage increase on this scale would have implications for BoJ monetary policy. The main reason that the BoJ has persisted with its present policy stance despite the various side effects, is the continued lack of any consistent rise in wages and prices. If shunto wage growth next year should climb to our projected levels, the BoJ's thinking should change as well. Moreover, we believe the nation's output gap will turn positive by next spring, just when the BoJ will be welcoming new leadership. These developments raise the chances of a revision in the bank's monetary easing. We are thus expecting a change in the bank's stance in 3Q 2023 after the shunto results are confirmed. Specifically, we believe it will shorten its YCC target yield from the 10y to 5y sector. If wage growth should prove even more rapid

28 November 2022

World Outlook



than we are predicting, the BoJ may consider the wholesale abandonment of YCC. Most economists at present do not anticipate a BoJ policy change until at least 2024, making us more hawkish than the consensus.

At the same time, we expect a downturn in the US economy and subsequent rate cuts, so the BoJ would have a limited window in which to alter its monetary policy. An unexpectedly early global economic falloff would raise the obstacles for BoJ action.

### Risks include financial market impact of BoJ action and political developments

Based on our monetary policy forecast, we believe one risk to the Japanese economy next year is the impact on financial markets of a BoJ policy change. Any adjustment in YCC will naturally put upward pressure on the 10y yield, though that pressure would lessen if UST yields are in decline at that stage as we are predicting. If the 10y yield should surge, such as a rapid leap beyond 0.5%, we imagine that the BoJ will aim to suppress yields by increasing its JGB purchasing. Unfortunately it is unclear whether the BoJ can succeed in this manner once the markets no longer believe that it will aggressively defend YCC. On top of that, the very nature of YCC makes it difficult for the bank to signal in advance a change in the policy. It is uncertain whether the BoJ can keep market expectations under control while tweaking YCC.

Another risk next year is Japan's political situation. Prime Minister Fumio Kishida's triumph in the Upper House election this July raised expectations of stable government rule with no need for a general election until as late as 2025. However, the administration's approval ratings have declined due to strong voter dissatisfaction regarding the LDP's close ties with a religious organization, nearing the danger zone of 30% in some polls. There is no obvious successor to Kishida at present, so any change in leadership would bring about substantial political uncertainty. If that were to happen in the near future, it could also impact the choice of a new BoJ governor.

*Kentaro Koyama*

## F. China

China's growth outlook in 2023 and beyond will critically depend on two factors, namely its handling of the Covid reopening and the future of its housing sector.

China's pivot towards a reopening may not be a straightforward process. [A two-stage gradual reopening](#) will be most likely, in our view. In the first stage, the reopening would be very gradual and cautious to slow the spreading of the virus, avoid a run on hospital resources, and keep the number of death levels acceptable to the public. Meanwhile, protection against the virus needs to be improved by further increasing vaccine booster coverage of the elderly (66% currently) and making antiviral treatment accessible to high-risk groups. A more rapid reopening is likely to begin only in mid-Q2 2023, in our view, once steady declines in hospitalizations and deaths are observed. Consistent with this reopening path, we think China's economic activity will remain subdued in the first half before bouncing back rapidly in the second half.

The housing downturn since mid-2021 has lasted longer than all the previous



28 November 2022

World Outlook



downturns. As the property developer funding crisis deepens, property sector policies have eased substantially: the down-payment ratio and mortgage borrowing rates have been cut to historical lows, purchase restrictions have been lifted in many cities, and developers are obtaining support for their access to financing. As such, policy is no longer a constraint to the recovery. The main reason why housing sales have still not rebounded, in our view, is because homebuyers are too worried about the economy and their jobs to commit to home purchases. Thus, a property market recovery can be expected to go hand-in-hand with a reopening, perhaps even leading the recovery if consumer confidence comes back faster than activity on the ground.

Consumer inflation has been subdued to date, owing to slack in the labor market and low wage growth. That could change once the economy enters a phase of rapid reopening. China's core inflation will likely rebound from less than 1% currently to 2% or higher, and headline inflation will likely reach 3% by early 2024. Inflation pressures should be partially offset, though, by softening global demand and commodity prices.

Both fiscal and monetary policy are likely to maintain their easing bias in the near term. The government may increase its official budgetary deficit slightly to 3% in 2023 from 2.8% in 2022. PBOC rate cuts are unlikely, as long as the Fed is still in a rate hike cycle, but there could be room for 1-2 more RRR cuts. Once the economy enters a post-reopening recovery, fiscal and monetary policy stances are likely to begin to normalize in the second half of 2023.

We forecast China's growth to rebound from 3% this year to 4.5% in 2023 and 6.5% in 2024, assuming a mid-2023 reopening. Quarterly growth should remain low at 0% QoQ in Q1 and 1% QoQ in Q2, but should surge to 3% in Q3 and 2% in Q4 once the economy reopens. The risks to our forecast are likely balanced: if the new dominating Omicron variants turn out to be much less deadly than previous variants, China's reopening could come sooner than expected and China's growth may exceed 6% in 2023. Conversely, prolonged restrictions owing to higher-than-expected Covid deaths could delay China's reopening and recovery to 2024.

The renminbi's devaluation is likely coming to an end. Its sharp depreciation against the USD in the past year is largely driven by a combination of several rounds of negative shocks from Covid outbreaks and an exceptionally strong dollar. Both factors are likely to change direction in 2023. We expect the RMB will strengthen to 6.8/USD by end-2023.

*Yi Xiong*



28 November 2022

World Outlook



## G. India

**Growth and fiscal:** We are forecasting **India's real GDP growth to slow down to 6.0%yoy in 2023, from a likely 7.0%yoy outturn in 2022** due to i) lagged impact of ongoing monetary policy tightening; ii) intensification of global growth slowdown and iii) fading away of domestic pent-up demand. Therefore, while we have a baseline growth forecast of 6.0% for 2023, it is possible that growth could be lower by an additional 50bps to 5.5%, if the global growth slowdown turns out to be more severe than currently anticipated. India's "beta" to global growth is about 40bps, which means that every 1% downgrade to US + EU growth from the baseline, can potentially reduce India's growth by 40bps. We have factored in the prospect of continued global headwinds in our India growth forecast for 2023, but the risks are still arguably biased to the downside. While India's growth is likely to slow down incrementally in the quarters ahead, we expect 2023 real GDP growth to be more in the 5.5-6.0% range rather than 5.0-5.5% band due to two key factors:

- First, **we expect the FY24 Union Budget to be an unambiguous growth-oriented budget**, as this will be the last full-fledged budget before general elections in May 2024. We expect the centre's fiscal deficit to be lowered to 6.0% of GDP in FY24 (from 6.4% of GDP target in FY23), which should be sufficient to provide a generous fiscal push and support growth over 5.5%yoy. Once the general elections are behind us, we would expect fiscal consolidation to pick up pace, with the centre's fiscal deficit likely to narrow to 5.25% of GDP in FY25 and finally to 4.5% of GDP in FY26, as per the medium-term macro framework.
- Second, the Indian **corporate sector** has not invested for almost a decade and with capacity utilization improving, they **may consider investing in fresh capex** for the next cycle. Private sector investment is 75% of total investment; so even if the private sector decides to increase their capex spending somewhat over the next few years, this will be a good support for incremental growth and more importantly, result in good quality growth.

**On balance, we think India can manage to sustain an average real GDP growth of 5.5-6.0% over the next few years despite global headwinds, as it is primarily a domestic-demand oriented economy.** Also, the various supply-side reforms that have been initiated over the last several years in India will start providing macro dividend incrementally as each year passes by (as is currently reflected by GST collection momentum), in our view.

**Inflation:** For CPI inflation, we expect 5.0-5.50% to be the new normal in the period ahead (vs. RBI's target and pre-pandemic average of 4%), while inflation expectations of households are likely to average around 10.0-11.0%, 100-200bps higher than the pre-pandemic levels of 9.0% average. **We are forecasting India's CPI inflation average to ease to 5.6% in 2023 and further to 5.2% and 5.0% in 2024 and 2025 respectively, from a likely 6.9% outturn in 2022.** Our analysis suggests that volatile headline CPI inflation will converge to a core inflation (CPI ex food and fuel) average of 5.5% in 2023 and about 5.0% in 2024 and 2025.

**Monetary policy:** We are forecasting **another 35bps repo rate hike in the 7th Dec'22 policy, taking the policy repo rate to 6.25% by the end of 2022. Beyond Dec'22 however, we are not sure whether the MPC will want to move further in the Feb'23 meeting with a last 25bps hike to take the repo rate up to 6.50%.** Between Dec and Feb, the headwinds to growth may become more evident and given the lags in monetary policy transmission, the MPC may decide not to hike further, allowing the lagged impact of the cumulative rate hikes to have its desired impact

28 November 2022

World Outlook



on the real economy and core inflation. For another rate hike to happen in Feb'23, post the Dec'22 meeting, the inflation outlook has to deteriorate meaningfully and significant depreciation pressure on rupee has to re-emerge, in our view. So the bar for a rate hike in Feb'23 will be high, in our view, particularly given that two MPC members are in favour of a pause even in 4Q'22. Overall, we see India's policy repo rate peaking at 6.25-6.50%, in line with our [long-standing view](#).

Based on India's growth-inflation trajectory for 2023 and 2024, **we think the RBI will likely start cutting rates from Dec'23 onward**, converging with the Fed rate easing cycle. Under our base case scenario, **we are forecasting the repo rate to reduce to 5.50% by 2Q of 2024, penciling in a cumulative 75bps reduction** (25bps cut in each of Dec'23, Feb'24 and April'24 meetings) from a peak of 6.25%, likely to be achieved by Dec'22. However, if the RBI decides to take the peak repo rate to 6.50% in Feb'23, then there could be space to cut 100bps and reduce the repo rate to 5.50% by 2Q'24. This forecast is based on the assumption that CPI inflation will moderate to about 5.0% average by 2024, which will allow the RBI to start rate cuts preemptively from Dec'23 onward, aligning with the timing of the Fed rate cut cycle and factoring in the considerable transmission lags that are characteristic of India's monetary policy.

**External outlook:** We are forecasting India's **current account deficit (CAD) to moderate to 2.5% of GDP in 2023, from a likely 3.3% of GDP outturn in 2022**. India's external sector outlook will depend to a great extent on where Brent settles next year, as this can make a significant difference to India's trade deficit and CAD profile. As far as capital flows are concerned, India should be able to attract sizable long-term FDI inflows, keeping in line with past trend and FII equity inflows could also pick up meaningfully next year, as India's growth outperformance relative to other EM peers widen. As far as FII debt inflows are concerned, a potential announcement to include India in **global bond indices** could lead to passive inflows, albeit this is expected to be more backloaded. Overall, we do not expect the external outlook to be as challenging next year as in 2022. But the jury is out on this, as higher-than-anticipated global oil prices and increased geopolitical tensions can readily put pressure on the external sector and rupee compared to what we have factored under our base case scenario.

While India's **reserves adequacy metrics** have worsened in 2022, they are still stronger compared to 2013 (taper-tantrum period) and indicate lower vulnerability on part of India as compared with most other major EMEs (India's external debt to GDP ratio at 19.4% is the lowest among major EMEs, while short term debt share in total debt is at 21%). However, given that FX reserves have fallen by more than USD100bn in 2022 to arrest unwarranted volatility in FX markets, we would expect the RBI to buy USD, if the rupee were to show signs of sustained appreciation pressure on account of potential large capital inflows. **We expect the RBI to be proactively involved in FX intervention, to keep rupee broadly within the 80-83 range**, though we don't rule out intermittent overshoot and undershoot from time to time. We expect INR/USD to be around 82.50 levels by end-Dec'23. As far as the need for replenishing FX reserves are considered, one potential positive could be if DXY continues to weaken meaningfully through 2023. This can then add to valuation gains for INR and push up FX reserves (in contrast to the large valuation losses that have led to the depletion in India's FX reserves in 2022).

*Kaushik Das*



## V. Market Forecast Summaries

Figure 45: Market forecasts

Financial variables	2022-Q3	2022-Q4	2023-Q1	2023-Q2	2023-Q3	2023-Q4	2024-Q4	2025-Q4
Fed Funds Rate	3.125	4.375	4.875	5.125	5.125	4.625	3.125	3.125
ECB Deposit Facility Rate	0.75	2.00	2.75	3.00	3.00	3.00	2.25	1.50
BoJ Policy Rate	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10
10Yr US Treasury (spot)	3.83	3.75	4.00	3.95	3.65	3.65	NA	NA
10Yr German Bund (spot)	2.11	1.95	2.50	2.60	2.60	2.60	NA	NA
S&P 500 (spot)	3586	4200	4500	4500	3250	4500	NA	NA
STOXX 600 (spot)	388	460	495	495	360	495	NA	NA
US HY (spot)	552	425	465	570	740	860	NA	NA
US IG (spot)	159	130	140	170	200	235	NA	NA
EUR HY (spot)	624	460	485	590	800	930	NA	NA
EUR IG (spot)	225	165	165	185	210	245	NA	NA
EUR/USD (spot)	0.98	1.05	1.05	1.05	1.08	1.10	1.25	1.30
Commodity Prices	2022-Q3	2022-Q4	2023-Q1	2023-Q2	2023-Q3	2023-Q4	2024-Q4	2025-Q4
WTI (avg.)	91.4	91.0	96.0	91.0	81.0	76.0	76.0	79.0
Brent (avg.)	97.7	95.0	100.0	95.0	85.0	80.0	80.0	82.0

Source : Deutsche Bank

## A. Equities

**Poor late-cycle fundamentals but already low positioning make fertile ground for bear market rallies.** Since the Fed began to provide forward guidance to a full rate hiking cycle in late 2021, market attention has focused increasingly on the fact that most (8 out of 10) ended in recessions. This “forward guidance to a recession” saw cuts in equity positioning front-run the actual slowdown in growth in contrast to typically moving with them. By the mid-June lows in equities this year, our measure of aggregate equity positioning had fallen to the bottom of its range outside of recessions (down to the 5th percentile) and the S&P 500 had already put in an average recession decline (-24%)—a full year ahead of our house forecast for a recession. While recession-related bear markets typically see several (on average 3) sizable (on average 10%) bear-market rallies, the current bear market has already seen more (5). With the S&P 500 having rallied recently by around 12% from its mid-October lows, our measure of aggregate equity positioning has risen only modestly and remains very low (12th percentile).

**Our baseline view for the S&P 500 in 2023 sees the current bear market rally continuing for now, then following the typical recession playbook:**

- **Current bear market rally to continue into Q1.** We look for a squeeze on systematic strategy positioning from extreme lows as vol, a key driver of their positioning, comes off. Vol across asset classes has been elevated for an extended period now, in our reading reflecting rates (Fed) vol, which has been coming off recently. In equities we look for the decline in implied vols that have already been coming off to be followed by declines in realized vols which are key to systematic strategy positioning. We see aggregate equity positioning moving up to near neutral by end Q1;
- **Market flat to slightly down in Q2 as concerns about recession in Q3 build.** This would be in keeping with the (pre-) recession playbook;
- **Down significantly in Q3 (S&P 500 3250) as recession begins.** As we have noted previously, historical peak-to-trough recession declines are well

28 November 2022

World Outlook



explained by initial valuations which were very high and by the magnitude of the earnings decline (we expect -12% vs an average -15%). Putting these together points to a -33% decline.

- **But bottoming half-way through and recovering the decline as is typical during Q4.** The recession playbook of bottoming a little less than half-way through recession and then recovering most, if not all, of the losses by the time the recession ends would put the S&P 500 at year end back at its Q1 peak;
- **We now see the S&P 500 ending 2022 at 4200; and in 2023: Q1 4500; Q2 4500; Q3 3250; and Q4 4500;**
- **Our baseline sees S&P 500 EPS of \$222 in 2022 and \$195 in 2023.** Our house economic forecasts call for a mild recession in GDP terms but one that is focused on goods and housing related products to which the S&P 500 is disproportionately exposed and where the pandemic boom was concentrated. Our earnings baseline therefore embodies what is close to a typical recession decline.

#### As alternatives to the baseline:

- **What if the recession is longer?** A longer recession would shift out the timing of the recession bottom in equities meaning the recovery to prior levels would occur in early 2024.
- **Or does not happen at all, i.e., we get a soft landing?** In the event there is no recession, we get a soft landing and growth rebounds to say trend rates we expect positioning to climb to near the top of its band and the S&P 500 to be significantly higher, ending the year at 5000.

#### Sector and regional preferences:

- At the sector level, tactically we see the rebound led by the Financials, MCG & Tech and consumer cyclicals; are neutral Energy and the Industrials; and are underweight the defensives;
- At the regional level, we favor Europe which, despite its proximity to the Russia-Ukraine conflict and related gas supply constraints, has seen the Stoxx 600 handily outperform the S&P 500 year to date, keeping pace with the S&P 500 equal-weighted index (which trims the weight of the mega cap growth stocks) and indicates resilience. With unrelenting outflows from Europe we see the market underweight the region, which is another positive. This is reflected in relative valuations vs the US (adjusted for sector composition) which are very low, with the discount near the lows of the European financial crisis back in 2012. Finally, we note that with a peak in the US dollar behind us, global equities have tended to outperform US equities (in local currencies) historically when the dollar was falling, so a rise in the euro would add to dollar returns.

Figure 46: Equity forecasts

	Q4-2022	Q1-2023	Q2-2023	Q3-2023	Q4-2023
S&P 500	4200	4500	4500	3250	4500
Stoxx 600	460	495	495	360	495

Source : Deutsche Bank

Binky Chadha, Parag Thatte, Maximilian Uleer

28 November 2022

World Outlook



## B. Rates

**Over the hill, but not far away.** We expect Treasury yields to end 2023 lower at 3.65% and Bunds to underperform Treasuries and end the year higher in yield at 2.60%. While the cyclical peak in US yields is likely behind us, we are waiting for further evidence of weakness in the US labour market to switch to an . Overall, our conviction on duration is materially lower than in the past few years when we thought that [rates](#) and the [Fed](#) had significant catching up to do. In contrast, we expect a notable tightening of the Treasury-Bund spread.

The US will soon be in recession, US core inflation has peaked and there are downside risks to fiscal policy following the midterm elections. However, the Fed enters the year quite far from its dual mandate objectives: core inflation is more than 3pp above target and the labour market is still historically tight. In contrast, US core PCE only briefly exceeded 2.5% over the previous 30 years. As a result, the link between weaker growth and Fed easing is more tenuous than in recent decades. This view is corroborated by a Fed that prefers to err on the side of over vs. under tightening. Thus, even though core inflation and the labour market are lagging indicators, we prefer to wait for clearer evidence of labour market weakness before changing our outright US duration view.

The Eurozone is also likely to enter a recession in the next few quarters. However, unlike the US, core inflation has yet to peak, there is structural upside to fiscal policy, and monetary policy is unlikely to be restrictive enough as yet. Moreover, a reopening in China is likely to create more upside to eurozone growth via stronger external demand, than downside to eurozone inflation via reduced supply chain constraints. As a result, there is scope for the market to price a (moderately) higher terminal rate in Europe.

Finally, during periods of higher inflation and inflation uncertainty, bond and equity returns tend to be positively correlated. This reduces the hedging benefits of bonds and the bond risk premium should rise accordingly. Also, the increase in bond supply and reduction in central bank QE (including a potential end of the BoJ's YCC policy) is resulting in a material shift in the supply/demand equation. For instance, we expect net-net EGB supply to increase by 375bn in 2023 relative to 2022, reaching a new historical high in terms of net-net supply that will need to be absorbed by private investors. This should drive global term premia higher and Bund asset swaps tighter.

Given this macro backdrop, we are neutral US front-end, have a mild bearish bias in EUR front-end, expect the UST-Bund spread and Bund ASW to tighten and term premia to rise globally. We expect to switch to a long US duration stance in the next few quarters, but this will ultimately hinge on whether inflation comes back to target fast enough. [As outlined by our colleagues](#), historical precedents suggest that current consensus expectations for inflation may be too optimistic.

Overall, our conviction on duration is materially lower than in recent years and there are both upside and downside risks to our yield forecasts. To the upside, fiscal policy in the US may be more supportive, the China reopening may have a stronger impact on global growth, the labour market may be more resilient and inflation more sticky, while a potential end to the BoJ's YCC policy could have a larger impact on term premia than expected. To the downside, the unusual resilience of the labour market may correct faster, eurozone fiscal policy may be less supportive, China's structural deflationary impact may dominate the easing of the zero covid policies, and political

28 November 2022

World Outlook



risks in Europe (e.g. Italy) may tighten financial conditions.

*Francis Yared, Ioannis Sokos and Matthew Raskin*

## C. Credit

Our terminal credit spread peaks for 2023 haven't changed much since we became convinced of a 2023 US recession early in 2022. Our biggest concern is that economists very seldom predict recessions in advance. As such when around half the 66 forecasters on Bloomberg now predict one at some point in the US in 2023, we should in fact be a lot more worried, even if these predictions are for a mild one. If models that rarely predict recessions are now flashing red, then the risk is that the normal nonlinearities that usually trigger a recession could easily kick-in. Given that every Fed hiking cycle tends to see a crisis somewhere in the world, and given that the last decade or so has seen enormous volumes of QE and negative rates encourage more and more risk/leverage into more and more opaque and/or illiquid assets, then the unravelling risks associated with higher rates, QT and recession are now high. Private markets and/or global housing are big risks.

As such our assumption is that if a mild US recession arrives, combined with the lagged impact of aggressive Fed hikes, it will likely set off a more negative market reaction that could make the recession worse. The problem with credit is that it is an illiquid asset in itself and the risk is always that as the market gets more risk averse, even long-term clients will try to sell credit to protect short-term performance or to shield them from outflows. The broker community has limited ability or desire to warehouse risk and as such, the chances of an overshoot for spreads are high at the worst point in the cycle.

In terms of defaults, we forecast YE'23 defaults in US HY of 4.5%, US Loans of 5.6%, EU HY of 2.2%, and EU Loans of 3.7%. By 2H'24, we forecast peak defaults in US HY of 9%, US Loans of 11.3%, EUR HY of 4.3% & EUR loans of 7.1%. The lack of near-term maturities will delay defaults, but our models suggest leverage is 2x more important than maturity walls at predicting defaults. US loan defaults will approach all-time highs. US HY defaults will remain below prior peaks in 2002 (12.2%) & 2009 (15.5%) but will still cause market stress. European default rates will undershoot the US, given better credit ratings and less leverage (high-yield), and less exposure to tech (US loans).

We expect USD IG and HY spreads to finish 2023 at +235bps and +860bp respectively. EUR IG & HY spreads should finish 2023 at +245bps & +930bps. US HY will likely see the biggest widening of around 400bps. The best returning asset class should be European IG which has overshot in recent months. It will still widen in 2023 but less aggressively than other markets.

*Jim Reid*



28 November 2022

World Outlook



## D. Foreign Exchange

Our framework throughout the year has emphasized the importance of global risk premium in driving the dollar stronger, from US hard landing risk driven by elevated inflation and Fed tightening to geopolitical risk driven by the Russia – Ukraine war and China’s zero covid policies. A turn in the dollar requires an easing of risk premium across all these fronts and an improvement in global growth prospects and risk appetite. Our forecast profile for 2023 assumes the peak in risk premium is behind us and will continue to improve next year. In Europe, the passing of winter and ongoing fiscal support should see an exit from a winter recession, while the Russia – Ukraine war should ultimately reach resolution or stalemate with the probability of more extreme tail risks receding. In China, a gradual COVID reopening should further support global growth and also be helpful to the European economy. In the US, fed funds and inflation risks are likely to peak next year – likely requiring a recession – but ultimately paving the way for an easing cycle from the Fed and coinciding with a relative narrowing in US - global growth differentials.

Uncertainty on the timing, level and persistence of Fed Fund tightening required to normalize inflation remains very high. Our forecast profile assumes a persistence of US inflation and Fed risks - the recent CPI beat notwithstanding - through the first half of next year that does not allow the market to price an immediate and definitive peak in Fed Funds. This then leads to a EUR/USD that remains choppy with the exchange rate only sustainably moving back above 1.10 towards the end of the year. Our broader dollar profile assumes a turn that takes time and is more akin to an inverted L rather than the V-shaped bounceback of 1984-85. The longer the resolution to the key global risks - inflation, Russia war, China zero covid - the longer the bottoming out will take. If our conviction on any of the above were to change to a quicker resolution, our forecast would change to a faster dollar reversal too.

For more on the FX outlook for 2023 please see [here](#)

*George Saravelos and Alan Ruskin*

## E. Emerging Markets

Emerging market assets – equities, credit, local bonds – are all heading for their worst full year of performance in 2022 since the GFC. We had anticipated a ‘thicker’ Fed dot plot to provide the most headwind to the asset class. However, we were blindsided by the Ukraine crisis and its fallout on the energy/food/commodity complex, which worsened the demand-supply imbalances in several EM economies, and forced policymaking into a tough corner on growth-inflation trade-offs; in a way pitting central bank reaction functions more versus each other, as compared with their own historical precedents. A combination then of a strong dollar, higher core rates vol, an unflattering inflation profile, and rising commodity import bills has left most of EM – both in carry and growth assets - beholden to the global beta for much of this year. Meantime, China has struggled with the rising costs and diminishing benefits of its pandemic management strategy, which - while paradoxically easing some of the global demand imbalances – has negatively impacted EM commodity producers, and those dependent on Chinese supply chains and consumer demand (tourism, etc).



28 November 2022

World Outlook



Getting towards end of the year, we have seen market expectations on many of the narratives above 'pivot' in direction of a more risk positive macro backdrop. The quality of disinflation in the US has reaffirmed a likely peak on Fed cycle in H1; a split legislature in the US has potentially hit the 'sweet spot' on monetary/fiscal interaction; the gas supply situation in Europe has given hope that we are moving past peak energy stress in Europe; and there has been growing reason to think the left side tail is better protected on three key China related headwinds – Covid, property and relations with the US. The Fed curve has repriced as result, rates vol has collapsed, and the dollar has softened, pushing EM assets more towards the middle of the risk smile which they are typically most comfortable with. After losing \$170bn over the last 10 months, EM has seen \$18bn of buying from global investors this month, almost entirely in equities, and which sets it on course for the biggest net inflow month of the year.

We are heading into one of the most well telegraphed recessions in the developed world in recent times, and with exceptional uncertainty around transmission of policy impulse given the distance from target parameters, and on the complexity of impact from geopolitical considerations. **We remain reluctant to call a structural peak on stress in EM assets**, and in particular cognizant of more pressure likely ahead on external financing requirements for frontier EM economies. But three things give us **reason to increasingly see the glass half full rather than empty** – momentum in headline and pipeline inflation is easing in many EMEs (less so in core price series yet); central banks in most EMEs are we think at least as close, and in many cases closer, to peak rates than the Fed and ECB; and the relatively low global ownership of EM assets (as pct of market cap, for example, global ownership of EM local bonds is below 5Y median levels in 20 out of the 24 market we track).

**If indeed the focus shifts in 2023 from 'peak' in cycle – inflation, policy, energy prices – to the shape and pace of the turn; it should give more space for EM idiosyncratic factors to play a bigger role – possibly more in the tails** - be it the direction of fiscal policy in the incoming Lula administration in Brazil, elections in Turkey in May, or inclusion into global debt indices for India and Korea. The timing and sequencing of China's reopening again will likely be a key factor for not just the investment proposition in Chinese assets, but in defining relative value between commodity producers and importers, and between EM growth (business cycle) and carry (vol) candidates. We are going into end of the year relatively constructive on a select basket of liquid EM currencies (MXN, ZAR, ILS, KRW, THB, IDR) with strong underlying fundamentals, and received on policy term premia in the front end of the curves in few rates markets (Poland, South Africa, Korea). We think the reopening trade in China will be better expressed next year via paying local rates.

*Sameer Goel*

## F. Oil and Gas

### Crude Oil

**A persistently low level of inventory** (59 days versus 65 days' consumption) keeps prices supported above incentive cost (USD 69/bbl). On a yearly basis this is the lowest level of inventory since 2013, when Brent prices averaged USD 136/bbl in real terms. OPEC policy bias has turned to cutting production (already in effect in November with -1 mmb/d in exports), and there is some risk of supply constriction once the EU embargo on Russian crude and oil products takes effect from December to February. The current low level of inventory is the result of OPEC re-

28 November 2022

World Outlook



introducing supply more slowly than the recovery in demand in 2020-21, which is intended to correct for an unnaturally low level of upstream industry investment.

**Drilling rates remain low globally compared to 10 years ago**, and it is most apparent when looking at the United States, considering the gap between the 12m WTI strip at USD 79/bbl and breakeven tight oil costs averaging USD 48-69/bbl according to the Dallas Fed survey. In addition to shareholders demanding conservative financial management, we also see a fall in the stock of drilled, uncompleted wells and ongoing service sector bottlenecks (4-6 months to add a well) as limiting US supply growth.

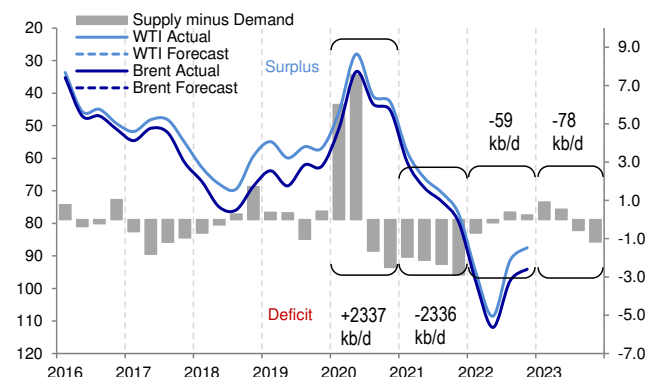
**We see recession slowing demand growth from +2 mmb/d in 2022 to +1 mmb/d in 2023.** There is potential for this to be upgraded toward the IEA's +1.6 mmb/d forecast which is contingent on China loosening its Zero Covid Strategy (ZCS). We think the OPEC forecast of +2.1 mmb/d, which would require a significant upgrade to global GDP growth, is unlikely to be achieved. While China may be considering a pivot on ZCS policy, only the second stage of reopening would have positive oil demand implications and could take place in Q2-23. We would look for a redoubled vaccination campaign, or new vaccine approvals as preconditions for a policy change.

Although we see moderate supply risk in the next quarter of around 0.5-1.0 mmb/d in conjunction with the EU embargo taking effect, we expect the impact to be blunted by Russia's self-interest in maximising export revenue, the self-interest of importers and shipping operators to find creative ways of insuring cargoes, and the reduction of Russian flows to Europe since the middle of the year. Preliminary September data shows 2 mmb/d of Russian liquids imports for Europe to wind down, consisting of 1.3 mmb/d of crude, 400 kb/d of refined products, and 300 kb/d of other liquids (this excludes 300 kb/d of exempted Druzhba pipeline crude imported by Hungary, Slovakia, Czechia).

**Our bias is to the downside in price beyond the next quarter**, as we see 2023 global inventory unchanged from Q4-22 but higher versus the 2022 average. OECD commercial liquids inventory has already improved slightly from 58 days at mid-year to 59 days currently. Although supply disruption temporarily lifts prices to Brent USD 100/bbl in Q1-23, prices resume their decline to Brent 80/bbl at end-23. On the downside, we think OPEC policymakers may reach consensus to respond but only below the Brent USD 84/bbl level which preceded the last decision to reduce supply at the October meeting, while US SPR refilling demand sits in a WTI USD 67-72/bbl range.

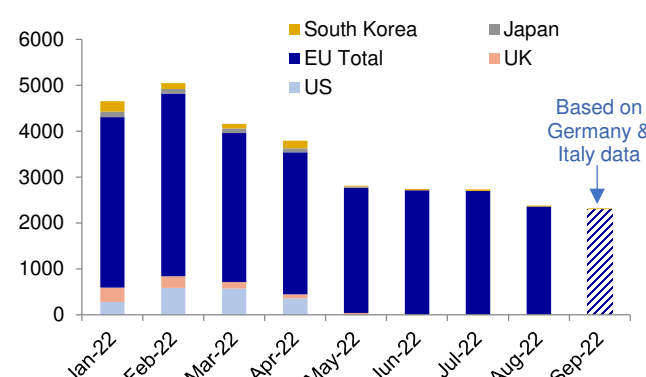


Figure 47: Oil market supply/demand suggests even balance in 2023



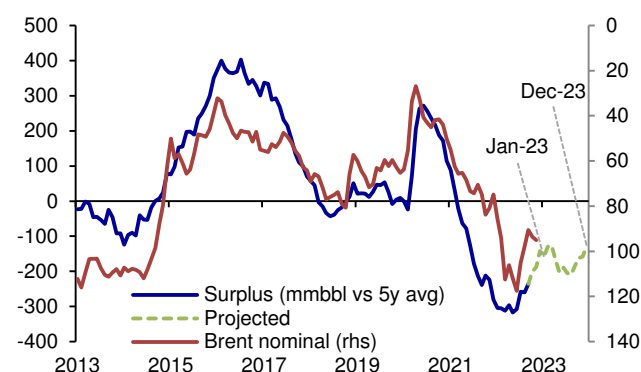
Source : IEA data from Monthly Oil Data Service © OECD/IEA 2022, [www.iea.org/statistics](http://www.iea.org/statistics), Licence:[www.iea.org/t&c](http://www.iea.org/t&c); as modified by Deutsche Bank

Figure 48: Europe has 2 mmb/d\* in Russian liquids to unwind by Dec/Feb



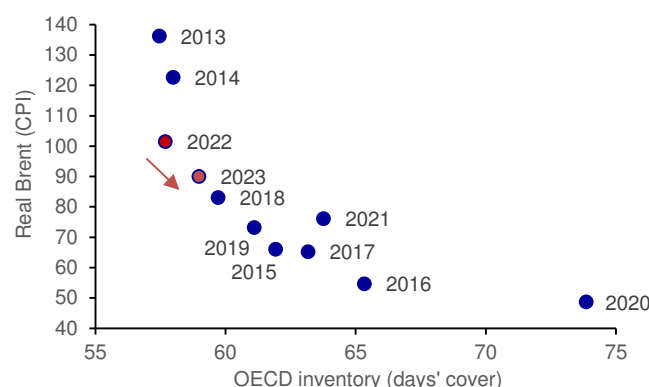
Source : IEA data from Monthly Oil Data Service © OECD/IEA 2022, [www.iea.org/statistics](http://www.iea.org/statistics), Licence:[www.iea.org/t&c](http://www.iea.org/t&c); as modified by Deutsche Bank  
\*Chart includes 300 kb/d of exempted pipeline crude

Figure 49: OECD commercial liquids inventory remains in deficit vs 5y avg



Source : IEA data from Monthly Oil Data Service © OECD/IEA 2022, [www.iea.org/statistics](http://www.iea.org/statistics), Licence:[www.iea.org/t&c](http://www.iea.org/t&c); as modified by Deutsche Bank, Bloomberg Finance LP

Figure 50: OECD inventory days' cover and real Brent prices



Source : IEA data from Monthly Oil Data Service © OECD/IEA 2022, [www.iea.org/statistics](http://www.iea.org/statistics), Licence:[www.iea.org/t&c](http://www.iea.org/t&c); as modified by Deutsche Bank, Bloomberg Finance LP

## Natural Gas

### Europe is making a success of shifting away from Russian gas but demand cuts need to persist.

The curtailment of Russia gas supply over the summer months – with the share of EU gas imports coming from Russia falling from close to 40% pre-Covid to 7% currently -- led to extreme stress in the European gas markets in August 2022. But this has eased thanks to maximising alternative supply particularly LNG, curtailing weather-adjusted local and industrial gas demand by 14% over Apr-Jul (Figure 5) and warm weather in October (heating degree days less than half of 20y normal, Figure 6). Including the even greater reduction in August demand (which we do not assume will persist), the latter two factors account for 19.5 bcm of reduced demand. The result has been gas storage remaining at near 100% full in Germany and 95% full for the EU as a whole in late November, with risks of enforced gas rationing fading away absent major risks materialising<sup>18</sup>. Without the demand curtailment and warm weather, European storage would have been 80% instead of 95% full.

18 such as an extremely cold winter or damage to gas infrastructure

28 November 2022

World Outlook



Continued demand curtailment is still needed to get through next winter. The improved gas storage picture also has positive knock on effects on the following winter, reducing the storage refilling challenge for summer 2023. Our utilities' colleagues estimate that reducing EU gas consumption by 12% from the historic norm would be sufficient to get through this winter and next with ample gas reserves. The winter weather, and whether current Russian pipeline supply continues, remain key determinants of the gas supply outlook – a shut-off of remaining pipeline flows from Russia combined with unusually cold weather would put this view under strain ([Figure 7](#)).

**Peak prices and volatility behind us but normalisation to be limited during 2023.**

While gas rationing risks have eased, current European gas prices remain 6-7x their historical norms. Volatility in prices is likely to persist, albeit at lower levels than in summer 2022. Weather, Russian supplies and global LNG demand are three key factors for the gas price outlook. A warmer winter could help Europe end winter 2022/23 with gas storage full even above our baseline of 40%, which in turn could help drive gas prices towards the lower end of their range in Q2-22 (EUR 90/MWh). Larger price declines than this are likely to be limited by the tightness of the global LNG market and fuel switching. The latter has helped to reduce gas demand but would reverse as prices decline.

When it comes to the state of the global LNG market, Chinese demand will be a key element. China was the main driver of growth in global LNG demand prior to 2022, but its LNG imports fell by 15 million tonnes (20 bcm) this year as Europe paid high prices for redirected shipments and domestic demand was constrained by ongoing Covid-related restrictions, [Figure 8](#). With our China economists expecting a re-opening rebound by mid-2023, this represents a source of upside risk for natural gas prices in H2-23.

In aggregate, we see room for European gas prices to drift a little below EUR 100/MWh by next spring, but likely moving back higher later in 2023, and averaging slightly over EUR 100/MWh over the year. Renewed sharp spikes cannot be ruled in the event of downside risks materialising, but with the combination of fuller European storage and EU gas market measures, we see sustained spikes above EUR 160/MWh as unlikely. Still, gas prices are set to remain several times above their historic levels, representing a shock to European competitiveness. While the lasting gap in gas futures ([Figure 13](#)) in part reflects risk premium for European gas supply, with global LNG production set to see a material increase up only in 2025-26 ([Figure 14](#)), it will take some years for the global gas market to normalise more fully.

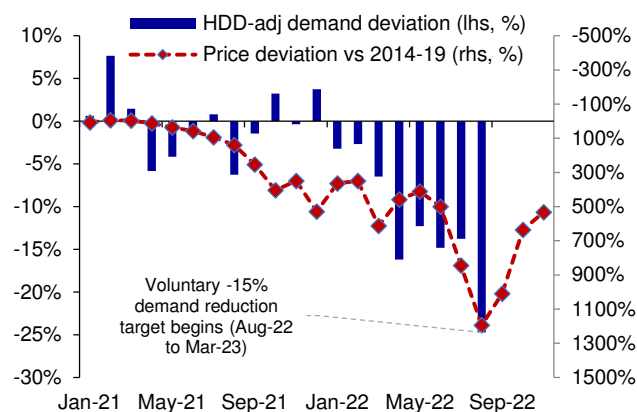
*Michael Hsueh & Peter Sidorov*

28 November 2022

World Outlook

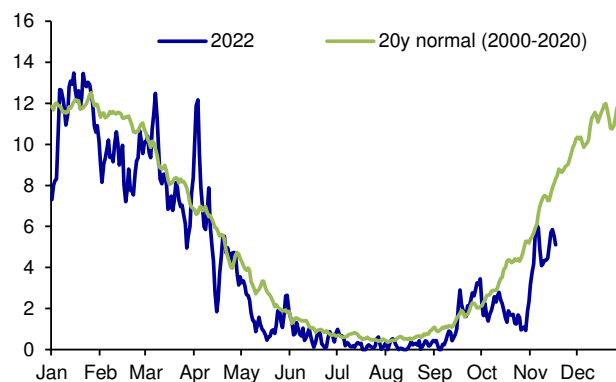


**Figure 51: Considerable EU-27 weather-adjusted demand conservation from April to July at -14% of local/industrial demand, or 11% of total inland consumption (excl. storage injections)**



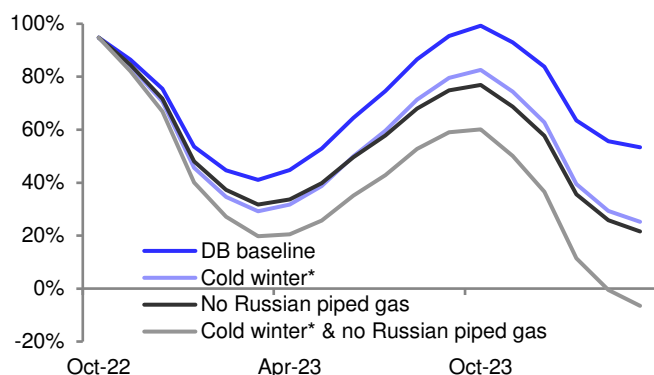
Source : Eurostat, Bloomberg Finance LP, Deutsche Bank

**Figure 52: European October 2022 heating degree days were -52% below the 20 year normal, saving 4.7 bcm, or 5% of storage**



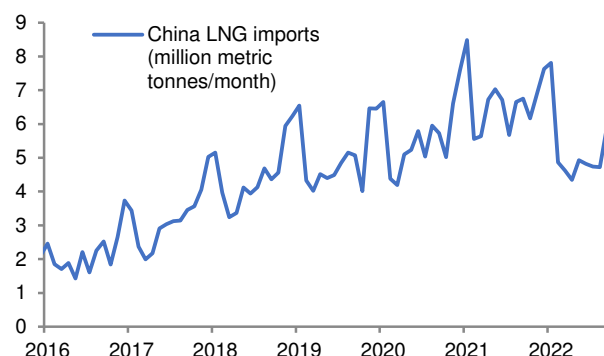
Source : Bloomberg Finance LP, Deutsche Bank

**Figure 53: A degree of resilience is afforded by European storage at 95% full**



Source : GIE, DB European Utilities team  
\*10% higher than baseline local demand

**Figure 54: Lower Chinese LNG demand released an extra 20 bcm of supply to the market (first 10 months of 2022)**



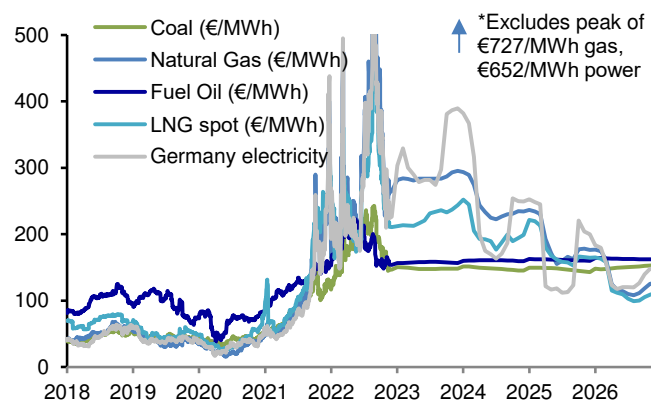
Source : Bloomberg Finance LP, Deutsche Bank

28 November 2022

World Outlook

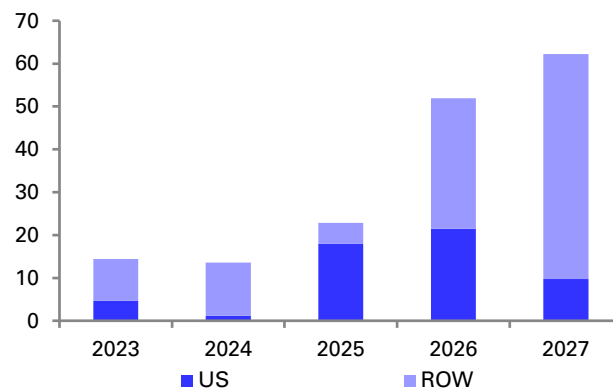


Figure 55: Marginal electricity generation costs in Germany (€/MWh)



Source : Bloomberg Finance LP, Deutsche Bank

Figure 56: LNG capacity additions by year (bcm)



Source : DB European Utilities team

28 November 2022

World Outlook



# Appendix 1

## Important Disclosures

### \*Other information available upon request

\*Prices are current as of the end of the previous trading session unless otherwise indicated and are sourced from local exchanges via Reuters, Bloomberg and other vendors. Other information is sourced from Deutsche Bank, subject companies, and other sources. For further information regarding disclosures relevant to Deutsche Bank Research, please visit our global disclosure look-up page on our website at <https://research.db.com/Research/Disclosures/FICCDisclosures>. Aside from within this report, important risk and conflict disclosures can also be found at <https://research.db.com/Research/Disclosures/Disclaimer>. Investors are strongly encouraged to review this information before investing.

## Analyst Certification

The views expressed in this report accurately reflect the personal views of the undersigned lead analyst(s). In addition, the undersigned lead analyst(s) has not and will not receive any compensation for providing a specific recommendation or view in this report. Mark Wall.



28 November 2022

World Outlook



## Additional Information

The information and opinions in this report were prepared by Deutsche Bank AG or one of its affiliates (collectively 'Deutsche Bank'). Though the information herein is believed to be reliable and has been obtained from public sources believed to be reliable, Deutsche Bank makes no representation as to its accuracy or completeness. Hyperlinks to third-party websites in this report are provided for reader convenience only. Deutsche Bank neither endorses the content nor is responsible for the accuracy or security controls of those websites.

If you use the services of Deutsche Bank in connection with a purchase or sale of a security that is discussed in this report, or is included or discussed in another communication (oral or written) from a Deutsche Bank analyst, Deutsche Bank may act as principal for its own account or as agent for another person.

Deutsche Bank may consider this report in deciding to trade as principal. It may also engage in transactions, for its own account or with customers, in a manner inconsistent with the views taken in this research report. Others within Deutsche Bank, including strategists, sales staff and other analysts, may take views that are inconsistent with those taken in this research report. Deutsche Bank issues a variety of research products, including fundamental analysis, equity-linked analysis, quantitative analysis and trade ideas. Recommendations contained in one type of communication may differ from recommendations contained in others, whether as a result of differing time horizons, methodologies, perspectives or otherwise. Deutsche Bank and/or its affiliates may also be holding debt or equity securities of the issuers it writes on. Analysts are paid in part based on the profitability of Deutsche Bank AG and its affiliates, which includes investment banking, trading and principal trading revenues.

Opinions, estimates and projections constitute the current judgment of the author as of the date of this report. They do not necessarily reflect the opinions of Deutsche Bank and are subject to change without notice. Deutsche Bank provides liquidity for buyers and sellers of securities issued by the companies it covers. Deutsche Bank research analysts sometimes have shorter-term trade ideas that may be inconsistent with Deutsche Bank's existing longer-term ratings. Some trade ideas for equities are listed as Catalyst Calls on the Research Website (<https://research.db.com/Research/>), and can be found on the general coverage list and also on the covered company's page. A Catalyst Call represents a high-conviction belief by an analyst that a stock will outperform or underperform the market and/or a specified sector over a time frame of no less than two weeks and no more than three months. In addition to Catalyst Calls, analysts may occasionally discuss with our clients, and with Deutsche Bank salespersons and traders, trading strategies or ideas that reference catalysts or events that may have a near-term or medium-term impact on the market price of the securities discussed in this report, which impact may be directionally counter to the analysts' current 12-month view of total return or investment return as described herein. Deutsche Bank has no obligation to update, modify or amend this report or to otherwise notify a recipient thereof if an opinion, forecast or estimate changes or becomes inaccurate. Coverage and the frequency of changes in market conditions and in both general and company-specific economic prospects make it difficult to update research at defined intervals. Updates are at the sole discretion of the coverage analyst or of the Research Department Management, and the majority of reports are published at irregular intervals. This report is provided for informational purposes only and does not take into account the particular investment objectives, financial situations, or needs of individual clients. It is not an offer or a solicitation of an offer to buy or sell any financial instruments or to participate in any particular trading strategy. Target prices are inherently imprecise and a product of the analyst's judgment. The financial instruments discussed in this report may not be suitable for all investors, and investors must make their own informed investment decisions. Prices and availability of financial instruments are subject to change without notice, and investment transactions can lead to losses as a result of price fluctuations and other factors. If a financial instrument is denominated in a currency other than an investor's currency, a change in exchange rates may adversely affect the investment. Past performance is not necessarily indicative of future results. Performance calculations exclude transaction costs, unless otherwise indicated. Unless otherwise indicated, prices are current as of the end of the previous trading session and are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is also sourced from Deutsche Bank, subject companies, and other parties.

The Deutsche Bank Research Department is independent of other business divisions of the Bank. Details regarding our organizational arrangements and information barriers we have to prevent and avoid conflicts of interest with respect to our research are available on our website (<https://research.db.com/Research/>) under Disclaimer.

Macroeconomic fluctuations often account for most of the risks associated with exposures to instruments that promise to pay fixed or variable interest rates. For an investor who is long fixed-rate instruments (thus receiving these cash flows), increases in interest rates naturally lift the discount factors applied to the expected cash flows and thus cause a loss. The longer the maturity of a certain cash flow and the higher the move in the discount factor, the higher will be the loss. Upside surprises in inflation, fiscal funding needs, and FX depreciation rates are among the most common adverse macroeconomic shocks to receivers. But counterparty exposure, issuer creditworthiness, client segmentation, regulation (including changes in assets holding limits for different types of investors), changes in tax policies, currency convertibility (which may constrain currency conversion, repatriation of profits and/or liquidation of positions), and settlement issues related to local clearing houses are also important risk factors. The sensitivity of fixed-income instruments to macroeconomic shocks may be mitigated by indexing the contracted cash flows to inflation, to FX depreciation, or to specified interest rates – these are common in emerging markets. The index fixings may – by construction – lag or mis-measure the actual move in the underlying variables they are intended to track. The choice of the proper fixing (or metric) is particularly important in swaps markets, where floating coupon rates (i.e., coupons indexed to a typically short-dated interest rate reference index) are exchanged for fixed coupons. Funding in a currency that differs from the currency in which coupons are denominated carries FX risk. Options on swaps (swaptions) the risks typical to options in addition to the risks related to rates movements.

Derivative transactions involve numerous risks including market, counterparty default and illiquidity risk. The appropriateness

28 November 2022

World Outlook



of these products for use by investors depends on the investors' own circumstances, including their tax position, their regulatory environment and the nature of their other assets and liabilities; as such, investors should take expert legal and financial advice before entering into any transaction similar to or inspired by the contents of this publication. The risk of loss in futures trading and options, foreign or domestic, can be substantial. As a result of the high degree of leverage obtainable in futures and options trading, losses may be incurred that are greater than the amount of funds initially deposited – up to theoretically unlimited losses. Trading in options involves risk and is not suitable for all investors. Prior to buying or selling an option, investors must review the 'Characteristics and Risks of Standardized Options', at <http://www.optionsclearing.com/about/publications/character-risks.jsp>. If you are unable to access the website, please contact your Deutsche Bank representative for a copy of this important document.

Participants in foreign exchange transactions may incur risks arising from several factors, including the following: (i) exchange rates can be volatile and are subject to large fluctuations; (ii) the value of currencies may be affected by numerous market factors, including world and national economic, political and regulatory events, events in equity and debt markets and changes in interest rates; and (iii) currencies may be subject to devaluation or government-imposed exchange controls, which could affect the value of the currency. Investors in securities such as ADRs, whose values are affected by the currency of an underlying security, effectively assume currency risk.

Unless governing law provides otherwise, all transactions should be executed through the Deutsche Bank entity in the investor's home jurisdiction. Aside from within this report, important conflict disclosures can also be found at <https://research.db.com/Research/> on each company's research page. Investors are strongly encouraged to review this information before investing.

Deutsche Bank (which includes Deutsche Bank AG, its branches and affiliated companies) is not acting as a financial adviser, consultant or fiduciary to you or any of your agents (collectively, "You" or "Your") with respect to any information provided in this report. Deutsche Bank does not provide investment, legal, tax or accounting advice, Deutsche Bank is not acting as your impartial adviser, and does not express any opinion or recommendation whatsoever as to any strategies, products or any other information presented in the materials. Information contained herein is being provided solely on the basis that the recipient will make an independent assessment of the merits of any investment decision, and it does not constitute a recommendation of, or express an opinion on, any product or service or any trading strategy.

The information presented is general in nature and is not directed to retirement accounts or any specific person or account type, and is therefore provided to You on the express basis that it is not advice, and You may not rely upon it in making Your decision. The information we provide is being directed only to persons we believe to be financially sophisticated, who are capable of evaluating investment risks independently, both in general and with regard to particular transactions and investment strategies, and who understand that Deutsche Bank has financial interests in the offering of its products and services. If this is not the case, or if You are an IRA or other retail investor receiving this directly from us, we ask that you inform us immediately.

In July 2018, Deutsche Bank revised its rating system for short term ideas whereby the branding has been changed to Catalyst Calls ("CC") from SOLAR ideas; the rating categories for Catalyst Calls originated in the Americas region have been made consistent with the categories used by Analysts globally; and the effective time period for CCs has been reduced from a maximum of 180 days to 90 days.

**United States:** Approved and/or distributed by Deutsche Bank Securities Incorporated, a member of FINRA, NFA and SIPC. Analysts located outside of the United States are employed by non-US affiliates that are not subject to FINRA regulations.

**European Economic Area (exc. United Kingdom):** Approved and/or distributed by Deutsche Bank AG, a joint stock corporation with limited liability incorporated in the Federal Republic of Germany with its principal office in Frankfurt am Main. Deutsche Bank AG is authorized under German Banking Law and is subject to supervision by the European Central Bank and by BaFin, Germany's Federal Financial Supervisory Authority.

**United Kingdom:** Approved and/or distributed by Deutsche Bank AG acting through its London Branch at Winchester House, 1 Great Winchester Street, London EC2N 2DB. Deutsche Bank AG in the United Kingdom is authorised by the Prudential Regulation Authority and is subject to limited regulation by the Prudential Regulation Authority and Financial Conduct Authority. Details about the extent of our authorisation and regulation are available on request.

**Hong Kong SAR:** Distributed by Deutsche Bank AG, Hong Kong Branch, except for any research content relating to futures contracts within the meaning of the Hong Kong Securities and Futures Ordinance Cap. 571. Research reports on such futures contracts are not intended for access by persons who are located, incorporated, constituted or resident in Hong Kong. The author(s) of a research report may not be licensed to carry on regulated activities in Hong Kong, and if not licensed, do not hold themselves out as being able to do so. The provisions set out above in the 'Additional Information' section shall apply to the fullest extent permissible by local laws and regulations, including without limitation the Code of Conduct for Persons Licensed or Registered with the Securities and Futures Commission. This report is intended for distribution only to 'professional investors' as defined in Part 1 of Schedule of the SFO. This document must not be acted or relied on by persons who are not professional investors. Any investment or investment activity to which this document relates is only available to professional investors and will be engaged only with professional investors.

**India:** Prepared by Deutsche Equities India Private Limited (DEIPL) having CIN: U65990MH2002PTC137431 and registered office at 14th Floor, The Capital, C-70, G Block, Bandra Kurla Complex Mumbai (India) 400051. Tel: + 91 22 7180 4444. It is registered by the Securities and Exchange Board of India (SEBI) as a Stock broker bearing registration no.: INZ000252437;

28 November 2022

World Outlook



Merchant Banker bearing SEBI Registration no.: INM000010833 and Research Analyst bearing SEBI Registration no.: INH000001741. DEIPL may have received administrative warnings from the SEBI for breaches of Indian regulations. Deutsche Bank and/or its affiliate(s) may have debt holdings or positions in the subject company. With regard to information on associates, please refer to the "Shareholdings" section in the Annual Report at: <https://www.db.com/ir/en/annual-reports.htm>.

**Japan:** Approved and/or distributed by Deutsche Securities Inc.(DSI). Registration number - Registered as a financial instruments dealer by the Head of the Kanto Local Finance Bureau (Kinsho) No. 117. Member of associations: JSDA, Type II Financial Instruments Firms Association and The Financial Futures Association of Japan. Commissions and risks involved in stock transactions - for stock transactions, we charge stock commissions and consumption tax by multiplying the transaction amount by the commission rate agreed with each customer. Stock transactions can lead to losses as a result of share price fluctuations and other factors. Transactions in foreign stocks can lead to additional losses stemming from foreign exchange fluctuations. We may also charge commissions and fees for certain categories of investment advice, products and services. Recommended investment strategies, products and services carry the risk of losses to principal and other losses as a result of changes in market and/or economic trends, and/or fluctuations in market value. Before deciding on the purchase of financial products and/or services, customers should carefully read the relevant disclosures, prospectuses and other documentation. 'Moody's', 'Standard Poor's', and 'Fitch' mentioned in this report are not registered credit rating agencies in Japan unless Japan or 'Nippon' is specifically designated in the name of the entity. Reports on Japanese listed companies not written by analysts of DSI are written by Deutsche Bank Group's analysts with the coverage companies specified by DSI. Some of the foreign securities stated on this report are not disclosed according to the Financial Instruments and Exchange Law of Japan. Target prices set by Deutsche Bank's equity analysts are based on a 12-month forecast period..

**Korea:** Distributed by Deutsche Securities Korea Co.

**South Africa:** Deutsche Bank AG Johannesburg is incorporated in the Federal Republic of Germany (Branch Register Number in South Africa: 1998/003298/10).

**Singapore:** This report is issued by Deutsche Bank AG, Singapore Branch (One Raffles Quay #18-00 South Tower Singapore 048583, 65 6423 8001), which may be contacted in respect of any matters arising from, or in connection with, this report. Where this report is issued or promulgated by Deutsche Bank in Singapore to a person who is not an accredited investor, expert investor or institutional investor (as defined in the applicable Singapore laws and regulations), they accept legal responsibility to such person for its contents.

**Taiwan:** Information on securities/investments that trade in Taiwan is for your reference only. Readers should independently evaluate investment risks and are solely responsible for their investment decisions. Deutsche Bank research may not be distributed to the Taiwan public media or quoted or used by the Taiwan public media without written consent. Information on securities/instruments that do not trade in Taiwan is for informational purposes only and is not to be construed as a recommendation to trade in such securities/instruments. Deutsche Securities Asia Limited, Taipei Branch may not execute transactions for clients in these securities/instruments.

**Qatar:** Deutsche Bank AG in the Qatar Financial Centre (registered no. 00032) is regulated by the Qatar Financial Centre Regulatory Authority. Deutsche Bank AG - QFC Branch may undertake only the financial services activities that fall within the scope of its existing QFCRA license. Its principal place of business in the QFC: Qatar Financial Centre, Tower, West Bay, Level 5, PO Box 14928, Doha, Qatar. This information has been distributed by Deutsche Bank AG. Related financial products or services are only available only to Business Customers, as defined by the Qatar Financial Centre Regulatory Authority.

**Russia:** The information, interpretation and opinions submitted herein are not in the context of, and do not constitute, any appraisal or evaluation activity requiring a license in the Russian Federation.

**Kingdom of Saudi Arabia:** Deutsche Securities Saudi Arabia (DSSA) is a closed joint stock company authorized by the Capital Market Authority of the Kingdom of Saudi Arabia with a license number (No. 37-07073) to conduct the following business activities: Dealing, Arranging, Advising, and Custody activities. DSSA registered office is Faisaliah Tower, 17th Floor, King Fahad Road - Al Olaya District Riyadh, Kingdom of Saudi Arabia P.O. Box 301806.

**United Arab Emirates:** Deutsche Bank AG in the Dubai International Financial Centre (registered no. 00045) is regulated by the Dubai Financial Services Authority. Deutsche Bank AG - DIFC Branch may only undertake the financial services activities that fall within the scope of its existing DFSA license. Principal place of business in the DIFC: Dubai International Financial Centre, The Gate Village, Building 5, PO Box 504902, Dubai, U.A.E. This information has been distributed by Deutsche Bank AG. Related financial products or services are available only to Professional Clients, as defined by the Dubai Financial Services Authority.

**Australia and New Zealand:** This research is intended only for 'wholesale clients' within the meaning of the Australian Corporations Act and New Zealand Financial Advisors Act, respectively. Please refer to Australia-specific research disclosures and related information at [https://www.dbresearch.com/PROD/RPS\\_EN-PROD/PROD0000000000521304.xhtml](https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD0000000000521304.xhtml). Where research refers to any particular financial product recipients of the research should consider any product disclosure statement, prospectus or other applicable disclosure document before making any decision about whether to acquire the product. In preparing this report, the primary analyst or an individual who assisted in the preparation of this report has likely been in contact with the company that is the subject of this research for confirmation/clarification of data, facts, statements, permission to use company-sourced material in the report, and/or site-visit attendance. Without prior approval from Research Management,

28 November 2022

World Outlook



analysts may not accept from current or potential Banking clients the costs of travel, accommodations, or other expenses incurred by analysts attending site visits, conferences, social events, and the like. Similarly, without prior approval from Research Management and Anti-Bribery and Corruption ("ABC") team, analysts may not accept perks or other items of value for their personal use from issuers they cover.

Additional information relative to securities, other financial products or issuers discussed in this report is available upon request. This report may not be reproduced, distributed or published without Deutsche Bank's prior written consent.

Backtested, hypothetical or simulated performance results have inherent limitations. Unlike an actual performance record based on trading actual client portfolios, simulated results are achieved by means of the retroactive application of a backtested model itself designed with the benefit of hindsight. Taking into account historical events the backtesting of performance also differs from actual account performance because an actual investment strategy may be adjusted any time, for any reason, including a response to material, economic or market factors. The backtested performance includes hypothetical results that do not reflect the reinvestment of dividends and other earnings or the deduction of advisory fees, brokerage or other commissions, and any other expenses that a client would have paid or actually paid. No representation is made that any trading strategy or account will or is likely to achieve profits or losses similar to those shown. Alternative modeling techniques or assumptions might produce significantly different results and prove to be more appropriate. Past hypothetical backtest results are neither an indicator nor guarantee of future returns. Actual results will vary, perhaps materially, from the analysis.

The method for computing individual E,S,G and composite ESG scores set forth herein is a novel method developed by the Research department within Deutsche Bank AG, computed using a systematic approach without human intervention. Different data providers, market sectors and geographies approach ESG analysis and incorporate the findings in a variety of ways. As such, the ESG scores referred to herein may differ from equivalent ratings developed and implemented by other ESG data providers in the market and may also differ from equivalent ratings developed and implemented by other divisions within the Deutsche Bank Group. Such ESG scores also differ from other ratings and rankings that have historically been applied in research reports published by Deutsche Bank AG. Further, such ESG scores do not represent a formal or official view of Deutsche Bank AG.

It should be noted that the decision to incorporate ESG factors into any investment strategy may inhibit the ability to participate in certain investment opportunities that otherwise would be consistent with your investment objective and other principal investment strategies. The returns on a portfolio consisting primarily of sustainable investments may be lower or higher than portfolios where ESG factors, exclusions, or other sustainability issues are not considered, and the investment opportunities available to such portfolios may differ. Companies may not necessarily meet high performance standards on all aspects of ESG or sustainable investing issues; there is also no guarantee that any company will meet expectations in connection with corporate responsibility, sustainability, and/or impact performance.

Copyright © 2022 Deutsche Bank AG



## David Folkerts-Landau

Group Chief Economist and Global Head of Research

Pam Finelli  
Global Chief Operating  
Officer Research

Steve Pollard  
Global Head of Company  
Research and Sales

Anthony Klarman  
Global Head of  
Debt Research

Sameer Goel  
Head of APAC  
Research

Tim Rokossa  
Head of Germany  
Research

Gerry Gallagher  
Head of European  
Company Research

Matthew Barnard  
Head of Americas  
Company Research

Peter Milliken  
Head of APAC  
Company Research

Debbie Jones  
Global Head of  
Company Research ESG

Jim Reid  
Global Head of  
Thematic Research

Francis Yared  
Global Head of Rates Research

George Saravelos  
Global Head of FX Research

Peter Hooper  
Global Head of  
Economic Research

## International Production Locations

### Deutsche Bank AG

Deutsche Bank Place  
Level 16  
Corner of Hunter & Phillip Streets  
Sydney, NSW 2000  
Australia  
Tel: (61) 2 8258 1234

### Deutsche Bank AG

Equity Research  
Mainzer Landstrasse 11-17  
60329 Frankfurt am Main  
Germany  
Tel: (49) 69 910 00

### Deutsche Bank AG

Filiale Hongkong  
International Commerce Centre,  
1 Austin Road West, Kowloon,  
Hong Kong  
Tel: (852) 2203 8888

### Deutsche Securities Inc.

2-11-1 Nagatacho  
Sanno Park Tower  
Chiyoda-ku, Tokyo 100-6171  
Japan  
Tel: (81) 3 5156 6000

### Deutsche Bank AG

1 Great Winchester Street  
London EC2N 2EQ  
United Kingdom  
Tel: (44) 20 7545 8000

### Deutsche Bank Securities Inc.

The Deutsche Bank Center  
1 Columbus Circle  
New York, NY 10019  
Tel: (1) 212 250 2500