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If the Crosscurrents Strengthen, How far Could Global Growth Fall?

Peter Hooper, Ph.D.
+1-212-250-7352

Matthew Luzzetti, Ph.D.
+1-212-250-6161

Mark Wall
+44-20-754-52087

Zhiwei Zhang, Ph.D.
+852-2203 8308

Kaushik Das
+91-22-7180 4909

Drausio Giacomelli
+1-212-250-7355

Kentaro Koyama
+81-3-5156-6683

Stefan Schneider
+49-69-910-31790

Torsten Slok, Ph.D.
+1-212-250-2155

Michael Spencer, Ph.D.
+852-2203 8303

Avik Chattopadhyay

- Recent weakness in global trade and manufacturing indicators has heightened the concerns of both investors and policy makers about global risks or "crosscurrents" as Fed Chair Powell referred to them in his press conference last week. Three risks referred to most frequently of late include (1) a significant escalation of trade tensions, (2) a hard or no-deal Brexit, and (3) a sharp slowdown in China's growth. We consider the possibility that fairly extreme "tail risk" (5-10% probability) versions of each of these risks could be realized at some point in the months ahead, and we estimate how they could affect the global economy relative to our current baseline forecast.

- Our analysis focuses on ten major countries that account for about two-thirds of world GDP (PPP weights). We present an extended baseline forecast covering the next five years for these countries, assuming each of these risks diminishes appreciably over the year ahead.

- If instead, trade tensions heat up significantly and hit financial markets hard enough to yield a mild recession in the US, this outcome could depress global growth by more than a percentage point over the next two years.

- A possible shock to China's inflation that induced significant monetary tightening could cause deleveraging severe enough to cause a substantial slump in China's growth. Global financial markets would likely be hit hard enough to reduce global growth at least as much as in the trade conflict/ US recession scenario.

- A 'no-deal' Brexit would be highly disruptive to activity in Europe. We estimate the UK would lose about 4% of output relative to baseline over 2019-2020 and the euro area about 1%. With the euro area already skirting close to recession in the near term, this shock would be a recession inducer for that region. But global growth would only be reduced by half as much as in the above two scenarios. That said, if this shock should also push Italy into a debt crisis – a serious possibility as well - the negative impact on Europe and the globe could be more than doubled, bringing this scenario into the same region as the other two.

- Finally, in response to a much-lower probability of a combination of all three of these shocks, the world economy could face a downturn rivaling that which occurred during the great recession a decade ago.

Introduction

The Fed surprised markets last week by moving more quickly to a neutral stance than many expected. Lost in the shuffle of the market euphoria over the unexpectedly dovish pivot in policy was a primary reason for the shift: growing concerns about the "crosscurrents" buffeting global economic prospects as Chair Powell put it. Certainly there has been more to worry about as key indicators of economic activity in Europe and China, and even in some sectors in the US, have been weakening impressively of late. While there are many global worries, the three biggest risks on the minds of both policy makers and investors are an escalating trade conflict, Brexit, and a China slowdown. This analysis focuses on what the world might look like in the years ahead if any one (or more) of these risks should take a realized turn for the worse.

To undertake the analysis, we have mobilized a team of our regional and national chief economists globally to consider what "tail risk" scenarios might look like in each case, and to consider how each of their corners of the globe would fare under these scenarios. It was hoped that the results we obtain would bracket likely outcomes between our current, potentially optimistic, baseline forecast and any of these several "worst-case" scenarios.

In what follows, we begin by outlining our current baseline forecast, which we have extended out five years in order to analyze the full dynamics of the scenarios we consider. The baseline scenario assumes a benign outcome, with the various crosswinds dissipating over the year ahead. Even so, the uncertainties these risks have created so far are the cause of some drag on growth in our baseline view. We then turn to three different tail risk scenarios, where "tail" is defined as having a probability of 5-10% of being realized in our view. The three scenarios are, briefly:

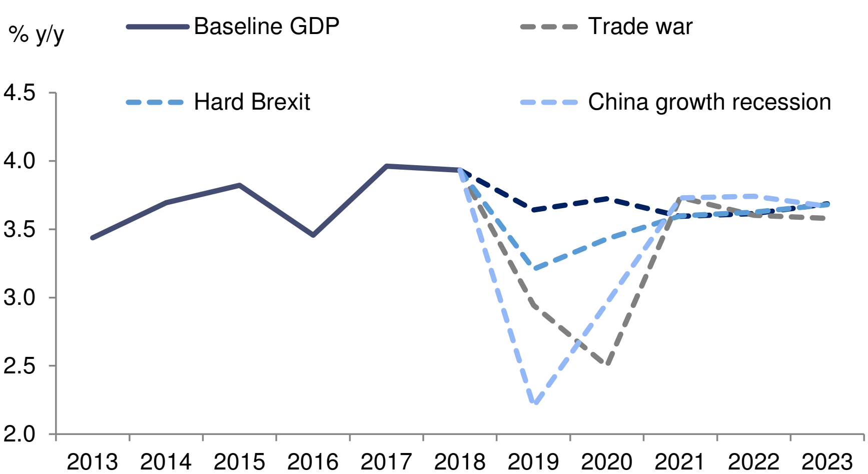
1. **Trade war**: A significant escalation of the current trade conflict with China and an extension to Europe. Higher tariffs (25%) are imposed on all US imports from China, as well as on imports of autos from Europe; China and Europe both retaliate in kind. The impact of this negative trade shock on the markets is assumed to be sufficiently large to push the US economy into a mild recession with US real GDP falling by about 1.25% from peak to trough beginning in the second half of this year. This risk is in our view the most likely cause of a near-term US recession.
2. **Hard Brexit**: Our baseline remains that the UK parliament will approve the deal that PM Theresa May has negotiated with the EU as the clock ticks down to 29 March. If we are wrong and the UK leaves the EU at the end of March without a deal or transitional arrangements, the ramifications for growth would be substantial. We estimate the UK would lose about 4% of output relative to baseline over 2019-2020 and the euro area about 1%. With Italy already skirting the edge of public debt stability under our new baseline, a no-deal Brexit shock could push Italy onto an upward sloping debt trajectory. If Italy's debt becomes unsustainable and triggers a market crisis, we would cut another 1.3% off euro area GDP over 2019-2021.
3. **China slump:** Our tail risk in China sees the leverage built up in China in recent years as an accident waiting to happen. A crisis could be touched off, for example, by a large shock to food prices that drives up CPI inflation and forces the PBoC to raise interest rates. A tightening of monetary policy to deal with the resulting rise of inflation could lead to a

disruptive deleveraging. In this extreme scenario, GDP growth in China drops three percentage points below baseline this year, from 3% to 6%, and one percentage point below baseline next year.

The impacts of these scenarios on GDP growth in the ten major countries we consider are described in the text and charts below and presented in more detail in the tables at the end of this note. The tables at the end also report baseline forecasts for and estimated impacts of the shocks on real private consumption growth and inflation through 2023 for each of the countries.

To summarize the effects of the shocks, Figure 1 shows the simulated paths that global GDP would follow under the three scenarios relative to our baseline path. The China slump would hit financial markets hard and have the greatest negative impact this year, subtracting about 1-1/2 percentage points from global growth, after which it would return to moderately above baseline by 2021. The trade shock and US recession that it would induce would also hit global growth hard as well, with the maximum negative impact coming in 2020 and a bounceback thereafter. The hard-Brexit scenario would be painful for the UK and to some extent Europe as a whole, though global growth would be cut by a more modest 1/2% point this year and a bit less in 2020 and would then return to baseline by 2021.

Figure 1: Global growth could take a significant hit under our tail risk scenarios

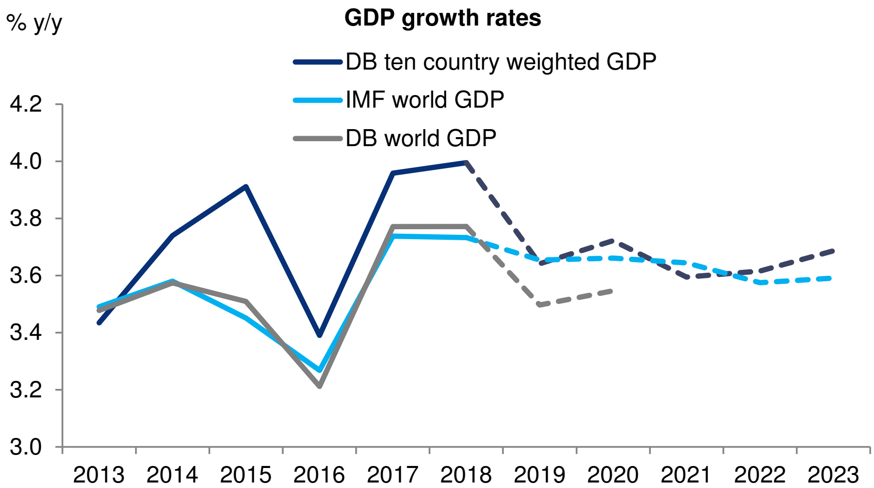


Note: Hard Brexit based on the assumption of no Italian crisis. Source: IMF, Haver Analytics, Deutsche Bank

Baseline Forecast

Our current House forecast sees global growth slowing by several tenths this year from its relatively robust pace during 2017 and 2018 and then leveling out at somewhat above 3.5% for the next several years (Figure 2). The GDP weighted average for the ten major countries we are projecting in this exercise shows growth averaging a tenth or two higher than our House forecast for world GDP. As we have noted, this forecast assumes the global risk environment proves to be relatively benign. This baseline projection implies an outlook for world GDP growth that is somewhat weaker than the IMF's World Economic Outlook published a month ago.

Figure 2: Baseline growth outlook



Source: IMF, Haver Analytics, Deutsche Bank

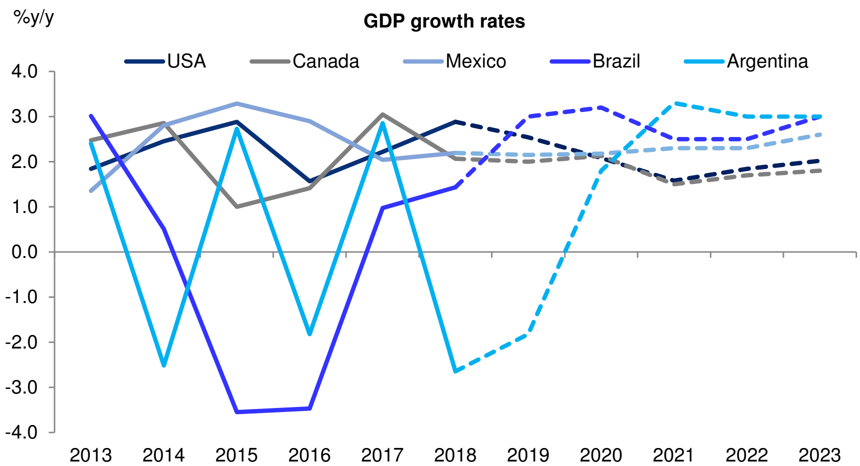
This pattern of a moderate slowdown in our baseline forecast over the next couple years is seen across many but not all of the ten major countries we consider in this analysis. We divide the countries into three major regions, as follows.

The Americas

US GDP is projected to decelerate this year and next as fiscal stimulus from last year's tax cuts and spending increases fades and as a moderate drag from the tightening of financial conditions picks up with the Fed eventually moving modestly into restrictive territory on monetary policy. We still see the Fed implementing three more 25bp rate hikes during the next two years and eventually cutting rates a bit thereafter. As a result, US growth dips to noticeably below our estimate of its 2%+ potential rate in 2020 (on a Q4/Q4 basis) and 2021 and then moves back up towards potential in 2022 and 2023. This pattern is sufficient to eventually return the US unemployment rate from an unsustainably low level today to something closer to full employment. By 2023 we see the US economy as being closely aligned with its steady state, with growth around 2%, core PCE inflation at target of 2%, the unemployment rate near a NAIRU of 4.5%, and the fed funds rate near its neutral level of 2.9%.

Canada's growth profile is projected to move roughly in line with the US. Economic expansion, while growth elsewhere in the region follows a more positive trajectory. Both **Brazil** and **Argentina** are projected to recover from recent recessions or periods of weak growth, while **Mexico's** growth, on a steadier path, is seen as trending up moderately.

Figure 3: Baseline real GDP growth for the Americas: US and Canada slowing, LatAm picking up



Source: IMF, Haver Analytics, Deutsche Bank

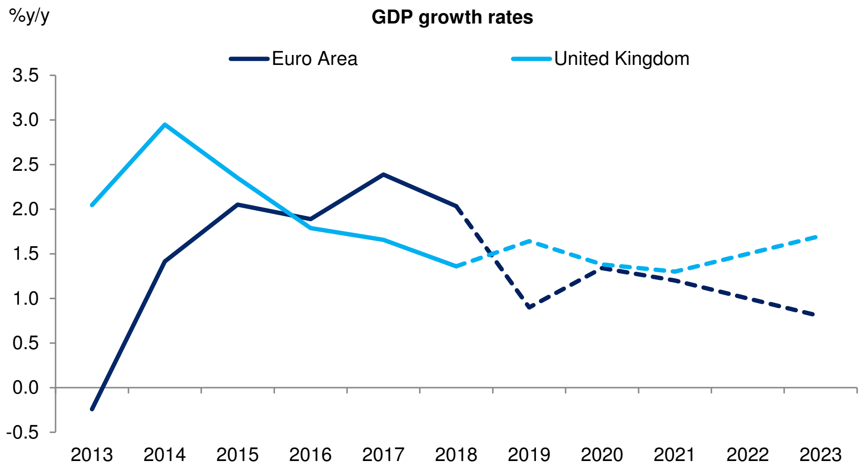
Europe

Our baseline forecast for **Europe** has just been reduced, with growth in the euro area dropping to close to zero in the first half of this year, very close to recession territory thanks to factors hitting activity in Germany (including trade and Brexit uncertainties as well as environmental regulations) and Italy (debt market tensions).[1] Growth is then expected to bounce back moderately in the second half of the year thanks to some fiscal and monetary policy stimulus as well as an assumed alleviation of trade tensions and Brexit uncertainties. The reinforcement of an already easy domestic policy stance should push euro area GDP growth above-trend in 2020 but only modestly so at 1.3% (trend c.1.0%). A continuing modestly easy fiscal stance and delayed ECB lift-off until end next year should keep euro area GDP growth above-trend again in 2021 (1.2%). The absorption of capacity should go through its final phases into 2021/2022.

A robust labour market, some fiscal easing and modest pre-Brexit stockpiling is helping to sustain UK economic growth in the face of weakening momentum in the euro area. Assuming weakness across the Channel does not persist and no-deal Brexit is avoided, UK growth could initially be held back by de-stocking before catch-up investment spending pushes growth gradually higher in the medium term. Assuming no-deal Brexit is avoided, we expect the BOE to continue the slow tightening cycle from later this year.

1 This is the first release of the new forecast for Europe, which will be described in detail in a Focus Europe publication due out very soon. Baseline forecasts for other regions have not yet adjusted for this change, but these adjustments, likely modest in size, would not affect the estimated impacts of the shocks we consider in this report.

Figure 4: Baseline growth for Europe: slowing over the next few years



Source: IMF, Haver Analytics, Deutsche Bank

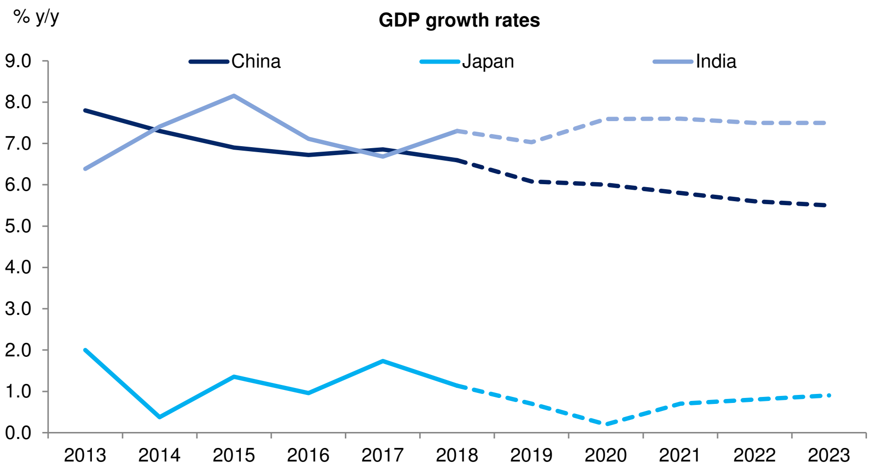
Asia

We expect a moderate slowdown in **China**, with GDP growth dropping to 6.1% in 2019 from 6.6% in 2018. We assume a partial trade deal to be reached in March, with China agreeing to make concessions such as purchasing more US goods and enforcing better protection of intellectual property, and the US putting further tariff increases on hold. The two sides will continue to negotiate on other structural issues such as the role of state-owned enterprises. The down cycle in the property sector will likely drag growth to below 6% by Q2. We expect China to loosen policies particularly in the property sector to help the economy to stabilize in H2. Looking to 2020 and beyond, China's growth should continue on a modest downtrend as structural reforms gradually move the economy to a more consumer-oriented position, with investment growth slowing noticeably and the expansion of consumer spending outstripping GDP growth by more than a percentage point.

India's GDP growth is projected to exceed China's by a gradually increasing margin, strengthening its mantle as the fastest growing major economy in the world. We see this rapid pace of expansion moderating temporarily in the first half of 2019 in response to recent monetary policy tightening. Growth is then expected to return to around 7-1/2% later this year and beyond, supported by an ongoing recovery in and expansion of private sector investment.

Japan's more advanced economy is expected to continue to grow at a much slower pace. Real GDP growth is projected to slip below its potential growth rate, which we estimate at 0.9%, in 2019-20. The near-term slowdown reflects the effects of both slower global growth and various domestic drags, including an upcoming consumption tax hike in October 2019 and a cyclical slowdown in capital investment. Growth is expected to bottom at 0.2% in 2020 when the tax increase has its maximum negative effect. Thereafter, we expect growth to gradually return to trend. Inflation will also be affected by the tax increase and related countermeasures, but we believe core inflation excluding these factors will be around 0.6%. Given these economic and price conditions, we feel that the obstacles to a monetary policy normalization by the BoJ in the years just ahead are formidable. That said, another easing would also be challenging in light of the side effects of existing policy. We therefore suspect that the BoJ will maintain its current policy stance over the years ahead.

Figure 5: Baseline growth projections for key Asian countries trending flat to lower



Source: IMF, haver Analytics, Deutsche Bank

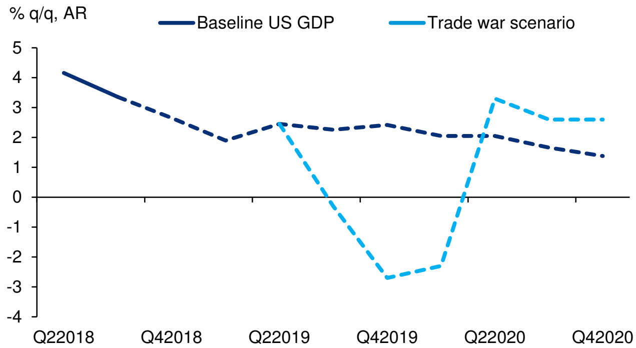
Trade war / US recession scenario

Our first risk scenario assumes trade talks between the US and China break down, and the US Administration imposes significant additional tariffs on US imports from China (25%), with retaliatory measures taken by China. It assumes further the trade conflict expands to encompass US trade in autos with Europe, fomented by US demands with retaliation from Europe.

We assume this combination of developments would hit the US stock market (indeed markets globally) hard, causing the S&P 500 to drop another 10% or so below the lows reached in recent months—well into recession territory. The resulting hit to consumer and business confidence and household wealth reduces US consumer and business spending enough to cause real GDP to fall by a total of 1.3% over three quarters beginning in Q3 this year and ending by Q2 next year. The financial market shock would be even more important than disruption to trade in driving this economic downturn.[2] A steeper recession is avoided for two reasons. First, the normal imbalances in place to worsen a downturn (overinvestment in durables and structures, housing and so on) are absent this time around. Second, we assume the Fed would act quickly to cut rates to zero and expand its balance sheet enough to support financial conditions and give growth a boost in its recovery in Q2 next year and beyond. The recession causes unemployment to rise back above its natural level, so the Fed is assumed to keep policy accommodative and thereby stimulate above trend GDP growth into 2022. The unemployment rate eventually falls back to full employment levels, the Fed returns policy to neutral, and growth returns to trend by 2023.

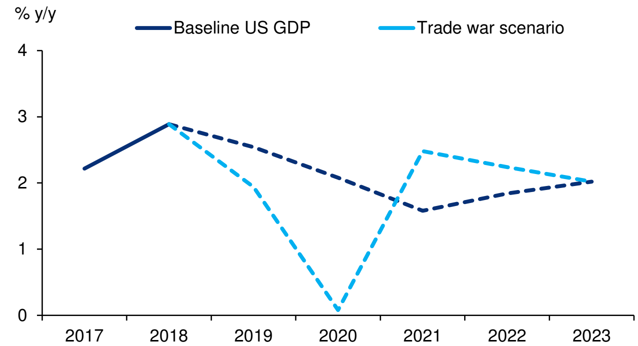
2 We assessed the impacts of a trade war on global activity in a special publication last year: The rising risk of a trade war .

Figure 6: Trade conflict assumed to push quarterly US GDP growth into negative territory from Q3 2019 through Q1 2020.



Source: BEA, Haver Analytics, Deutsche Bank

Figure 7: Trade conflict translates to near zero average annual growth in US in 2020

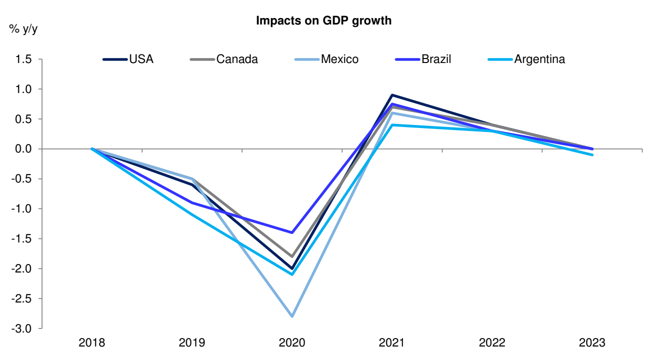


Source: BEA, Haver Analytics, Deutsche Bank

Impacts on other regions

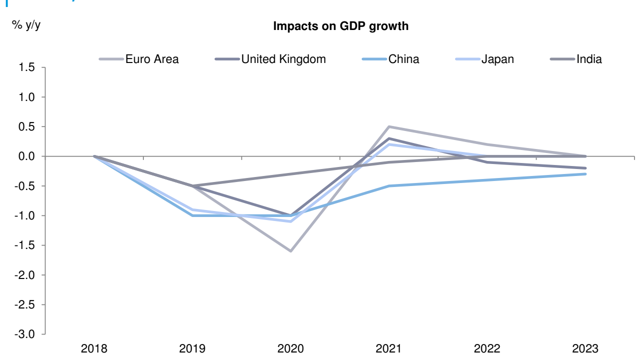
This shock, which reduces US annual GDP growth by 1/2% this year and 2% points in 2020 has a significant negative effect on most of the rest of the world. On average, GDP growth in the rest of the world is reduced by about half as much as that in the US—more so in countries closely tied to US activity like Canada, less so in more closed economies with lesser ties, like India. In the euro area and Japan, whose economies are already fragile, the shock is enough to move growth from positive to negative this year and or next. Several countries see positive bounceback above trend in 2021, mirroring the US pattern though in a more muted fashion; all are back close to trend by 2023.

Figure 8: US Recession hits the Americas region hard



Note: The data show the difference between the shock scenario and the baseline, where negative (positive) values are consistent with growth below (above) baseline. Source: IMF, Haver Analytics, Deutsche Bank

Figure 9:Asia and Europe both take significant hits in 2020, recover thereafter



Note: The data show the difference between the shock scenario and the baseline, where negative (positive) values are consistent with growth below (above) baseline. Source: IMF, Haver Analytics, Deutsche Bank

No-Deal Brexit Scenario and impacts on UK and EA

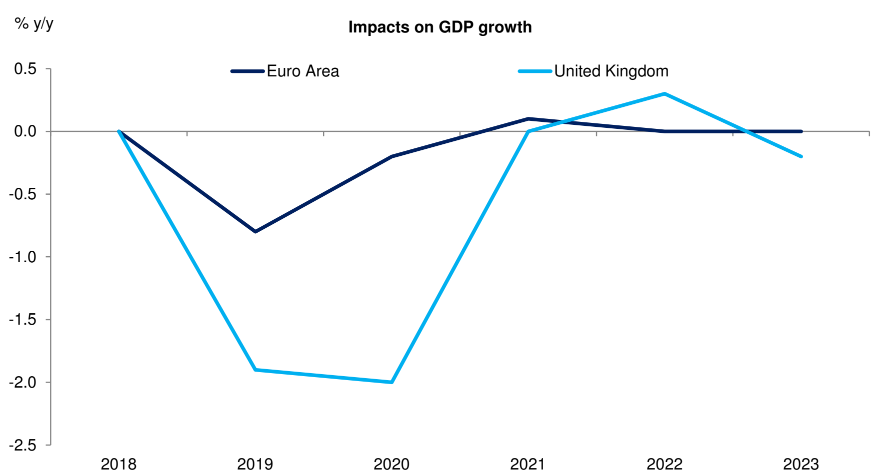
In our baseline the UK parliament approves the deal that PM Theresa May has negotiated with the EU by March 29. In this alternative scenario, we assume this deadline is not met and any deal or transitional arrangements fall through. We see the highest risk of such a hard-landing scenario commencing at the March 29 deadline. This no-deal Brexit is not equivalent to defaulting to a WTO arrangement, since many forms of cross-border economic activity are not covered by WTO rules. A no-deal Brexit would be highly disruptive to activity.

Under a no-deal, crash-out scenario we calculate UK GDP growth will be around 4% cumulatively lower than under our baseline scenario by end-2020. The UK will enter a two-year recession, with GDP contracting by 0.3% and 0.6% in 2019 and 2020, respectively, predominantly through a real income shock to private consumption, a drop in investment spending, and a collapse in trade volumes. The impact of no-deal Brexit on the euro area will be material. After the recent deterioration in economic conditions in the euro area, we are more concerned that the confidence and financial conditions transmission channels could be more costly than previously thought. We now estimate the net cost to euro area GDP at 0.8% of GDP in Year 1 and 0.2% in Year 2. Given our reduced baseline, a no-deal Brexit would put the euro area economy into recession.

These estimates assume the no-deal Brexit shock does not trigger an Italy crisis. Italy has a below-average exposure to trade with the UK and a replacement for TLTRO2 by mid-year — which we expect — would be especially beneficial to Italy. However, with Italy already skirting the edge of public debt stability under our new baseline, any of the shock scenarios considered in this article — no-deal Brexit included —could push Italy onto an upward-sloping debt trajectory and trigger a market crisis. If we arbitrarily assume euro-area private domestic demand suffers a shock equivalent to three quarters of the 2011-2012 crisis peak-to-trough declines and — unlike 2011-2012 — looser fiscal policy and weaker exports, an Italy crisis could reduce euro-area GDP by a further 1.3pp over 2019-2021. This would slightly more than double the negative effect of the hard-Brexit-alone scenario. Current account imbalances have corrected but as a big economy, Italy can still transmit a larger real shock through trade and confidence channels (these estimates assume a macro crisis rather than existential euro-break up crisis).

The negative effects of this shock depress growth in both the UK and the EA through 2020, after which there is a modest overshoot of the baseline paths and an eventual return to near baseline (Figure 10).

Figure 10: No-deal Brexit scenario: UK is hit hard, EA also sees a sizable drop in growth

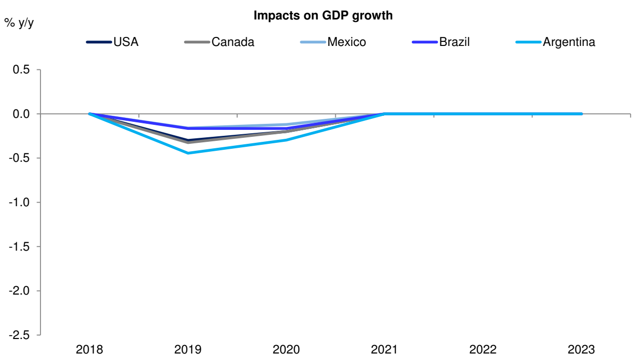


Note: The data show the difference between the shock scenario and the baseline, where negative (positive) values are consistent with growth below (above) the baseline. Source: IMF, Haver Analytics, Deutsche Bank

Impacts on other regions

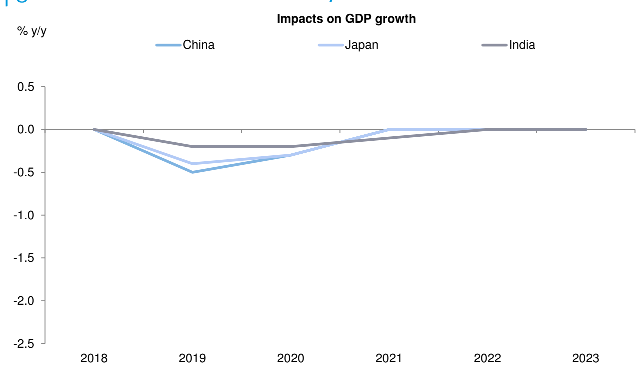
The no-deal Brexit scenario would reduce GDP growth in other regions of the world by roughly between ¼ and ½ percentage point over the next two years and then return to baseline. If the shock were extended to include a debt crisis in Italy, these negative impacts would be roughly twice as large, putting them more in line with the two shocks we consider.

Figure 11:Hard Brexit cuts growth in the Americas by up to several tenths for two years



Note: The data show the difference between the shock scenario and the baseline, where negative (positive) values are consistent with growth below (above) the baseline. Source: IMF, Haver Analytics, Deutsche Bank

Figure 12:Hard Brexit has moderate negative impact on growth in Asia for next two years



Note: The data show the difference between the shock scenario and the baseline, where negative (positive) values are consistent with growth below (above) the baseline. Source: IMF, Haver Analytics, Deutsche Bank

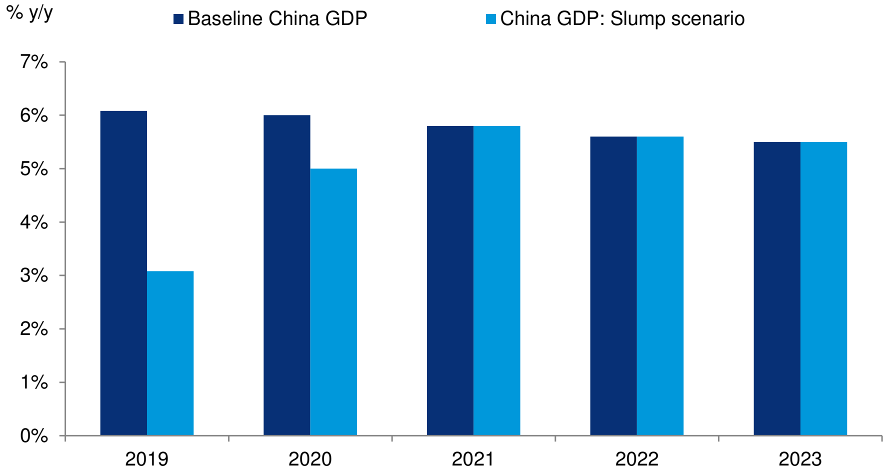
China slump scenario

Policy makers and investors are worried about financial risks in China because of the rapid buildup of leverage since 2008. The risks are unlikely to lead to a crisis in the short term as the government manages to tighten regulation and keep interest rates low. But in a tail risk scenario, a large shock to food prices could lead to a jump in CPI inflation and force the PBoC to tighten its monetary policy stance. An over-tightening of policy could touch off a disruptive deleveraging that could be highly damaging to the economy.

In the past 30 years China has experienced several episodes of high inflation. All of these episodes were caused by food price shocks such as swine flus which were hard to forecast. The PBoC reacted to headline CPI inflation rather than core inflation by hiking its benchmark interest rates. High inflation is obviously a tail risk as the economy is slowing down. A supply shock to inflation is rare, but cannot be ruled out either.

A drop in the GDP growth rate 3% below our baseline expectation of 6% in 2019 (and an even greater slowing from 6.6% in 2018) would be a major slump or growth crisis. In comparison, China's growth slowed by 4-1/2 percentage points from 14.2% in 2007 to 9.7% in 2008 due to domestic policy tightening and the global financial crisis. Growth at 3% may sound abnormally low for China, but we need to keep in mind that China today is very different from ten years ago as (1) the size of the economy has risen to RMB 90trn in 2018 from 34trn in 2008; (2) the labor force peaked around 2012; (3) the benefit of globalization for Chinese exports is fading; and (4) the policy room to boost growth is more constrained. Even so, this shock is extreme. We include it in part because of considerable market interest in the potential implications of such a shock.

Figure 13: A large shock to China's real GDP growth

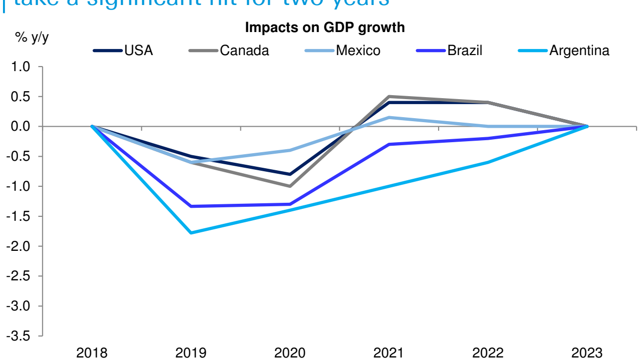


Source: IMF, Haver Analytics, Deutsche Bank

Impacts on other regions

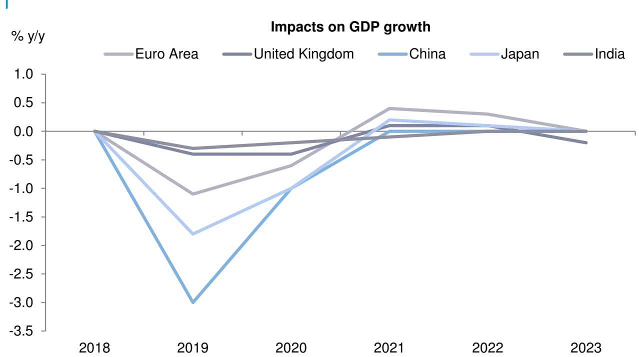
A China slowdown of this magnitude would be a major disruption, indeed crisis, for global financial markets. Stock and credit markets would be hit hard and magnify the transmission of this shock to the rest of the world. Commodity prices leveraged to global growth momentum would also take a hit. Output in the US and much of the Americas, Europe and especially Japan would be hit hard, with growth depressed by a percentage point of more over the next year or two. Monetary authorities in the US and Europe would ease policy, with the Fed cutting rates and the ECB moving to a stronger form of longer-term refinancing, an extension of forward guidance and potentially a new round of private asset purchases. These easing measures and other cyclical forces would eventually result in some overshoot of the baseline path until labor markets had returned to more normal and desired levels. Other countries with less room to ease policy, such as Japan, Argentina, Brazil, would experience more subdued rebounds or larger and more prolonged downturns.

Figure 14: China slump: Growth in the Americas would take a significant hit for two years



Source: IMF, Haver Analytics, Deutsche Bank

Figure 15: Asia and Europe would also be hit hard



Source: IMF, Haver Analytics, Deutsche Bank

Conclusion

Any one of the three risk scenarios we have considered, trade war/US recession, hard Brexit, or China slump could have a sizable negative impact on the global economy, reducing growth by at least a half to one percent over the next two years or so. A no-deal Brexit would be at the lower end of this range, but if combined with a very possibly induced Italian debt crisis, the effect could move to the upper end, more in line with the other two shocks. Economies that are already flirting with near-zero growth in the near term, like the euro area and Japan, would be pushed into recession in any of the scenarios. Some other countries would move significantly closer to that outcome. We still see the probability of any one of these negative outcomes as relatively low. Even lower in probability, but also more frightening, would be a combination of two or three if these shocks simultaneously. Such a combination could well be enough to produce a repeat of the last great recession. In brief, the probabilities may be low, but it is appropriate for the risks to be taken seriously.

Appendix: Data for Baseline and Shock Scenarios

Figure 16: Trade war scenario: Impact on GDP growth (%)

	Baseline GDP					Scenario 1: Trade conflict leading to mild US recession					Shock Impact				
Country	**2019**	**2020**	**2021**	**2022**	**2023**	**2019**	**2020**	**2021**	**2022**	**2023**	**2019**	**2020**	**2021**	**2022**	**2023**
USA	2.5	2.1	1.6	1.8	2.0	1.9	0.1	2.5	2.2	2.0	-0.6	-2.0	0.9	0.4	0.0
United Kingdom	1.6	1.4	1.3	1.5	1.7	1.1	0.4	1.6	1.4	1.5	-0.5	-1.0	0.3	-0.1	-0.2
Canada	2.0	2.1	1.5	1.7	1.8	1.5	0.3	2.2	2.1	1.8	-0.5	-1.8	0.7	0.4	0.0
Euro Area	0.9	1.3	1.2	1.0	0.8	0.4	-0.3	1.7	1.2	0.8	-0.5	-1.6	0.5	0.2	0.0
China	6.1	6.0	5.8	5.6	5.5	5.1	5.0	5.3	5.2	5.2	-1.0	-1.0	-0.5	-0.4	-0.3
Japan	0.7	0.2	0.7	0.8	0.9	-0.2	-0.9	0.9	0.8	0.9	-0.9	-1.1	0.2	0.0	0.0
India	7.0	7.6	7.6	7.5	7.5	6.5	7.3	7.5	7.5	7.5	-0.5	-0.3	-0.1	0.0	0.0
Mexico	2.2	2.2	2.3	2.3	2.6	1.7	-0.6	2.9	2.6	2.6	-0.5	-2.8	0.6	0.3	0.0
Brazil	3.0	3.2	2.5	2.5	3.0	2.1	1.8	3.3	2.8	3.0	-0.9	-1.4	0.8	0.3	0.0
Argentina	-1.8	1.8	3.3	3.0	3.0	-2.9	-0.3	3.7	3.3	2.9	-1.1	-2.1	0.4	0.3	-0.1

Source: Deutsche Bank

Figure 17: Hard-Brexit scenario: Impact on GDP growth (%)

	Baseline GDP					Scenario 2: Hard (no deal) Brexit***					Shock Impact				
Country	**2019**	**2020**	**2021**	**2022**	**2023**	**2019**	**2020**	**2021**	**2022**	**2023**	**2019**	**2020**	**2021**	**2022**	**2023**
USA	2.5	2.1	1.6	1.8	2.0	2.2	1.9	1.6	1.8	2.0	-0.3	-0.2	0.0	0.0	0.0
United Kingdom	1.6	1.4	1.3	1.5	1.7	-0.3	-0.6	1.3	1.8	1.5	-1.9	-2.0	0.0	0.3	-0.2
Canada	2.0	2.1	1.5	1.7	1.8	1.7	1.9	1.5	1.7	1.8	-0.3	-0.2	0.0	0.0	0.0
Euro Area	0.9	1.3	1.2	1.0	0.8	0.1	1.1	1.3	1.0	0.8	-0.8	-0.2	0.1	0.0	0.0
China	6.1	6.0	5.8	5.6	5.5	5.6	5.7	5.8	5.6	5.5	-0.5	-0.3	0.0	0.0	0.0
Japan	0.7	0.2	0.7	0.8	0.9	0.3	-0.1	0.7	0.8	0.9	-0.4	-0.3	0.0	0.0	0.0
India	7.0	7.6	7.6	7.5	7.5	6.8	7.4	7.5	7.5	7.5	-0.2	-0.2	-0.1	0.0	0.0
Mexico	2.2	2.2	2.3	2.3	2.6	2.0	2.1	2.3	2.3	2.6	-0.2	-0.1	0.0	0.0	0.0
Brazil	3.0	3.2	2.5	2.5	3.0	2.8	3.0	2.5	2.5	3.0	-0.2	-0.2	0.0	0.0	0.0
Argentina	-1.8	1.8	3.3	3.0	3.0	-2.3	1.5	3.3	3.0	3.0	-0.4	-0.3	0.0	0.0	0.0

Note: UK and Euro Area numbers are based on the assumption of NO ITALIAN CRISIS. Source: Deutsche Bank

Figure 18: China growth recession scenario: Impact on GDP growth (%)

	Baseline GDP					Scenario 3: China Recession					Shock Impact				
Country	**2019**	**2020**	**2021**	**2022**	**2023**	**2019**	**2020**	**2021**	**2022**	**2023**	**2019**	**2020**	**2021**	**2022**	**2023**
USA	2.5	2.1	1.6	1.8	2.0	2.0	1.3	2.0	2.2	2.0	-0.5	-0.8	0.4	0.4	0.0
United Kingdom	1.6	1.4	1.3	1.5	1.7	1.2	1.0	1.4	1.6	1.5	-0.4	-0.4	0.1	0.1	-0.2
Canada	2.0	2.1	1.5	1.7	1.8	1.4	1.1	2.0	2.1	1.8	-0.6	-1.0	0.5	0.4	0.0
Euro Area	0.9	1.3	1.2	1.0	0.8	-0.2	0.7	1.6	1.3	0.8	-1.1	-0.6	0.4	0.3	0.0
China	6.1	6.0	5.8	5.6	5.5	3.1	5.0	5.8	5.6	5.5	-3.0	-1.0	0.0	0.0	0.0
Japan	0.7	0.2	0.7	0.8	0.9	-1.1	-0.8	0.9	0.9	0.9	-1.8	-1.0	0.2	0.1	0.0
India	7.0	7.6	7.6	7.5	7.5	6.7	7.4	7.5	7.5	7.5	-0.3	-0.2	-0.1	0.0	0.0
Mexico	2.2	2.2	2.3	2.3	2.6	1.6	1.8	2.5	2.3	2.6	-0.6	-0.4	0.2	0.0	0.0
Brazil	3.0	3.2	2.5	2.5	3.0	1.7	1.9	2.2	2.3	3.0	-1.3	-1.3	-0.3	-0.2	0.0
Argentina	-1.8	1.8	3.3	3.0	3.0	-3.6	0.4	2.3	2.4	3.0	-1.8	-1.4	-1.0	-0.6	0.0

Source: Deutsche Bank

Figure 19: Trade war scenario: Impact on consumption growth (%)

	Baseline Real Private Consumption					Scenario 1: Trade conflict leading to mild US recession					Shock Impact				
Country	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
USA	2.9	2.3	1.8	2.2	2.5	2.4	0.5	2.4	2.3	2.5	-0.5	-1.8	0.6	0.1	0.0
United Kingdom	1.3	1.1	1.1	1.3	1.5	1.0	0.5	1.6	1.4	1.5	-0.3	-0.6	0.5	0.1	0.0
Canada	2.0	1.9	1.9	2.1	2.1	1.5	0.1	2.5	2.2	2.1	-0.5	-1.8	0.6	0.1	0.0
Euro Area	0.7	1.2	1.0	0.7	0.5	0.4	0.3	1.3	0.8	0.5	-0.3	-0.9	0.3	0.1	0.0
China	7.5	7.2	6.9	6.7	6.5	6.7	6.4	6.5	6.4	6.3	-0.8	-0.8	-0.4	-0.3	-0.2
Japan	1.3	0.2	0.9	0.6	0.7	0.9	-0.3	1.0	0.6	0.7	-0.4	-0.5	0.1	0.0	0.0
India	6.6	7.1	7.2	7.0	7.0	6.2	6.9	7.1	7.0	7.0	-0.4	-0.2	-0.1	0.0	0.0
Mexico	2.6	2.7	2.0	2.3	2.4	2.3	1.0	2.4	2.5	2.4	-0.3	-1.7	0.4	0.2	0.0
Brazil	3.4	3.5	2.8	2.9	2.9	2.9	2.6	3.1	3.1	2.8	-0.5	-0.9	0.3	0.2	-0.1
Argentina	-4.4	2.1	1.7	3.0	2.9	-5.1	0.9	2.0	3.2	2.9	-0.7	-1.2	0.3	0.2	0.0

Source: Deutsche Bank

Figure 20: Hard-Brexit scenario: Impact on consumption growth (%)

	Baseline Real Private Consumption					Scenario 2: Hard (no deal) Brexit***					Shock Impact				
Country	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
USA	2.9	2.3	1.8	2.2	2.5	2.8	2.2	1.8	2.2	2.5	-0.2	-0.1	0.0	0.0	0.0
United Kingdom	1.3	1.1	1.1	1.3	1.5	-1.2	-2.2	0.8	1.5	1.5	-2.5	-3.3	-0.3	0.2	0.0
Canada	2.0	1.9	1.9	2.1	2.1	1.9	1.8	1.9	2.1	2.1	-0.2	-0.1	0.0	0.0	0.0
Euro Area	0.7	1.2	1.0	0.7	0.5	0.5	1.1	1.0	0.7	0.5	-0.2	-0.1	0.0	0.0	0.0
China	7.5	7.2	6.9	6.7	6.5	7.1	7.0	6.9	6.7	6.5	-0.4	-0.2	0.0	0.0	0.0
Japan	1.3	0.2	0.9	0.6	0.7	1.1	0.0	0.9	0.6	0.7	-0.2	-0.2	0.0	0.0	0.0
India	6.6	7.1	7.2	7.0	7.0	6.4	7.0	7.1	7.0	7.0	-0.2	-0.1	-0.1	0.0	0.0
Mexico	2.6	2.7	2.0	2.3	2.4	2.5	2.6	2.0	2.3	2.4	-0.1	-0.1	0.0	0.0	0.0
Brazil	3.4	3.5	2.8	2.9	2.9	3.2	3.4	2.8	2.9	2.9	-0.2	-0.1	0.0	0.0	0.0
Argentina	-4.4	2.1	1.7	3.0	2.9	-4.8	1.9	1.7	3.0	2.9	-0.4	-0.2	0.0	0.0	0.0

Note: UK and Euro-Area numbers are based on the assumption of NO ITALIAN CRISIS. Source: Deutsche Bank

Figure 21: China growth recession scenario: Impact on consumption growth (%)

	Baseline Real Private Consumption					Scenario 3: China Recession					Shock Impact				
Country	**2019**	**2020**	**2021**	**2022**	**2023**	**2019**	**2020**	**2021**	**2022**	**2023**	**2019**	**2020**	**2021**	**2022**	**2023**
USA	2.9	2.3	1.8	2.2	2.5	2.6	1.8	2.4	2.7	2.5	-0.3	-0.5	0.6	0.5	0.0
United Kingdom	1.3	1.1	1.1	1.3	1.5	1.0	0.9	1.3	1.4	1.5	-0.3	-0.2	0.2	0.1	0.0
Canada	2.0	1.9	1.9	2.1	2.1	1.7	1.4	2.5	2.6	2.1	-0.3	-0.5	0.6	0.5	0.0
Euro Area	0.7	1.2	1.0	0.7	0.5	0.1	0.8	1.3	0.9	0.5	-0.6	-0.4	0.3	0.2	0.0
China	7.5	7.2	6.9	6.7	6.5	5.5	6.2	6.9	6.7	6.5	-2.0	-1.0	0.0	0.0	0.0
Japan	1.3	0.2	0.9	0.6	0.7	0.5	-0.2	1.0	0.6	0.7	-0.8	-0.4	0.1	0.0	0.0
India	6.6	7.1	7.2	7.0	7.0	6.3	6.9	7.1	7.0	7.0	-0.3	-0.2	-0.1	0.0	0.0
Mexico	2.6	2.7	2.0	2.3	2.4	2.2	2.4	2.1	2.3	2.4	-0.4	-0.3	0.1	0.0	0.0
Brazil	3.4	3.5	2.8	2.9	2.9	2.6	2.7	2.5	2.7	2.9	-0.8	-0.8	-0.3	-0.2	0.0
Argentina	-4.4	2.1	1.7	3.0	2.9	-5.8	0.9	1.0	2.7	2.9	-1.4	-1.2	-0.7	-0.3	0.0

Source: Deutsche Bank

Figure 22: Trade war scenario: Impact on inflation (%)

	Baseline Inflation					Scenario 1: Trade conflict leading to mild US recession					Shock Impact				
Country	**2019**	**2020**	**2021**	**2022**	**2023**	**2019**	**2020**	**2021**	**2022**	**2023**	**2019**	**2020**	**2021**	**2022**	**2023**
USA	1.5	2.2	2.3	2.4	2.4	1.5	2.1	1.7	2.0	2.3	0.0	-0.2	-0.6	-0.4	-0.1
United Kingdom	2.0	2.1	2.0	2.1	2.2	1.7	2.0	1.9	2.0	2.1	-0.3	-0.1	-0.1	-0.1	-0.1
Canada	1.6	2.1	2.2	2.2	2.2	1.6	1.9	1.6	1.8	2.1	0.0	-0.2	-0.6	-0.4	-0.1
Euro Area	1.3	1.6	1.6	1.6	1.6	1.3	1.5	1.5	1.4	1.5	-0.1	-0.1	-0.1	-0.2	-0.1
China	2.4	2.6	2.5	2.5	2.5	1.9	2.2	2.3	2.3	2.3	-0.5	-0.4	-0.2	-0.2	-0.2
Japan	0.4	0.7	0.7	1.2	1.4	0.2	0.3	0.5	1.1	1.4	-0.2	-0.4	-0.2	-0.1	0.0
India	4.1	4.4	4.5	4.5	4.5	3.6	4.1	4.2	4.5	4.5	-0.5	-0.3	-0.3	0.0	0.0
Mexico	4.2	3.4	3.5	3.4	3.5	4.4	4.3	3.7	3.1	3.3	0.2	0.9	0.2	-0.3	-0.2
Brazil	3.7	4.3	4.1	4.2	3.8	4.0	3.9	3.9	3.9	3.8	0.3	-0.4	-0.2	-0.3	0.0
Argentina	41.9	22.9	18.5	20.0	20.0	46.9	27.9	18.5	17.0	15.0	5.0	5.0	0.0	-3.0	-5.0

Source: Deutsche Bank

Figure 23: Hard-Brexit scenario: Impact on inflation (%)

	Baseline Inflation					Scenario 2: Hard (no deal) Brexit***					Shock Impact				
Country	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
USA	1.5	2.2	2.3	2.4	2.4	1.5	2.2	2.1	2.3	2.4	0.0	0.0	-0.2	-0.1	0.0
United Kingdom	2.0	2.1	2.0	2.1	2.2	3.5	4.2	3.0	2.6	2.2	1.5	2.1	1.0	0.5	0.0
Canada	1.6	2.1	2.2	2.2	2.2	1.6	2.1	2.0	2.1	2.2	0.0	0.0	-0.2	-0.1	0.0
Euro Area	1.3	1.6	1.6	1.6	1.6	1.3	1.4	1.5	1.5	1.5	-0.1	-0.2	-0.1	-0.1	-0.1
China	2.4	2.6	2.5	2.5	2.5	2.2	2.4	2.5	2.5	2.5	-0.2	-0.2	0.0	0.0	0.0
Japan	0.4	0.7	0.7	1.2	1.4	0.1	0.5	0.6	1.2	1.4	-0.3	-0.2	-0.1	0.0	0.0
India	4.1	4.4	4.5	4.5	4.5	3.8	4.2	4.4	4.5	4.5	-0.3	-0.2	-0.1	0.0	0.0
Mexico	4.2	3.4	3.5	3.4	3.5	4.3	3.3	3.5	3.4	3.5	0.1	-0.1	0.0	0.0	0.0
Brazil	3.7	4.3	4.1	4.2	3.8	3.8	4.2	4.1	4.2	3.8	0.1	-0.1	0.0	0.0	0.0
Argentina	41.9	22.9	18.5	20.0	20.0	42.5	22.7	18.5	20.0	20.0	0.6	-0.2	0.0	0.0	0.0

Note: UK and Euro-Area numbers are based on the assumption of NO ITALIAN CRISIS. Source: Deutsche Bank

Figure 24: China growth recession scenario: Impact on inflation (%)

	Baseline Inflation					Scenario 3: China Recession					Shock Impact				
Country	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
USA	1.5	2.2	2.3	2.4	2.4	1.5	2.1	1.9	2.1	2.3	0.0	-0.1	-0.4	-0.3	-0.1
United Kingdom	2.0	2.1	2.0	2.1	2.2	1.7	1.9	2.0	2.2	2.2	-0.3	-0.2	0.0	0.1	0.0
Canada	1.6	2.1	2.2	2.2	2.2	1.6	2.0	1.8	1.9	2.1	0.0	-0.1	-0.4	-0.3	-0.1
Euro Area	1.3	1.6	1.6	1.6	1.6	1.5	1.4	1.4	1.4	1.5	0.1	-0.2	-0.2	-0.2	-0.2
China	2.4	2.6	2.5	2.5	2.5	6.0	3.5	2.5	2.5	2.5	3.6	0.9	0.0	0.0	0.0
Japan	0.4	0.7	0.7	1.2	1.4	-0.2	0.2	0.6	1.1	1.4	-0.6	-0.5	-0.1	-0.1	0.0
India	4.1	4.4	4.5	4.5	4.5	3.7	4.1	4.3	4.5	4.5	-0.4	-0.3	-0.2	0.0	0.0
Mexico	4.2	3.4	3.5	3.4	3.5	4.5	3.2	3.4	3.4	3.5	0.3	-0.2	-0.1	0.0	0.0
Brazil	3.7	4.3	4.1	4.2	3.8	4.4	4.5	3.9	3.9	3.8	0.7	0.2	-0.2	-0.3	0.0
Argentina	41.9	22.9	18.5	20.0	20.0	45.9	25.3	19.8	20.5	20.0	4.0	2.4	1.3	0.5	0.0

Source: Deutsche Bank

Appendix 1

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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
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 6770

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

Deutsche Bank Securities Inc.
60 Wall Street
New York, NY 10005
United States of America
Tel: (1) 212 250 2500