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Impact of Covid-19 on the global economy Update 2: Severe recession

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- Covid-19 has become a pandemic and spread further and more rapidly than was generally expected several weeks ago. We now have early evidence of the negative economic impact on China and it has been far in excess of our initial projections. This, among other factors, including more widespread and draconian containment measures to deal with the spread, the emergence of strain in credit markets, and sharp tightening of financial conditions have caused us to revise down substantially our global growth forecasts in the first half of the year.
- In light of these developments, we now see a severe global recession occurring in the first half of 2020, with aggregate demand plunging in China in Q1 and in the EA and US in Q2. The quarterly declines in GDP growth we anticipate substantially exceed anything previously recorded going back to at least World War II.
- The crisis has also engendered unprecedented (or nearly so) policy responses. The Fed and ECB, already relatively low on ammunition, have gone pretty much all out in their responses. The Fed has moved rates to zero in short order, and both have injected tremendous amounts of liquidity into money and credit markets in an effort to diminish the prospects for another major financial crisis.
- The fiscal response could turn out to be huge, with serious discussion in the US of stimulus packages amounting to 6% of GDP on top of already significant automatic stabilizers. In Europe, the fiscal rules have been effectively suspended and leaders pledge to spend "whatever it takes".
- We cannot stress enough the degree of uncertainty surrounding these projections. These are truly unprecedented events with no adequate historical example with which to precisely anchor our forecast. The evolution of the virus is also highly uncertain. Our baseline forecast assumes that the severe containment measures being taken will succeed in flattening the epidemic curves by midyear in the EA and US, and that activity there will begin to bounce back in Q3 and Q4, supported also by the massive policy responses. This baseline view of a "V" shaped recovery is based importantly on clear signs that economic activity in China is quickly returning to normal even as Q1 is drawing to a close.
- It is easy to imagine a still worse outcome. The virus could prove more difficult to contain in the US and EA than it was in China. Stress in financial markets could also trigger non-linearities that lead to sharper and more protracted declines in activity. That said, we take some heart in the commitment of political leadership to do what it takes to slow the spread and ease financial tensions, as well as in the relatively sound condition of the global economy and banking sectors when the epidemic started.

Introduction

A little over two weeks ago, as it was becoming clear that the coronavirus epidemic was spreading beyond China, with significant outbreaks in Korea, Italy, and Iran, we updated our global forecast to anticipate a mild global recession in the first half of 2020. Today, we make a significant further update of our forecast, following news of (1) faster and wider spread of the virus in Europe and the US, (2) a much-sharper-than-expected drop in economic activity in China in January and February, (3) indications of severe stress emerging in money and credit markets globally, and at the same time, (4) signs that the virus has been effectively contained and activity is already returning toward more normal levels in China and elsewhere in Asia.

We now expect the global economy will incur a severe but still relatively brief recession during the first half of 2020. All major regions of the globe could very well experience the sharpest quarterly declines in activity that have been recorded during the post World War II era. Even so, the level of activity should be back close to normal by next year.

Our previous baseline forecasts, particularly in the US and Europe, were informed by the impact that the SARS epidemic had on Hong Kong and Canada in 2003. The hit to China's activity from Covid-19 appears now to be far more severe than anticipated. Indicators of consumer and business spending (retail sales and fixed asset investment) were down more than 20% from year-earlier levels and industrial production was down 13%. Even with a significant bounce anticipated in March, these numbers suggest that GDP fell about 9% at a quarterly rate or around 30% at an annual rate in Q1.[1] At the same time, unemployment rose only 1%pt, indicating that people kept their jobs if not their incomes. The sudden plunge in spending was caused by a combination of fear, uncertainty, and self- and government-imposed social distancing induced by a virus that is relatively infectious and significantly more lethal than common flu.

Given the parallels that we see in the spread of the virus to Europe, and with a slightly longer lag to the US, we now expect to see plunges in spending in these regions in March, April, and May, with recovery beginning to occur in May and June, depending on the region. We are now projecting real GDP in Q2 to decline by 24% (SAAR) in the euro Area (including 28% in Germany), and 13% in the US. The uncertainty bands around these projections are even wider than they were previously. As we have noted, these numbers are significantly beyond the range of modern historical experience. The largest quarterly declines in GDP in the US during the great recession of 1980 and the great financial crisis of 2008-09 were on the order of 8% (SAAR), and the previous record was a 10% drop in 1958Q1.

Also highly uncertain is the timing and speed of the recovery from this plunge. Recovery already appears to be occurring in China with various signs of activity returning towards normal in the wake of a dramatic flattening of that country's epidemic curve. We assume that the drastic steps now being taken in Europe to curb the spread of the virus—steps that are likely to ensue before long in the US—will both precipitate the near-term plunge in activity and succeed in slowing the spread of the virus substantially over the months ahead. This containment should allow economic activity to begin to normalize as it has in China. The speed of the economic recovery will also be influenced by the magnitude of stimulative

1 Follow this link to our report on the data and our estimate of Q1 GDP growth in China.

monetary and fiscal responses, as well as the severity of the financial crunch induced and the speed of recovery in financial conditions. Growth will bounce back as consumer and investment spending returns to more normal levels. There could even be some payback for spending foregone during the downturn. But we expect less than a full payback even after factoring in the impressive scale of fiscal and monetary ammunition that is being (and likely to be) brought to bear.

If the virus fails to level off by the end of Q2 and continues to advance through Q3 with containment efforts continuing apace, we would be looking at a substantially deeper recession and recovery probably not seriously under way until late in the year or 2021.

Our new baseline and previous forecasts are presented in the following charts and tables, which show quarterly growth of real GDP at seasonally-adjusted annual rates. Our synthetic world total growth (G4, including EA, US, China, Japan) drops 12% in Q1, by far the worst quarterly decline in global growth over the history we have for that series. That plunge is followed by stabilization in Q2 and a bounce to 10% growth in Q3 and 8% in Q4. For the year as a whole, we now expect G4 growth of only about 0.8%, down from 3.2% last year.

In what follows, we briefly describe the outlooks for the China; Japan; the Euro Area with a focus on Germany; and the US. The note ends with a description of fiscal and monetary policy actions that have been taken and are expected to be taken in each of the regions.

Economic impact

China / Asia

The unprecedented drop in activity in Jan/Feb has led us to revise down our estimate of Q1 growth sharply to -5.0%yoy (-9%QoQ(sa)). Social distancing behavior led to a 43% decline in restaurant receipts in those two months, a 37% decline in car sales and about a 13% decline in everything else. Most of this took place in February when demand apparently collapsed nationwide. We had expected this in Wuhan, but only to a lesser extent elsewhere.

Lost sales of cars and other durables might be recouped in Q2 as behavior normalizes. Indicators like power consumption, steel production, property sales and traffic congestion all suggest a gradual process of normalization is underway that should be largely complete some time next month. We therefore expect significantly improved data for the economy in March and look for Q2 growth of 0.7%yoy (7.4%QoQ(sa)). While the deeper US/EA recession will continue to restrain growth until the summer, the growth outlook for the economy depends far more, at this juncture, on the behavior of domestic consumers and businesses. It was they that caused this deep recession and they are already, it seems, pulling China out of it.

Recovery will be aided by stimulative monetary and fiscal policies. On the monetary front, the PBOC has already cut the RRR by at least 100bps and the MLF rate by 15bps. We expect further RRR cuts, another 40-50bps off the MLF and 25bps off the benchmark deposit rate. Substantial support has been provided by banks, who have been guided (and funded) to continue to lend to companies if only to meet payrolls. We expect the augmented government budget deficit to rise by about 3% of GDP.

The downgrades to the growth outlooks for China, the US and Europe have led us to lower the growth forecast for Japan by 1.2%pt this year, but the recession in Japan -- three quarters of declining real GDP -- is expected to be shallower than in these other regions because there hasn't been the same degree of social distancing behavior or compulsion in Japan as there has been in China or parts of Europe or will be, we expect, in the US. Available data through February show few signs of the crisis, so we expect the impact to be concentrated in March - May.

The BoJ's policy package this week was very modest in scope and scale. We don't expect a rate cut unless the yen strengthens beyond 100/USD and the new lending facility, carrying an interest rate above the policy rate, doesn't seem attractive enough to encourage much new lending. On the fiscal front, we expect a supplementary budget of JPY10-15tn (1.8% - 2.7% of GDP). We expect this to be concentrated on providing aid to the most affected sectors of the economy. Possible measures include subsidies for the tourism sector, cash benefits for childrearing households, and subsidies for manufacturers repatriating production to Japan.

For the rest of the Asia Pacific region, likewise, the revisions to growth forecasts largely reflect the weaker outlook in the major export markets. We have marked down growth in India by 0.9% this year to 4.0%, but the Covid virus is not yet at the centre of policymakers' attention. Growth in Australia and New Zealand has been reduced by about 1%pt – less than the US and EA – as both countries have implemented well coordinated fiscal and monetary stimulus. The New Zealand government's stimulus package totaled 4% of GDP and in both countries direct cash transfers to households are an important part of the package.

While Covid-19 infections are rising in most countries in Asia -- leading to progressively more restrictive travel policies (the Philippines has quarantined the entire province of Luzon until April 12 and Malaysia has effectively closed its borders for the rest of the month) – the South Korean outbreak appears to be under control. Indeed, South Korea may hold important lessons for other countries that with appropriate behavior changes – government compulsion was not needed -- the virus can be contained. With the most liberal approach to testing anywhere, over 0.5% of the population has been tested. Only about 3% of these tested positive.

Europe / Germany

Two things in particular have changed our baseline expectations for the impact of the coronavirus on the European economy. First, the spreading virus is resulting in substantial official quarantines and lockdowns. Spain has joined Italy in a full nationwide lockdown and other countries are to greater or lesser degrees doing likewise. The spreading virus is also driving voluntary containment and "social distancing" behaviours that will hurt consumption. We had modeled our previous baseline on a Hong Kong SARS-like shock in 30% of the euro area economy, that is, contained to several significant regions but not necessarily whole economies. However, with Italy and Spain in total lockdown, we have reached this level of impact before taking account of other countries. In short, our existing baseline is too optimistic. Second, the much-worse-than-expected data in China gives the first real indication of the damage that can be done by the virus and lockdown to an economy. Using the Hong Kong SARS shock to condition expectations has proven too optimistic as well

We have two reasons to think the decline in GDP might not be as large in the euro area as in China. First, the sectoral composition of GDP in Europe is weighted more towards services, which are less cyclical, less exposed to supply-chain disruption and easier to conduct in a "work from home" environment. Second, Europe is responding rapidly with income support and liquidity to ensure that the second order ramifications of the virus shock – that is, job losses and business failures – are minimised. Neither will prevent a large contraction in Q2, but both should help underpin expectations for recovery in H2 assuming the virus passes within the next few months.

We cannot stress enough how uncertain this situation is and how uncertain our forecasts are. We are confident in saying that the economic shock will be profound. Overall, is it not unreasonable to think that euro area GDP contracts by 3-4% in 2020, with Germany, given its larger exposure to manufacturing, contracting by 4-5%. We continue to believe that the recession will be concentrated in Q2 and that economies ought to be growing again in H2.

In Germany, given the unprecedented restrictions for public life - which seemed almost impossible just a week ago - the widespread closures of "non-essential" parts of the industry, trade and the service sectors, we now expect a massive drop in Q2 GDP ranging between 6% and 10%, i.e.. it could be substantially larger than Q4/2008 and Q1 2009 - the height of the GFC recession - taken together (-6.3ppt). Back then the industrial sector had to bear the brunt of the collapse in global trade, while most of the service sector was only indirectly effected through negative income and confidence effects. This time, the industrial sector will be hit again as evident by the announced factory closures of the majority of big European car producers. Although they are so far intended to last only into early April, we could imagine that industrial production in H1 might be some 15% below H2 2019. Moreover, this time many "non-essential" parts of the service sector are shutting down, too. Together with the slump in demand induced by "social distancing" this could cause turnover to contract by between 30% and 50% in segments such as clothing, furniture, entertainment & leisure, hotels & restaurants (accounting for 1/3 of private consumption). Even assuming a substantial catching up in H2, private consumption could fall by 4 % to 5% in 2020. Net exports could subtract by between 2 to 3ppt, with exports falling between 3% and 5%, a rather modest decline compared to the -14.3% suffered in 2009. Investment spending (machinery & equipment) might decline between 10% and 15% (2009: -20.7%). The labour market will be supported by the widespread use of reduced hours compensations benefits (Kurzarbeitergeld). Given collapsing demand for airlines, public transport, and other service providers, the peak in people working short shifts will most likely exceed the 1.4 m seen in 2009. For smaller companies it might be more difficult to use this tool. Therefore we expect a modest increase in the number of unemployed pushing the unemployment rate up by between 0.5 and 1ppt (2010: 5.0%).

United States

In a similar vein to our European colleagues, in the absence of a more appropriate historical parallel, we had previously modeled the current shock as a scaled version of the SARS experience for Hong Kong and Canada. In particular, we had modeled around 30% of a Hong Kong-style shock in March, April and May of this year. However, recent developments indicate that the spread of the virus will be both more significant than we assumed and provide substantially greater disruptions to economic activity in the near term. Over the past week we have seen a dramatic rise in social distancing in the US with closures of schools and universities; widespread shifts to work-from-home arrangements; shuttering of restaurants, bars and malls in major US cities; and cancellation of all major sporting events. On top of this, travel has been restricted from Europe and the UK, in addition to existing travel restrictions from Asia. Financial conditions have also reached their tightest levels since the global financial crisis, and concerns have risen about credit and liquidity shocks.

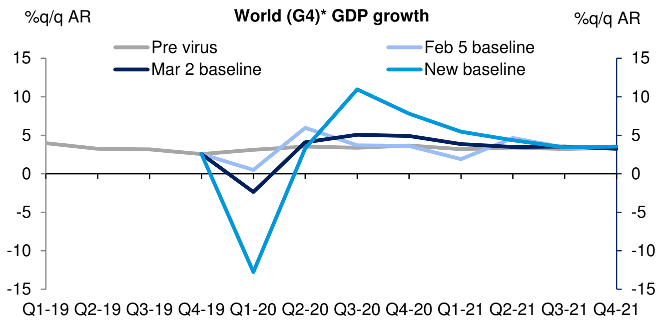
As the preceding paragraph makes clear, the US economy is currently undergoing a truly unprecedented shock that is likely to continue for some time with the spread of the virus set to accelerate further in the coming weeks. Recent guidance from the CDC indicates that gatherings of individuals should not exceed 10 people, and there is the potential to move towards more significant lockdowns in areas.

Forecasting growth in this environment is incredibly challenging. Indeed, this week the Federal Reserve decided to forego their regular quarterly forecasting exercises given this difficulty. Without a historical precedent to anchor forecasts, we use a similar framework to our European colleagues, which draws heavily on the recent experience in China. However, there are reasons to believe that the decline in growth in the second quarter will be more muted than Europe, including: (1) the manufacturing share of the US economy is only about two-thirds that of Europe, (2) the fiscal stimulus packages being contemplated are larger, with the House bill of automatic stabilizers likely to be scored at USD200-300bn (1-1.5% of GDP) and the White House now talking about additional measures reaching USD1.2tn (~6% of GDP), and (3) the Federal Reserve has had significantly greater scope to provide monetary accommodation, with the 1.5 percentage point decline in the fed funds rate over the past few weeks typically lifting growth in the first year by a percent based on simulations of the Fed staff's model (FRB/US).

Factoring in the above, we see the US economy experiencing the sharpest contraction in the post-World War period with activity plunging by about 13% on an annualized basis in Q2. To put this into perspective, this rate of decline is more than one and a half times the sharpest contraction during the financial crisis, which was -8.4% annualized in Q4 2008. However, along with the aforementioned policy measures, and several additional factors – the Phase 1 trade deal with China, a potential return of Boeing production, and the typical post-presidential election rebound in capex – we continue to see a rebound in activity with second half growth accelerating to nearly 5%, leaving full year (Q4/Q4) growth at a more modest reduction of -1.0%.

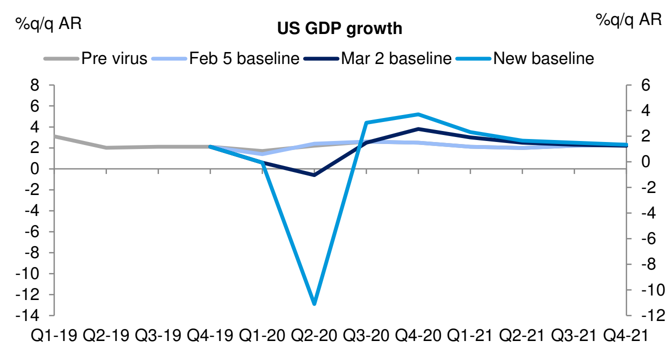
To briefly describe the composition of the record decline in output expected in Q2, we forecast that real consumer spending will decline 8.9% next quarter, reflecting a 13.6% plunge in goods spending and an unprecedented 6.3% annualized decline in services spending. To be sure, all areas of the economy will be impacted and the severe disruptions will no doubt weigh severely on nonresidential fixed investment (capex), which we expect to decline roughly 20% annualized next quarter, which would be nearly as severe as the plunge in Q1 2009 at the peak of the financial crisis. Given the disruptions to production and trade due to the global nature of the pandemic, net exports are expected to subtract around 130 bps from Q2 inflation-adjusted output while an expected plunge in inventories should subtract around 320 bps. Conversely, government spending will provide some modest offset as automatic fiscal stabilizers begin to kick in and additional fiscal measures provide a further cushion (more on this later).

Figure 1: World growth scenarios



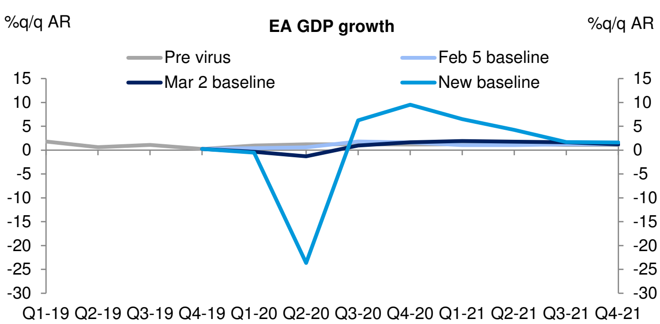
Source : Deutsche Bank

Figure 2: US growth scenarios



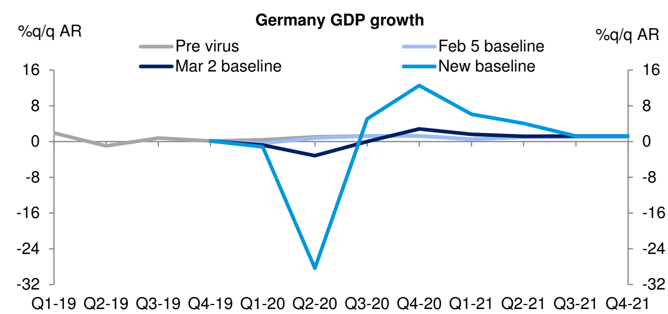
Source : Deutsche Bank

Figure 3: Euro area growth scenarios



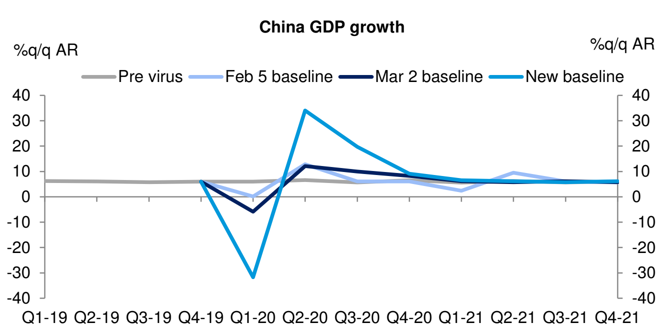
Source : Deutsche Bank

Figure 4: Germany growth scenarios



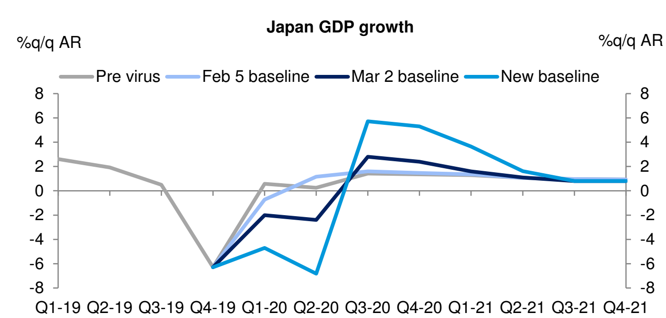
Source : Deutsche Bank

Figure 5: China growth scenarios



Source : Deutsche Bank

Figure 6: Japan growth scenarios



Source : Deutsche Bank

Figure 7: Summary of forecast revisions for 2020 (%saar for Q1 and Q2; %yoy for Q4)

	Q1 2020			Q2-2020			2020 (Q4/Q4)		
	new	old	impact	new	old	impact	new	old	impact
China	-31.7	-5.9	**-25.9**	34.0	12.1	**21.9**	4.5	5.8	**-1.3**
Japan	-2.4	-2.0	**-0.4**	-3.9	-2.4	**-1.5**	-0.3	0.2	**-0.5**
EuroArea	-0.5	-0.4	**-0.2**	-23.6	-1.3	**-22.4**	-2.9	0	**-2.9**
Germany	-1.2	-0.8	**-0.4**	-28.4	-3.2	**-25.2**	-3.3	0.6	**-3.9**
US	0.6	0.6	**0.0**	-12.9	-0.6	**-12.3**	-1.0	1.6	**-2.6**
World	-12.6	-2.4	**-10.2**	3.5	4.1	-0.6	0.7	2.8	**-2.0**

Source : Deutsche Bank

Macro policy responses to Covid-19

Fiscal action has already begun to take place and is expected eventually to boost recovery prospects substantially. Monetary policy has responded even more quickly, though with much more limited scope to stimulate the economy. Still, massive liquidity provision is helping to limit turmoil in key money and credit markets.

Fiscal policy: Measures taken or about to be taken in the euro area have been on the scale of 1-1.2% of GDP and are expected to increase significantly. The sum of automatic stabilizers and permanent demand stimulus measures could very well match the 5%+ of GDP implemented during the GFC if recent commentary by German and European leadership is to be believed. Stimulus packages of 1.5% of GDP are already under way in Italy and France, and 1% in Germany. Automatic stabilizers will likely add at least an additional 2% of GDP. Germany is engaging in substantial liquidity provision to private firms via loan guarantees.

In the US, fiscal action has started slowly, but promises to pick up soon as the scope of the crisis worsens. Automatic stabilizers plus demand stimulus measures could well exceed 5% of GDP and be implemented sooner than in the EA.

China's fiscal stimulus, including automatic stabilisers is expected to reach 3% of GDP, and Japan's scope for stimulus might reach something similar. New Zealand has already proposed a stimulus package of about 4% of GDP; Australia's is only about 0.9%.

Monetary policy: The Fed has made the largest moves, pushing policy rates down 150bps to the zero bound. They have made it clear that they do not plan to go negative on rates. However, they will engaged in large scale asset purchases (USD700bn) and massive repo operations to provide liquidity and strive to ensure smooth operation of the money, Treasury, and mortgage markets. They will likely entertain reopening special lending facilities as they did during the GFC.

The ECB has engaged most visibly in a large (EUR1.2trn) expansion of their targeted lending facility and will expand asset purchases by EUR120bn aimed at reducing credit spreads. Monetary easing measures in China and Japan have been on a much more limited scale.

Regional details

Euro Area fiscal measures

The message from German Chancellor Merkel, German Finance Minister Scholz and European Commission President von der Leyen is that Europe will do "whatever is necessary" to fight the virus. The Commission and ECB have already highlighted and clarified the available flexibilities in the EU fiscal, state-aid and bank capital rules. In terms of fiscal costs, the yardstick to have in mind is the GFC, when the euro area fiscal deficit increased by 5.6ppts of GDP between 2006 and 2010. This included permanent demand stimulus measures, automatic stabilisers, and one-off capital injections). There were also contingent liabilities that do not show in the numbers (e.g., credit guarantees).

In the initial response – to start immediately — fiscal policy will focus on replacing incomes and ensuring liquidity. This will be done through an enhancement of automatic stabilisers (more beneficial "short-shift" labour market support policies, higher unemployment benefits), one-off payments (compensation for lost business), financial transactions (bailouts) and contingent liabilities (credit guarantees). The objective is to buffer the virus shock and minimise the threat of job losses and business failures creating a second order shock. In a subsequent response, when the virus has peaked, we expect fiscal policy to focus on demand stimulus (structural deficit) to underpin the recovery.

We do not expect one overarching fiscal policy, rather a patchwork of national credit guarantees, income supplements, payment delays, etc. Countries' needs will evolve along different timelines and the precise responses will depend on national needs and what works best within local tax and benefit systems. The Commission has given examples of policies that would be consistent with the relaxed State Aid rules: "wage subsidies, suspension of corporate and value added taxes or social contributions", "financial support directly to consumers, for example for cancelled services or tickets", "help companies with liquidity shortages and who need urgent rescue aid" and "compensation for companies who have suffered damage directly caused by exceptional occurrences, including measures in sectors such as aviation and tourism".

Italy and France are implementing or implying fiscal packages worth 1-2% of GDP, similar to the structural (permanent) fiscal easing in the post-Lehman coordinated response. We expect a German stimulus package of about 1% of GDP. Once cyclical deficits and one-off costs are included, the increase in the deficit will be a multiple of this. The contingent liability from credit guarantees will be larger again (c.10% of GDP).

Next steps: Public finances have not fully recovered from the debt crisis. Without a systemic policy reset, from the area-wide point of view there may only be scope to absorb a transitory fiscal shock. However, individual members states could be significantly more vulnerable, not least Italy[2] . In a potentially hugely significant move, German Chancellor Merkel has indicated that Germany may support a common fiscal instrument to finance the fight against the crisis[3] . That would cross the rubicon and significantly underpin European cohesion. This could also be the route to monetary-fiscal policy coordination (see ECB section below).

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2 "Italian public finances: Valuable ECB backstop hurt by miscommunication", DB Focus Europe, 13 March 2020.
3 "Europe mulls joint debt sales, as virus dulls German resistance", Bloomberg News, 17 March 2020

German fiscal measures

The German federal government has so far mainly focused on emergency liquidity measures to support corporates facing severe liquidity shortages, including:

Liquidity provision: The government plans to broaden the existing liquidity programs – through potentially unlimited state guarantees – to facilitate firms' access to affordable loans (via their house banks, guarantee banks, the KfW). Private banks should be stimulated to give large amounts of liquidity-strengthening loans to corporates. The government plans amongst other things to

1. open the various KfW credit instruments to an increasing number of firms,
2. to increase the upper guarantee limits for guarantee banks and
3. to open up its "large-scale guarantee program granted to firms operating in laggard regions" also to firms outside such underdeveloped areas.
4. Firms which do not have access to the existing programs should receive financial support through the introduction of new special KfW programs.

The government expects a possible volume of guarantees of EUR460bn (13.2% of 2020 GDP), which would be accessible according to the federal government budget for 2020. If needed, these guarantees could be increased by another EUR93bn.

Easier access for firms to a moratorium of tax payments could mean a temporary loss in tax revenue of many billions of euros. The government promised to give also some smaller tax relief to corporates through improving the depreciation allowance for "digital goods" and granting non-incorporated firms to be taxed alike corporate companies. However, it is unlikely that these smaller relief measures will come into effect in the very near term.

Short-time allowances could cover 60% of a crisis-driven shortfall in employee compensation. The Federal Employment Agency should already be allowed to pay short-time allowance to firms if they report one-tenth of their employees to be affected by a crisis-induced reduction in working hours (before: one-third). Moreover, affected firms will not have to pay social contributions on the amount of the short-time allowance (before they had). Short-time allowance should also be made available to contract workers. The new regulations should come into effect already in April.

The government has also announced a cosmetic increase in investment spending of about EUR12.4bn, split over the next four budget years (i.e., EUR3.1bn per year (0.1% of GDP) each year over 2021-24). Given the existing investment backlog and with a view to the planning horizon of 2021-24, this increase in investment will not help much to cushion the near-term drop in GDP.

Euro Area/ECB monetary policy measures

Policies taken: The ECB has increased the capacity of TLTRO3 from 30% of eligible assets to 50% of assets, adding EUR1.2tn to the facility. The ECB is reviewing collateral to ensure banks have sufficient access to this lending capacity. The ECB has also offered an unprecedented discount on TLTRO interest rates. Banks that maintain their level of lending outstanding unchanged over the next year will received a 25bp discount below the deposit facility rate (currently -0.50%). It is equivalent to fiscal policy in the sense that the ECB will be paying its seigniorage income to banks that maintain their lending.

In addition to the existing EUR20bn of monthly asset purchases, the Governing Council approved a EUR120bn asset purchasing "envelope" that can be deployment flexibly: that is, it is not constrained by the ECB capital key. This will allow the ECB to target credit spreads (public or private) wherever they appear across the euro area.

It was announced that banks can use their capital and liquidity buffers and that supervisors will apply operational flexibility to the rules.

Forthcoming actions: The ECB has reiterated its pledge to use all its policy instruments as necessary to underpin liquidity, regain stability and smooth the transmission of monetary policy. There is an increasing likelihood of implicit monetary-fiscal coordination. The news that Germany could support a common bond (Eurobond) to finance the fight against the virus would be a significant structural change for policy in the euro area. There would need to be a way to expedite such a plan.

One potential approach is via the ESM, the euro area's crisis fighting tool. The ESM has an established issuance platform, it can be expanded in scale (currently has EUR410bn of unused firepower) and can define its tools. A coordinated draw on ESM resources would also nullify individual country stigma – and the conditionality would be defined to match the circumstances. With conditionality, the ECB could deploy OMT to control spreads. Moreover, the ECB can (and does) buy ESM bonds under the Asset Purchase Programme.

US fiscal response

The federal government's fiscal response to the coronavirus began slowly but has ramped up aggressively in recent days. Below we detail actions taken, responses in progress, and potential scope for a more comprehensive response.

Actions taken: On March 6, Congress passed the first emergency fiscal package of USD8.3bn, with USD2.2bn designated specifically for the Centers for Disease Control and Prevention, USD3.1BN for the Public Health and Social Services Emergency Fund and USD836mn for the National Institutes of Health. On March 13, President Trump declared a National Emergency under the Stafford Act, which immediately provided FEMA with between USD40bn and USD50bn to combat the virus. Trump also announced that the April tax date will be delayed, which could act as a roughly USD200-300bn bridge loan to households and businesses, and will also defer student loan interest payments which could amount to another USD20bn on an annualized basis.

Legislation in progress: The next phase was passed by the House last week with the President's support and is expected to be passed by the Senate this week, which has stayed in Washington DC despite a scheduled recess. On the spending side, the bill establishes a federal emergency program to provide payments to employees taking unpaid leave due to the coronavirus outbreak, expand unemployment benefits and provide grants to states for processing and paying claims, require employers to provide paid sick leave to employees, and establish requirements for providing coronavirus diagnostic testing at no cost to consumers, among a variety of other measures. While this bill has not yet been officially scored by the CBO, current estimates are on the order of USD300-500bn, or roughly 1.6-2.6% of GDP.

A more comprehensive response: Despite progress on these fronts, more fiscal action is likely to be forthcoming once the disruptions from the rapidly spreading virus become even more evident. In recent days, the Administration has backed a package of around USD1.2tn (~6% of GDP) composed of funds for households – perhaps in the form of direct checks on the order of USD1,000 per household, further small and medium sized business loans, and relief for airlines and possibly other severely exposed sectors. President Trump has also floated a payroll tax reduction or holiday which could add an additional USD200bn depending on how it is structured. While politics can be difficult in an election year, we ultimately believe that the gravity of the current situation is likely to force Congress and the Administration to reach bipartisan agreement to a massive fiscal package. For historical context, the structural budget deficit increased by about USD800bn in response to the financial crisis in 2009.

US monetary policy response

The Fed's response to the emerging coronavirus crisis has been rapid and aggressive. Below are the key actions they have taken:

Rates to zero: The Fed cut rates twice in recent weeks by 150bps bringing the fed funds rate to the effective lower bound of 0-0.25%. Their forward guidance indicates that this policy stance will persist at least until the economy has weathered disruptions from the coronavirus and the Fed is able to achieve its dual mandate of full employment and 2% inflation sustainably.

QE: The Fed also announced QE purchases of USD500bn of US Treasuries and USD200bn of agency MBS. These purchases are intended to restore the functioning of these markets and combat illiquidity. There is no specified timeline for these purchases but the signal was that they will be front loaded and Treasury purchases will at least initially be at longer duration than the market.

Credit policies: To better channel bank lending to households and businesses the Fed slashed the discount rate by 150bps and extended the term of this lending to 90 days. They also cut the required reserve ratio to zero, gave explicit blessing for US bank holding companies to tap their capital and liquidity buffers to lend, and encouraged banks to utilize intraday credit. This week the Fed has also dusted off crisis era programs to purchase commercial paper the (CPFF) and lend more aggressively and over a longer horizon to primary dealers (PDCF) at the discount rate.

Repo ops: In order to ensure ample liquidity, the Fed also introduced massive repo operation at extended terms — three-month and one-month tranches — that could amount to a maximum of almost USD5tn in additional liquidity, though the take up has been significantly less so far. Chair Powell noted that this was one reason the Fed decided to bypass dealers and undertake a large-scale QE program.

Forthcoming actions: Chair Powell reiterated that the Fed does not plan to use negative rates and is also not currently seeking authority to purchase other securities such as corporate bonds. However, other crisis-era tools could emerge, including the Term Auction Facility (TAF) which allowed the Fed to provide term funding to a broader set of counterparties against a broad array of collateral. If deemed necessary, we also believe the Fed would welcome the authority to expand the scope of what they can purchase, with corporate debt being an obvious target.

China policy measures

Despite the unprecedented shock to the economy, the policy response in China has been more muted, in some respects, than in the US or Europe. Importantly, financial conditions hardly tightened onshore in China. After years of credit tightening, there seems to have been very little leverage in financial markets so it was enough for the PBOC to ensure liquidity conditions didn't tighten. The have cut their key policy rate, the MLF rate, only 15bps and lowered banks reserve requirements by at least 100bps. Most significantly, probably, was the RMB800bn in refinancing provided to allow banks to lend to large corporations to allow them to weather the storm of the outbreak. This helps explain the very modest increase in unemployment, but was probably not a form of assistance that was provided to many SMEs.

We expect at least another 40bps of rate cuts and further RRR reductions. But what the economy needs is direct demand stimulus, which will take the form, we think, of income tax cuts, subsidies for automobile and other purchases and coupons for spending at hard-hit restaurants and other SME service enterprises. We expect the central government to increase its budget deficit by more than 1ppt (to 4% of GDP) when the 2020 budget is passed in April. But the augmented deficit – including off-budget funds and local government borrowing – will likely rise from 8% of GDP to 11% of GDP. Government finances have been on an unsustainable path for years, but with most government debt held by safe domestic investors there is no risk of a crisis.

Japan policy measures

The Bank of Japan has made transparent its lack of policy options, choosing to increase already ineffectual equity ETF purchases, raise modestly its purchases of corporate bonds and announce a new but familiar lending mechanism at an unattractive interest rate. This at a time when its peers are slashing interest rates and re-starting (or preparing to start) large QE programs. This places the focus on fiscal policy, highlighting the central dilemma in Japan of an already unsustainably high government debt constraining fiscal options when monetary policy has ceased to be effective. A rate cut may be offered if the yen strengthens below 100/USD, but a supplementary budget (the government is still deliberating the formal FY2020 budget but has no flexibility to add to it) is likely to be in the range of JPY10-15tn (1.8% - 2.7% of GDP), targeting healthcare, transportation and tourism and other badly affected sectors. Possible measures include subsidies for the tourism sector, cash benefits for childrearing households, and subsidies for manufacturers repatriating production to Japan. That would be enough perhaps to close the currently forecast output gap. But with the global economy in a deep recession and the growing possibility of a postponement of the Olympics, a package at least double that size would probably be needed.

Appendix 1

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